ESSENTIAL NEWBORN CARE PRACTICE AND ASSOCIATED FACTORS AMONG MOTHERS IN PUBLIC HEALTH INSTITUTIONS OF NEKEMTE TOWN, EAST WOLLEGA ZONE, OROMIA REGIONAL STATE, ETHIOPIA, 2017.

By;

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Essential Newborn Care Practice And Associated Factors Among Mothers in Public Health Institutions of Nekemte Town, East Wollega Zone, Oromia Regional State, Ethiopia, 2017.

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Abstract

Background: Essential new born care is a comprehensive approach planned to improve the health of new born through interventions before, during and after pregnancy, immediately after birth and during postnatal period. Among those interventions, safe cord care, early initiation of breast feeding and delay bathing are practiced by mothers. In Ethiopia about 87,000 new-borns die every year in the first weeks of life which accounts for 42% of all deaths of under-five mortality. The highest risk of death is occurred in the first 24 hours of life while within the first weeks of life greater than half of deaths occur.

Objective: The Purpose of this study is to assess the essential new born care practices and associated factors among mothers attending public health institution of Nekemte town, east Wollega zone, Oromia regional state, Ethiopia, 2017.

Methods: A facility-based cross sectional study design was conducted from February to march, 2017. Data were collected from 417 randomly selected mothers by interview making response rate of 98.8%. The collected data were coded, cleaned and entered into computer using Epi-Data version 3.1 and analysed using SPSS version 20 for further analysis. Multivariate logistic regression was used to identify associated factors & the strength of association was measured by odd ratios with 95% CI at p-value of < 0.05. Finally obtained results were presented by using simple frequency tables, graphs and charts.

Results: The study showed that the level of comprehensive essential newborn care practice was 47% in the study area despite 76%, 76.7% and 78.7% of respondents practice timely breast feeding initiation, safe cord care and delay bath for their newborn until 24 hours of life respectively. Number of live births (OR=0.3, 95%, CI=0.13, 0.73), home visit by health extension workers (OR=1.79, 95%, CI=1.08, 2.99) and skilled birth attendant's advice before and during delivery about essential newborn care (OR=2.39, 95%, CI=1.44, 3.98) were found to have statistically significant association with essential newborn care practice.

Conclusion and recommendation: This study indicated that the level of comprehensive essential newborn care practice is unsatisfactory in the study area. Promotion of essential newborn care through provision of community oriented awareness creation forum and provision of counselling and education on essential newborn care and neonatal danger signs to all pregnant women was recommended.

Key words: Essential newborn care practice, Newborn, Mothers, Neonatal care practices

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Abbreviations and Acronomy

AAU- Addis Ababa University

ANC- Ante Natal Care

CHC- Cheleleki health center

EDHS- Ethiopian Demographic Health Survey

ENB- Essential Newborn Care

ENCP- Essential Newborn care Practices

HEW - Health Extension Worker

IRB -Institutional research review board ethical committee

LBW- Low Birth Weight

LMICs - Low and Middle Income Countries

MCH - Maternal and child health

MOH- Ministry of Health

NGO - Non-Governmental Organization

NHC- Nekemte health center

NM- Neonatal Mortality

NRH- Nekemte referral hospital

PNC- Post Natal Care

SBAs - Skilled Birth Attendants

SDG- Sustainable Development Goal

STS- Skin To Skin Contact

WHO-World Health Organization

1. INTRODUCTION

Essential newborn care (ENC) is defined as a strategic approach planned to improve the health of new-borns through interventions before, during and after pregnancy, immediately after birth and during postnatal period. Preventing newborn deaths begins with the health of the mother. Cost effective prenatal and delivery interventions that improve maternal health and nutrition and save mothers' lives can save most new-borns too. Those interventions, during antenatal period include tetanus toxoid immunization, adequate diet like Iron, folate (& iodine), syphilis detection & treatment, Malaria prophylaxis, Breastfeeding counselling and Birth preparedness. Interventions during labor and delivery includes prevention of hypothermia, immediate breastfeeding & prophylactic eye care and during postnatal period early & exclusive breastfeeding, keeping warm (delay bathing), hygiene, cord care and immunization are the recommended care to be given for all newborn. Of these all interventions, cord care, early initiation of breast feeding and delay bathing are practiced by mothers at home during postnatal period and hence, this study intended to addresses these three practices (1-3).

World Health Organization (WHO) has come up with a set of guideline about the, Essential Newborn care Practices (ENCP) which are evidence based cost effective measures to improve neonatal outcomes. This guideline is to be used by all stakeholders who engaged with the neonate including the health care providers and mother, community and government(4).The mother should have to begin breast feeding within an hour after giving birth to ensure that the infant receives colostrum. Colostrum is richer in vitamin A, Antibodies and other protective factors than matured milk. It also considered as the first immunization for infants, so breast milk is the only food for first 6 months. (5).

The philosophy of essential newborn cares focused on the intervention which require cheap modern technology and easy to apply; resuscitation, radiant warmer to avoid hypothermia, early initiation of breast feeding, cleanliness, support for bonding and early treatment. As the first 28 days of life of newborn are most vulnerable time for a child's survival; particularly the first day, week and month of life are the most critical time for the survival of children and hence new-borns need a careful attention during this period to increase their survival rate and to improve their health outcomes through adhering to essential newborn care practice guidelines (1-3).

1.1 Statement of the problem

Neonatal mortality accounts for approximately two-thirds of all infant mortality and 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. Although neonatal period is a brief and short period of time, neonatal death during this time contributes for the larger share of under-five mortality rate(6).It is estimated that about 87,000 newborn die in the first 28 days of life every year in Ethiopia, with a larger share of (42%) all deaths of U5M, the highest risk of death is occurred in the first 24 hours of life while within the first weeks of life greater than half of deaths occur and about three-quarters of all neonatal deaths occur.

The causes of neonatal mortality are not well documented in Ethiopia, but different studies report causes such as sepsis, asphyxia, birth injury, tetanus, preterm birth, congenital malformations and unknown causes(7). According to UN inter-agency group child mortality estimation in 2015, in Ethiopia, the current infant, under five, and neonatal mortality rate is 41, 59, and 28 deaths per 1000 live births respectively and hence, With this regard Ethiopia has a huge homework to achieve SDG by 2030 which expect all countries aiming to reduce neonatal mortality to at least as low as 12 deaths per 1,000 live births and under-five mortality to at least as low as 25 deaths per 1,000 live births(6).

The single most cost effective intervention to reduce neonatal mortality and morbidity both in developed and developing countries is promotion of appropriate Essential newborn care practice. Despite this recommendation, there is inadequate adherence to it in middle- and low-income countries. According the study report from Uganda, about half of the mothers put substances on the cord, and only 41% of them initiate breast feeding between the time 1 to 6 hours and early bathing is also a culture/norm(8). Other African county, for instance in Cameroon, there is still a harmful traditional practice on new-born's umbilical cord care, larger percentage 54.2% of the mothers, mal-practice had been reported, only 11% of mothers applied nothing on the umbilical cord and Breastfeeding within one hour was carried out by 44.3% mothers (9).

According to the survey report from four regions of Ethiopia, neonatal care practice is poor as only 52.1% of mothers reported that their newborn were breastfed within the first hour after delivery and 16.9% of mothers applied butter while about 3% of them applied other substance to the cord and about 65.2% of women reported nothing applied to the cord stump

and the cord was clean & dry. Similar study from East Gojjam still shows poor neonatal care practice with the highest percentage of 65.6% of mothers bathed their newborn baby before 24 hours of birth which pose them at high risk for hypothermia, 58.4% of them started to feed their baby after one hour of life and only 41.6% of them started to feed their baby within one hour of life. According to the result, 5.4% of women applied substance on the umbilical cord stump(10), (11).

Currently Newborn care is given little attention even we can say it is neglected because of different reasons. One of the reason could be that neonatal death rate is not accurately known as most death occurs at home, and often not registered; additionally, negligence due to cultural adherence to that of newborn care, wrong assumption, neonatal care that is assumed costly and depends on modern technology and scarce postnatal service and traditional practices such as delayed breast feeding, untimely bathing and unsafe cord care which contributed to high neonatal mortality rates(2, 3).

From three African countries, Ethiopia is the one with the highest newborn death rate. The cause of the neonatal death includes infection, which accounts 47%, as well as asphyxia and preterm delivery are assumed to have higher part in causing neonatal mortality. The level of post-natal care coverage is also extremely low in Ethiopia; the great majority of women (92%) with a live birth in the preceding five years did not receive a postnatal check-up. Only7percent of women received postnatal care within two days, as recommended. Family care of the newborn is important for all babies such as promoting positive behaviours like breastfeeding and demand for health care throughout the neonatal period and afterwards; cleanliness and warmth provision reduce neonatal illnesses, especially infection(12).

Although a skilled attendant for every birth is ideal and, even when all women give birth in a facility, it may be affected by traditional practices after discharge and some components of maternal and essential newborn care can be practiced at home and hence, the family and community have an important role in newborn care practice and infants health outcomes.. To the best of the researcher knowledge, little is known about ENBC practice and factors affecting it in the study area and therefore, this study aimed to assess essential newborn care practice and its associated factors reported by recently delivered women (RDWs) in Nekemte town(6, 11).

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1.2 Significance of the study

Continually assessing practice of mothers on essential newborn care and its determinant factors is one of the key prerequisite information required in designing strategy that can improve newborn health outcomes and ending the preventable causes of neonatal morbidity and mortality.

Therefore, the finding from this study may help policy makers and health care planners by providing useful information about factors hindering good neonatal care practice, and forcing them to consider designing new program or improving the quality and effectiveness of the current intervention programs on neonatal care practice. Mothers and new-borns are directly benefited from the finding of the study as the identified level of practice and factors affecting it influences quality care of the mothers and new-borns.

In addition to that the study could provide information for those who are working on child health to focus on neonatal care practice in a community or professionals to provide high standard quality care by using evidence based practice; also the findings will help them by providing useful information for development of effective education program and awareness creation forums for mothers regarding essential newborn care practice.

Finally since there are limited published studies on ENBC in Ethiopia, study may provide pathways and information for other future researchers on similar study.

2. LITERATURE REVIEW

Globally, each year, approximately 2.7 million babies die during the first 28 days of life and another three million are stillborn and eleven newborn die every minute before their fifth birth day of life. Neonatal mortality accounts for approximately two-thirds of all infant mortality and 45% of deaths of children aged less than five years (under-five mortality). Ninety-nine percent of these deaths occur in middle- and low-income countries with half of deliveries occurring at home. Although neonatal period is a brief and short period of time, neonatal death during this time contributes for the larger share of under-five mortality rate(6).

An acceleration of the pace of the progress of under-five and neonatal mortality reduction is urgently required to achieve the sustainable development goal (SDG) target on the child survival particularly in high mortality countries in sub Saharan Africa. A Promise Renewed, aiming for a continued post-2015 focus to end preventable child deaths. With the end of the MDG era, the international community is in the process of agreeing on a new framework –the Sustainable Development Goals (SDGs) which proposed SDG target for child mortality represents a renewed commitment to the world's children: By 2030, end preventable deaths of newborn and children under five years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 deaths per 1,000 live births and under-five mortality to at least as low as 25 deaths per 1,000 live birth(6).

Even though there is a limited data regarding neonatal care in sub-Saharan Africa, WHO has taken the magnitude of the problem into consideration and come up with a set of guideline about the, Essential Newborn care Practices (ENCP) which are evidence based cost effective measures to improve neonatal outcomes. This guideline is to be used by all stakeholders who engaged with the neonate including the health care providers and mother, community and government. These outlines of practices include clean delivery and clean cord care, thermal protection, early and exclusive breastfeeding, initiation of breathing, resuscitation, eye care, immunization, care for the low birth weight newborn, and management of newborn illness(4).

Moreover, few sub-Saharan African studies have assessed inequity in uptake of newborn care practices. The World Health Organization recommends improving care practices at birth in order to decrease neonatal morbidity and mortality. These have been described as

essential newborn care (ENC) practices (13) and include safe cord cutting, delayed bathing and initiating breastfeeding within the first hour after birth.

These easy practices are significant for all babies in order to save lives, but also need to be integrated into a comprehensive newborn care package which includes immediate care at birth, care-seeking behaviour, and additional care for sick and premature babies, and resuscitation. Successful promotion of ENC at scale could significantly contribute to reducing the leading causes of newborn deaths in LICs, especially those due to sepsis/pneumonia, preterm births and tetanus (14).

2.2. Components of Essential Newborn Care

Cord care: It is one of the essential newborn care practices. Clean blade, tie and keeping the cord environment clean and dry are the main intervention in clean cord practice. It is very useful in reducing the incidence of neonatal tetanus and umbilical sepsis, but evidence did not support topical treatment of the cord. But there are different cultural beliefs and practice that affect the cleanliness of the cord, mostly in developing countries the problem is seen repeatedly, which may be related with low level of economy of countries. Many studies indicate the problem is more common in rural areas than urban. There are different cultural belief in most countries related with unclean cutting process and putting different materials on the umbilical cord (15).Once the umbilical cord separates, minimal discharge is expected. Until the cord falls off, the area should be kept dry as much as is possible to promote separation and healing(3, 16). The mother should be aware of danger signs of umbilical cord infection including pus discharge, reddening around umbilical stump and/or the surrounding skin and other signs of infection including fever, lethargy and difficulty in breathing (3).

A study done in India 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 practising, 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 (17). 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(18).

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(19). 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 unboiled 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. The newborn was often wrapped in an old washed cloth 73.8 %(20).The recent study done in Nepal, TU teaching hospital in 2010 shows that about 20% of mothers are cleaning the cord with warm water and cotton, 20% of mothers clean it by oil and 60% of them were applying nothing to clean the umbilical cord stump(21).

Another study in Bangladesh in 2011 shows the severity of the problem on clean cord care, which shows blade was the most common modern instrument used to cut the umbilical cord. Relatively few of these blades came from a delivery bag (7.6%). According the result, 43.8% of them was applying something on cord had been reported, of these 29% were potentially harmful substances (mustard oil with garlic, boric powder, shidur, talcum powder, blue ink, turmeric juice). Only 42.8% of new-borns received complete cord care (11, 15, 22).

A population based cross sectional study conducted in Uganda in 2010 revealed cord cutting was mostly by use of a razorblade (67%) of which 10% where reused and only 28% reported to have used cord scissors. About half of the mothers put substances on the cord (such as powder, surgical sprit, salty water, or lizard droppings), which contradicts with WHO recommendation and affect the cleanliness of the umbilical cord (8).

A cross sectional study conducted in Cameroon in 2011 revealed that Cord bandage was applied by 85% mothers, application of traditional substances on the umbilical cord was by 54.2% mothers, antiseptic application by 36% mothers and 11% of mothers applied nothing on the umbilical cord(9). Another study conducted in Chitwan district, 2012 to analyse the patterns and factors affecting newborn care practices: cord care, breastfeeding and bathing, revealed that cord care had been practiced by 95% mothers applying nothing on the umbilical cord and about 5% of mothers applied traditional substances on the cord(23).

A cross sectional household survey conducted in four regions of Ethiopia namely; Oromia, Amara, Tigray and Southern nations, Nationalities & people (SNNP) in 2013, states that 65.2% of women reported nothing applied to the cord stump and the cord was clean & dry, where as 16.9% of women applied butter and 3% of them applied other substances to the cord(10). Similar study conducted in East Gojjam shows 5.4% of the respondents were reported as they had substance application on the umbilical stamp, the most item of substance that was to be applied on the umbilicus was 80% butter and Vaseline ointment which was 20%)(11).

Early initiation of breast feeding

WHO recommended, breast feeding should be started within one hour of birth. Feeding should be as frequent as the baby demand without prelacteal feeds or other fluids and food. A recent trial 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) (3)..

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(17).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 "kumkumkesar (18). The recent study done in Nepal, TU teaching hospital in 2010 shows that respondent's practice to initiate breast feeding within one hour were 90%. All 100% respondents have had practice for colostrum feeding and exclusive breast feeding. Majority 75% respondents initiated breast fed within two hours(21).

Similarly the study done in Nepal in 2006 shows all the new-borns were breastfed but clarified butter (ghee), oil, honey, sugar or animal milk was sometimes given to the new-borns (37/240, 15.4%) before initiation of breast feeding. Ghee or oil was given to 19(7.9%) new-borns. Overall, 203(84.6%) had given colostrum or breast milk to their babies as the first feed. Thirteen mothers (5.4%) had given breast milk mother lactating mothers when there was a delay in initiation of breast feeding. Twenty six out of 240(10.8%) mothers had discarded colostrum before initiation of breast feedingThe rates of initiation of breast feeding were 57.9% within one hour and 85.4% within 24 hours(20).

Another study conducted in Chitwan district, 2012 to analyse the patterns and factors affecting newborn care practices: cord care, breastfeeding and bathing, revealed that all new-borns were breastfeed. Similarly all mothers had given colostrum as first fed and further continued breastfeeding but rate of initiation of breastfeed was only 40.3% after one hour of delivery while 24.3 % breastfeed within one hour of delivery and 7.2 percent had breastfeed after 24 hours of delivery(23).

A study done in Uganda shows although all babies were breastfed only about half were initiated within the first hour of birth, with 41% were initiate breast feeding within 1-6 hours. Additionally the study done in Nepal in 2000 shows 99% of women had breast fed. A taste of clarified butter (ghee), sugar, or honey was sometimes given before feeding began (12%), but 85% of women said that the first feed given to their newborn infants was breast milk. According to the result, Breast feeding was started within an hour of birth for 63% and within six hours for 91%. Breastfeeding rates were about 99% at one week. Colostrum was discarded before the first feed in 45% cases; foremilk was discarded at every subsequent feed in 69%(19).

A cross sectional study conducted in Cameroon in 2011 revealed that Breastfeeding within one hour was carried out by 44.3% mothers(9).

Early and exclusive breastfeeding is important in the newborn. In Ethiopia, only 52% of neonates are initiated on breast milk within one hour. Colostrum which is the first breast milk is highly nutritious and protective to the newborn (12). A cross sectional household survey conducted in four regions of Ethiopia namely; Oromia, Amara, Tigray and Southern nations, Nationalities & people (SNNP) in 2013, states that only 52.1% of mothers reported that their new-borns were breastfed within the first hour after delivery, Additionally, 44.5% of mothers reported that they squeezed out the colostrum before breastfeeding the newborn;. A smaller proportion of mothers (12.4%) reported feeding their new-borns food or liquid other than breast milk in the first two days. Among those new-borns that were given other foods, the most commonly reported by mothers were plain water (32.7%), sugar water (25.1%), fresh butter (14.2%), and milk other than breast milk (13.2%)(10).

A study done in East Gojjam in 2013 shows 41.6% of mothers started to feed their baby within one hour of life where as 58.4% of them started after one hour of life(11).

Different study still shows there is lack of awareness about early initiation of breast feeding. In some communities their traditional practice to discard the colostrum, which has high nutritional value for the neonate. Breastfeeding should be initiated as early as possible to

initiate the breathing system in addition to its ideal nutrition for the neonate, but literatures shows delaying of breastfeeding is common practice in developing countries.

Thermoregulation/ Bathing

The newborn is much less efficient in thermoregulation than adults (24). Immediately after birth, the newborn begins to lose heat, a process which puts them at risk of hypothermia. Heat loss occurs through conduction, convection, radiation and evaporation (4). Low birth weight and premature infants are at an even greater risk and lose heat easily (21). Hypothermia is defined by the World Health Organization as an axillary temperature below 36.5°C (3).Recommendations have been made by WHO to ensure the newborn is not at risk of hypothermia. These are described in 10 steps referred to as "warm chain". They include warm delivery room, immediate drying, skin to skin contact, breastfeeding, bathing and weighing postponed, appropriate clothing/bedding, rooming in, warm transportation and resuscitation, training and awareness raising(4).

According the study done in Nepal in 2000, almost all (99%) of babies had been bathed within six hours of birth, three quarters within the first half hour, and 92% within an hour(19).Similarly, another study done in Nepal in 2006 shows almost all of new-borns were bathed within six hours after birth. Nearly half of them were bathed within ten minutes, 88.9% within half an hour and 96% within one hour(20). The recent study done in Nepal, TU teaching hospital in 2010 shows 60% of mothers delayed bath until 24 hour(21)

According to the study done in Uganda in 2010, early bathing was the norm, with 56% of the babies bathed within the first 6 hours, 82% within the first 12 hours and almost all during the first 24 hours(8). A study done in Cameroon in 2011 shows that, the first bath was given at least 6 hours after birth by 70.3% mothers and in contrary the study done in Chitwan in 2012 shows that 96.7 % of t mothers reported that they had bathed their baby after 24 hours for the first time after delivery and only 3.3 % had bathed within 24 hours of birth(23). Another study done in India in 2013 reported that 64% of mothers Delayed bathing of their baby after 48 hours (17). Another study done in India in 2014 revealed that highest percentage 95% of the mothers massaged the baby with oil before bath and the lowest percentage 3% gave bath to the baby with milk and 3% added a gold coin to the bath water of the baby(18).

A cross sectional household survey conducted in four regions of Ethiopia namely; Oromia, Amhara, Tigray and Southern nations, Nationalities & people (SNNP) in 2013, states that in only 25.3% of births did the mother report that bathing of the newborn was delayed at least 24 hours (10). With respect to adopting a good bathing practice, the result of the study done in East Gojjam shows only 34.4% of the respondents were bathed their newborn baby at 24 hours and onwards after birth. A majority, 65.6% of respondents were bathed their newborn baby before 24 hours of birth(11).

2.3. Determinants of Neonatal Care

Research on newborn survival so far has either focused on examining the determinants of mortality or shown the patterns of newborn care practices by education, ethnicity or socioeconomic status and focused on examining socio economic and demographic predictors of child Mortality(2, 3).

The study done in Bangladesh in 2011 shows only 42.8% and 5.1% new-borns received complete cord care and complete thermal protection. Only 44.6% of new-borns were breast fed within one hour of birth. The proportion of new-borns that received postnatal care within 24 hours of birth was 9%, and of them 11% received care from medically trained providers. Higher level of maternal education and richest bands of wealth were associated with complete thermal care and postnatal care within 24 hours of birth but not with complete cord care and early breast feeding. Use of sufficient antenatal care and assisted birth by medically trained providers were significantly associated with several of the newborn care practices (8).

Educational back ground: Different studies agree on an important way to empower women by education; it is obvious that empower future mothers to be stronger and wiser advocate for their own and children health. Educated girls tend to marry later and have fewer, healthier and better nourished children. Mothers with little or no education are much less likely to receive skilled support during pregnancy and child birth, and both mothers and their babies are in higher risk of death(8). Different studies shows education has a positive impact on good newborn bathing practices for example the study done in Nepal 2011, shows that Education had a positive effect on early initiation of breastfeeding showing that mothers having higher education (OR 2.56; 95% CI: 1.26, 5.21), secondary education (OR 1.91; 95% CI: 1.34, 2.73) and primary education (OR 1.69; 95% CI: 1.25, 2.28) were more likely to initiate early breastfeeding than women with no education(25).

Another study done in Pakistan in 2014 argues that maternal education level of primary or less was significantly associated with having a home delivery, discarding colostrum and applying kohl to the new-born's eyes. However, early bathing, low exclusive breastfeeding rate and prelacteal feeding were universal across all income and education levels(26). Similarly study done in Goba Woreda in 2011 reveals that mothers who had formal education were 1.4 times as likely to initiate breastfeeding with in the first hour after delivery as compared to those mothers who had no formal education [OR:1.4 (95%C.I:1.03-2.03**)** (14).A study done in Gojjam also shows educational status of the mothers have statistically significant association with ENBC practice of women.

Those women who attend primary and above education 7.0 times were more likely to practice ENBC as compared with those women who are unable to read and write with [AOR=7.02, 95% CI = (2.27, 21.73**)]** (11).Different literatures agree that education of the women tend to save lives of mothers and babies by enabling women to delay and prevent pregnancy when they are too young or too old, and to space their births at healthy intervals, which avoid neonatal death related to pregnancy Complication. Totally women education is a priority method to solve the problem.

Health service utilization:

The 2011 EDHS result shows that 34% of women who gave birth in the five years preceding the survey received antenatal care from a trained health professional at least once for their last birth. Antenatal care from a trained health professional has increased by 6% since 2005 EDHS estimate 28% (9). As save the children 2010 stated thousands of children die every day in developing countries because health system are grossly under-funded and cannot meet the needs of the people. More funding is needed for staffing, transport equipment, medicine, health worker training and supportive supervision, and the day to day cost of operating these systems(12)**.**

A study done in Nepal in 2011 shows a positive relationship between health facility delivery and early initiation of breast feeding. Health facility delivery had a positive influence on early initiation of breastfeeding, with the infants who were delivered in health facilities were more likely (OR 1.67; 95% CI: 1.25, 2.23) to be breastfed within one hour than their counterparts born at home(25). Another study in Pakistan also shows a negative influence of home delivery on newborn care in relation to institutional delivery. Having a delivery at home was a risk factor for poor cord care (OR=4.07, 95% CI 1.78 – 9.40) and discarding colostrum (OR= 3.18, 95% CI 3.81- 7.31). 40% of mothers who reported a home

delivery did not seek antenatal care. Tetanus toxoid coverage among those reporting a home delivery was 57% as compared to 94% in institutional deliveries. Exclusive Breast Feeding was much lower in Home deliveries (26).

Additionally, A study done in Goba Woreda in 2011 among the obstetric and health service related factors, place of delivery and postnatal information or advice on breastfeeding were significantly associated with timely initiation of breastfeeding.]).Mothers who delivered in health institutions were twice as likely initiate breastfeeding as compared to those delivered at their home[OR = 1.9(95%C.I:1.30-2.71)]). Urban mothers were 4 times as likely to practice timely initiation of breastfeeding compared to their rural counterparts [OR: 4.1 [95%C.I: 2.31-7.30], P < 0.001. Similarly, mothers who got postnatal education on breastfeeding were 2.7 times more likely to initiate breast feeding within one hour after delivery[OR: 2.7(95%CI:1.86-3.94)], P < 0.001(14). In contrary a study done in Uganda 2010 shows there was no significant association between any of the explanatory variables (including ANC) with either optimal thermal care or good neonatal feeding. Although significantly more mothers with high SES delivered in health facilities, place of delivery did not predict any of the ENC practices assessed(8).

A study done in Gojjam reveals positive relationship between postnatal care visit and ENBC**.** Immediate PNC visit was showed statistically significant association with ENBC practice of women. Those women who had got immediate PNC visit after delivery were 3.2 more likely to practice ENBC when compared with those who had not go immediate PNC visits after delivery with [AOR=3.22, 95% CI = (1.18, 9.48].Advice about ENBC practices was showed statistically significant association with ENBC practice of women. Those women who had got advise about ENBC practices during monthly pregnant mothers group meeting were 4.8 times more likely to practice ENBC as compared with those women who had not got advise about ENBC practices during monthly meeting [AOR=4.78, 95% CI = (1.11, 19.79] (11).

Socio-economic factor:

The economic power of the women have a great impact on maternal and neonatal or community as a whole. As a women economically power full delay of health services due to lack of money can be avoided and also increase a decision making power and avoid dependence of women on their husband. Totally economic empowerment is a power itself to solve many problem especially related with maternal and neonatal health care.

A study done in Pakistan in 2014 shows a family income of Rs.10, 000 or less / month was significantly associated with having a home delivery (OR=2.51, 95% CI 1.09 –5.76), unhygienic cord care (OR=2.49, 95% CI 1.29 – 4.81) and application of kohl to the new-born's eyes (OR=2.64, 95% CI 1.33 –5.23)(26).

Another study in Gojjam in 2013 shows statistically significant association between Access to radio and ENBC practice of women. Those women whose household had radio were 7.9 times more likely to be practice ENBC as compared with those who women whose household had not radio with [AOR=7.91, 95% CI = (2.64, 23.67**]**(11).

Mothers' knowledge on ENBC practices and newborn danger signs:-The knowledge of the mothers has greater influence on care of the Newborn. Study in Nepal, Chitwan District revealed that knowledge regarding newborn care & danger sign of newborn found to be associated with cord care(27). The same study revealed that poor mothers' knowledge was associated with poor practices. Study in Ghana, showed that the main predictor of good neonatal feeding was maternal knowledge of newborn danger signs that women who could mention at least 4 danger signs of the neonate were 4 times likely to give good neonatal feeding to their babies (AOR = 4.75, Cl: 2.43–9.28),*P*< 0.001.(28). Study conducted in Mandura district, Metekel zone, Benshangul Gumuz region revealed that The odds of good newborn care practice among mothers who know first breast feeding time (AOR=1.74 95% CI: 1.12, 2.71) and first bathing time (AOR=3.79 95% CI: 2.51, 5.75) were higher as compared to their counterparts(29).

Parity: Parity could be determinant factors especially for those who did not use family planning methods and in those countries with high fertility rate. A study done in Uganda in 2010 shows that multiparous mothers were less likely to have good cord practices when compared to primiparous (OR 0.5, CI 0.3 - 0.9); and so were mothers whose labour began at night compared to those whose labour began during day time (OR 0.6, CI 0.4 - 0.9). (8).

Many of the study done in developing countries like in Uganda, Nepal and Ethiopia shows that there are still poor neonatal care practice with regard to cord care, early breast feeding initiation and thermal care. This poor practice is commonly done at home and expose the neonates for different infection which in turn contributing for neonatal morbidity and mortality and finally resulting further fostering neonatal mortality rate from preventable causes. Different studies reported as educational status of the mother, knowledge of the mother on newborn danger sign, place of delivery and parity were found to be independent predictors of neonatal care practice(8, 11, 25).

2.4. Conceptual frame work

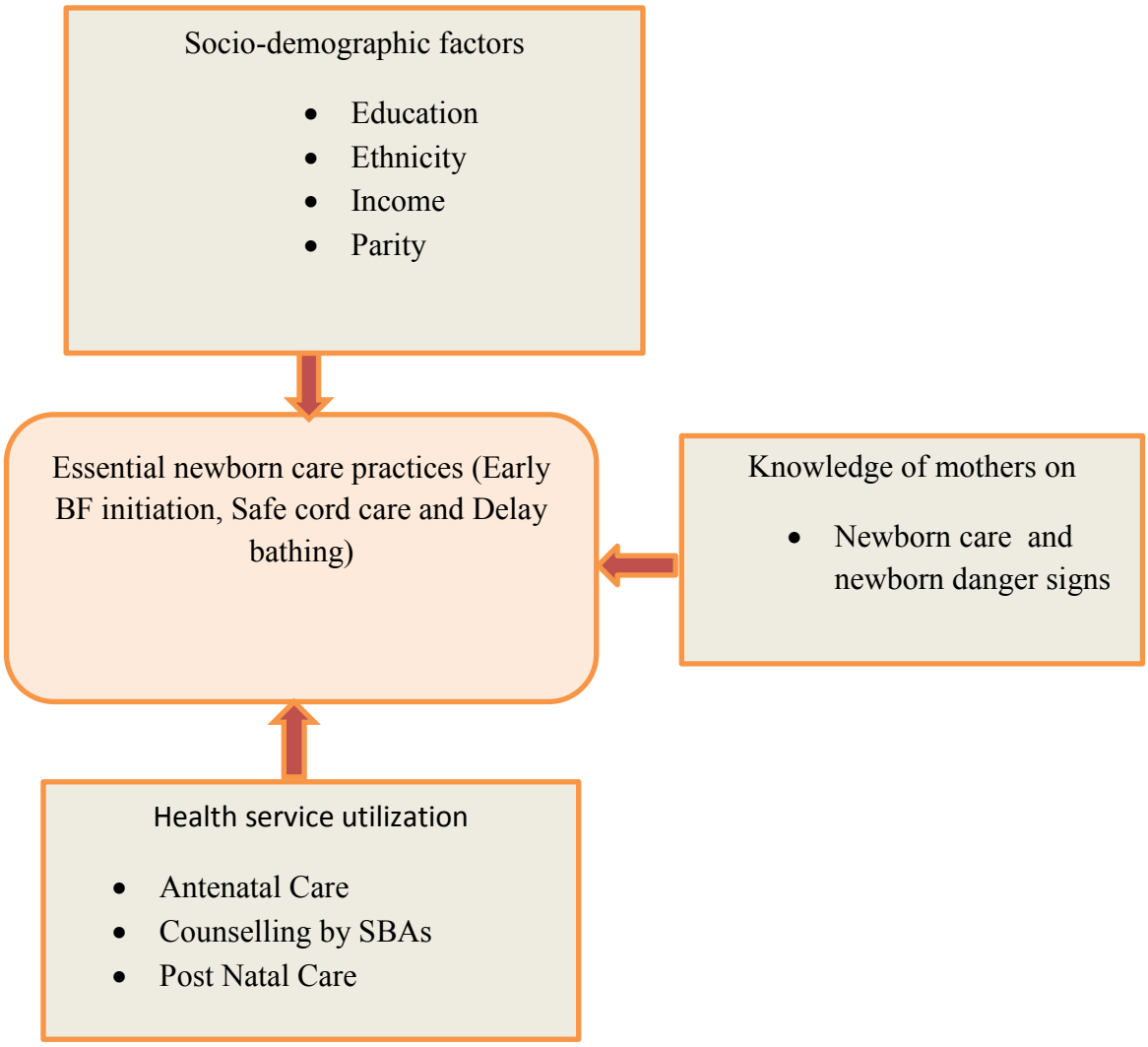

Figure 1. Conceptual frame work on factors associated with newborn care practices, constructed after reviewing different literatures(10, 11, 29).

3. OBJECTIVES

3.1. General Objective

To assess essential newborn care practice and its associated factors among mothers in public health institution of Nekemte town, east Wollega zone, Oromia, Ethiopia, 2017.

3.2. Specific objectives

- To determine essential newborn care practices among mothers
- To determine the factors associated with safe cord care practice
- To determine the factors associated with early breast feeding initiation
- To determine the factors associated with delay bath of newborn baby

4. METHODOLOGY

4.1. Study Area and period

A Facility-based cross-sectional study was conducted in Nekemte town public health facilities, East Wollega zone from February, to March, 2017. East Wollega zone is one of the 17 zones in Oromia Regional State located in the western part of the region at 331 km away from Addis Ababa. The study area, Nekemte town, is the town of the zone and it is administratively divided into 6 Kebeles. Nekemte town has three public health institutions, namely Nekemte referral hospital, Nekemte health centre and Cheleleki health centre each giving health care service to the population of the town and nearby populations. According to the 2006 Federal CSA abstracts Nekemte total population is approximated to 88,536 and with about 14,541 households. The total number of under-five children in the town is estimated to be 16,398 at the end of 2007 based on the assumption that 18 % of the total population is under-five children.

4.2. Study design

Facility based cross sectional study design was employed

4.3. Source population

All women in reproductive age group who have less than six months of age infant and visited public health facility in Nekemte town for MCH service.

4.5. Study population

Randomly selected women who have infant of less than six month of age and attending MCH services.

4.4. Inclusion and exclusion criteria

Inclusion criteria: All Women who gave a live birth, who were within six months of postpartum and came for immunization and postnatal care to health facility during data collection period and mothers who were willing to participate were included in the study.

Exclusion criteria: Women who were seriously sick or with known mental illness, neonatal death and infant with care giver/ guardians were excluded from the study.

4.6. Sample size determination

The required sample size was determined by using single population proportion formula. The prevalence of ENBC practices on these three composite variables in the study area is unknown. But, according to study done in Ethiopia 2013, the prevalence of early breast feeding initiation is 52.1% (10).

Therefore; taking this (p=0.52) and 5% marginal error, sample size was calculated as follows= $\frac{(z\alpha/2)^2.p(1-p)}{d^2}$ = $(1.96)^2$* 0.52*0.48 = 384. By adding non-response rate of 10%, final sample size was **422.**

4.7. Sampling procedures

Systematic random sampling was used to select the study participants from the three public health facilities in Nekemte town namely; Nekemte referral hospital (NRH), Nekemte health centres (NHC) and Cheleleki health centre (CHC). The previous 3 months clients flow to the three health facilities for MCH service was reviewed from registration book to estimate the expected number of mothers that will visit the clinic in one month period. Therefore, the average number of mothers visited the clinic in the previous three months back was 492, 243, and 135 for NRH, NHC and CHC respectively.

The calculated sample size 422 was allocated to each health facility based on proportion to population size of the 3 health facilities. Sample size to be allocated to each health facility was calculated by dividing the product of total sample size required and total number of mothers expected to visit MCH clinic of each health facility in one month period to the sum of total number of mothers expected to visit MCH clinic of the three health facilities. Accordingly, proportional allocation to population size for each health facility is **239, 118 and 65** to NRH, NHC and CHC respectively. Sampling interval (k) was determined by dividing the total number of mothers expected to visit MCH clinic of each health facility in one month period by number of sample size allocated to each health facility, thus sampling interval is approximately 2 for each health facility. Systematic random sampling was used to select the study participants and the first study subject was selected from the first or the second client randomly, and then taking every 2^{nd} clients from mothers came for MCH service.

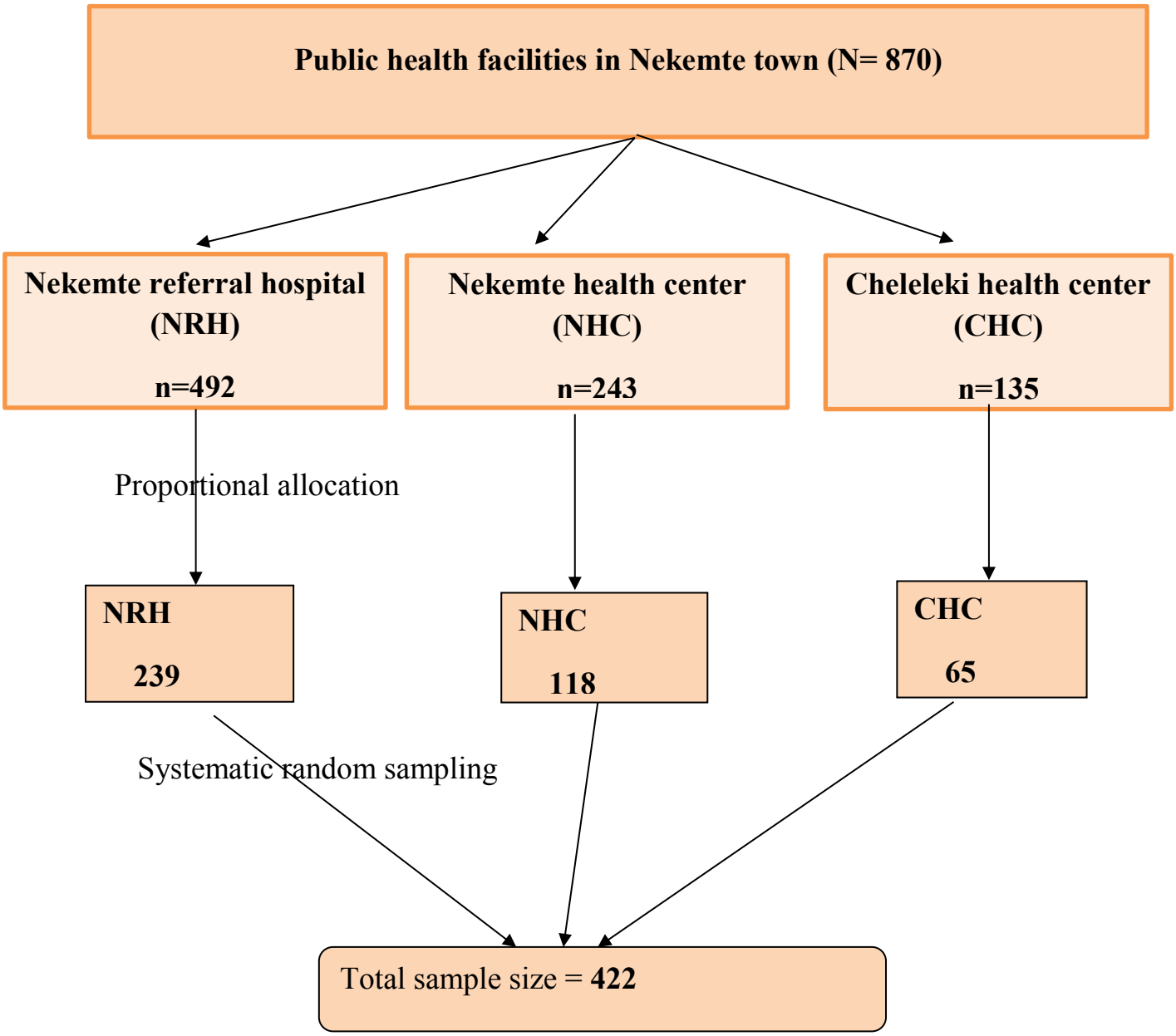

Figure 2. Schematic presentation of sampling procedure

4.8. Data collection tools and procedures

Semi structured questionnaire was adapted from standard questionnaire developed by the Saving Newborn Lives Program and different relevant literatures (10, 11, 28, 29). The questionnaire includes modules on respondent Socioeconomic characteristics, information on health service utilization such as antenatal care, delivery and essential newborn care, postnatal care for mother and baby, mothers knowledge on newborn care and neonatal danger signs).

Data collection tools development was mainly based on the issues the study wish to investigate. The tool was prepared in English version and it be translated to local language, Afan Oromo again translated back to English language to check consistency. The translated Afan Oromo version questionnaire was pretested in similar areas outside of the study site prior to the actual data collection.

Three data collectors, BSc nurses and one BSc supervisor were recruited from outside selected facilities. The purpose of the study was explained to them to minimize bias during data collection. The supervisor and data collectors were trained using lecture method for one day on basic principles of data collection, on questionnaire and how to gather information using interview by the principal investigator. An additional training on data completeness, cross-checking and correction actions was given to the supervisor.

Accordingly the supervisor continuously followed and supervised data collectors. The supervisor collected and cross-checked the completeness of questionnaires received from data collectors and took corrective measures accordingly. In addition to these activities the supervisor report and discuss with the principal investigator on a daily basis throughout the data collection period. The data was compiled, cleaned and entered at the end of each data collection day.

4.9. Variables of the study

Dependent variables: Essential newborn care practices (Safe cord care, Delayed bathing, Early initiation of breast feeding).

Independent variables: Age, Educational status, Ethnicity, Marital status, Parity, Mothers' Knowledge on newborn danger sign, Health care service utilization.

4.10. Operational Definitions

Essential newborn care practices: A set of practices by mothers to newborn baby which includes delay bathing, safe cord care and early initiation of breast feeding.

Early initiation of breast feeding: Mothers initiating breast feeding to newborn baby following delivery within one hour of life.

Safe cord care: Keeping the cord clean and dry without application of any foreign substances until the umbilical stump falls off (until 7 days of old).

Thermal care: Avoidance of bathing before 24 hrs of delivery and well wrapping of neonates whole body particularly the head with dry cloth.

In this study, new born care practice was dichotomized based on the three newborn care practices mentioned above. Those mothers who reported three of the above mentioned practices were categorized as **"good newborn care practice"** those who reported two or less of the above practices were categorized as **"poor newborn care practice"**

Good knowledge on newborn care practice: Those mothers who respond correctly above 50% of knowledge related questions

Poor knowledge on newborn care practice: Those mothers who respond correctly less than or equal to 50% of knowledge related questions

With regard to knowledge related to neonatal danger signs, those mothers who identified at least 4 among the six listed danger signs categorized as **good knowledge on neonatal danger sign** and for those who mentioned less than four of danger signs categorized as **poor knowledge on neonatal danger sign.**

4.11. Data quality management

To maintain data quality, all data collectors are health professionals (BSc nurses) who had knowledge on newborn and all of them were trained on data collection procedures by the principal investigator. Moreover, 5 % of the sample size was pretested at Ghimbi hospital and necessary amendment was made according to the Pretest result.

4.12 Data Processing and Analysis procedures

After the collected data checked for consistency and completeness, it was entered into Epi data Version 3.1 and was analysed using SPSS version 20. Bivariate logistic regression analysis was used to see significance of association between dependent and independent variables. P-Value less than 0.05 were taken as statistically significant. Multiple logistic regressions were used to identify associated factors & the strength of association was measured by odd ratios with 95% CI. Variables that had significant association with the outcome variables in the crude analysis were entered in to multivariable logistic regression model. In a Multivariable logistic regression model using adjusted odds ratio (AOR) independent predicators of new-born care practices among postpartum mothers were identified through controlling the confounding effects of other variables. descriptive statistics was calculated and finally obtained results were presented by using simple frequency tables, graphs and charts.

4.13. Ethical Consideration

After the proposal get approved by IRB of the department, a letter of permission was obtained from Addis Ababa university department of Nursing and Midwifery. Again Official letter of permission was obtained from Oromia regional health bureau and Guto Woreda health bureau. A letter of cooperation from Guto Woreda health bureau was brought to the selected health facilities before proceeding to the data collection process. Respondents were given a clarification about the aim of the study and verbal consent was obtained before starting interview. Informed verbal consent was obtained from each selected study participants during data collection to confirm willingness. Each woman was informed about the purpose of the study and participation was voluntary. Also mothers were informed that they are free to withdraw consent and discontinue participation at any time. Confidentiality of information and privacy of participants was assured for all the information provided, to preserve the confidentiality the data was not exposed to the third party except the principal investigator.

4.14. Plans for Dissemination of the Findings

After completion of the study the result will be defended at AAU, college of health science, Department of Nursing and Midwifery and also the finding of the study will be submitted to Department of Nursing, and advisor of the project and the results will be published in national and international journal and presented in different conferences.

5. RESULT

5.1. Socio demographic characteristics of the respondents.

A total of 417 post-partum women were participated in the study yielding a response rate of 98.8%. Accordingly, analysis was made based on 417 participants. The women's age range from 17 to 39 years, with a mean age of 24.86 (SD of ± 4.2) years respectively. Most of the respondents, 201 (48.2%) were between 25-34 years old. Majority of the respondents, 408 (97.8%) were married. Majority,379(91.9%) of the respondents claimed to have attended formal education. Regarding their religion, above half of the respondents 254 (60.9%) were protestant and out of the total respondents majority, 374(89.7%) were Oromo and concerning their occupation, 228 (54.7%) were housewives. Regarding their residence place majority, 396(95%) of the study participants were urban dwellers (Table 1).

Table 1. Socio demographic characteristics of women in postpartum period, in health Facilities of Nekemte town, Oromia regional state, Ethiopia, February 2017(n= 417).

Variables	Frequency	Percent
Mothers Age		
15 – 24	199	47.7
25 – 34	201	48.2
35 -44	17	4.1
Religion		
Protestant	254	60.9
Orthodox	105	25.2
Muslim	53	12.7
Catholic	5	1.2
Ethnic Groups		
Oromo	374	89.7
Amhara	34	8.2
Others*	9	2.2
Marital Status		
Married	408	97.8
Others**	9	2.2
Education Level		
No formal education	38	9.1

Primary education	105	25.2
Secondary education	125	30.0
College and above	149	35.7
Occupation		
House Wife	228	54.7
Merchant	25	6.0
Government employee	91	21.8
Self-employee	40	9.6
Student	33	7.9
Monthly income		
<500	72	17.3
500-1000	83	19.9
>=1000	262	62.8
Place of residence		
Urban	396	95.0
Rural	21	5.0

* Tigre, Gurage, **Never married, Widowed, Divorced

5.2. Obstetric factors and Health service utilization

Majority, 319 (76.5%) of the respondents had less than three live births and about, 398(95.4%) of participants have attended antenatal care (ANC) for their current pregnancy of which 192(46%) had ANC visit at government hospital, 178(42.7%) at health centers and the rest had ANC visit at private health facilities. Almost three fourth 300(75.4%) of the respondents have started ANC visit at less than or equal to 4 month of gestational age (Table 2).With regard to place of delivery, more than half, 229(54.9%) of mothers delivered at government hospital and others delivered at health center, private health facilities and home (figure 3).

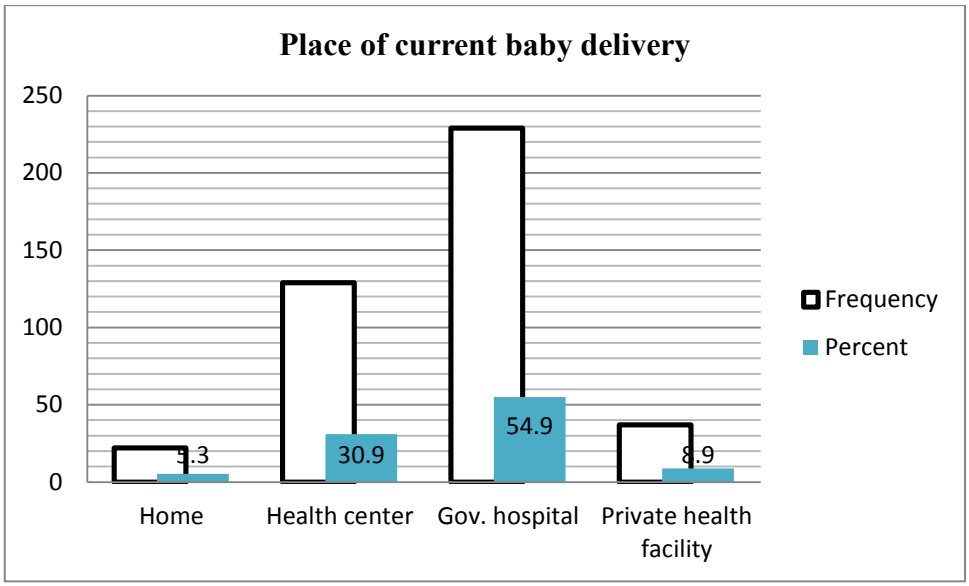

Figure 3. Place of delivery reported by women in postpartum period, in health facilities of Nekemte town, Oromia regional state, Ethiopia, February 2017

Table 2. Obstetrics factors and health service utilization of women in postpartum period, in health facilities of Nekemte town, Oromia regional state, Ethiopia, February 2017.

Variables	Frequency	Percent
Antenatal follow up		
Yes	398	95.4
No	19	4.6
Place of ANC visit		
Gov. Hospital	192	46.0
Health center	178	42.7
Private Health Facility	38	6.7
Gestational age at first visit(n= 398)		
Less than or equal to 4 month	300	75.4
Greater than 4 month	98	24.6
Place of current delivery		
Home	22	5.3
Health center	129	30.9
Gov. hospital	229	54.9
Private health facility	37	8.9

ANC= Antenatal care

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

About 107 (25.7%) of the respondents had visited by health extension worker in the last six weeks and Of which , 101(94.4%) of the respondents had been educated on early initiation of breast feeding and Above three-forth, 329(79.9%) of women have been advised on early initiation of breast feeding, by skilled birth attendants before and after birth (Table 3).

Table 3. Home visit by HEWs and advise given by skilled birth attendants of women in postpartum period, in health facilities of Nekemte town, Oromia regional state, Ethiopia, February 2017.

Variables	Frequency	Percent
Home visit by health extension worker (n = 417)		
Yes	107	25.7
No	310	74.3
Drying and wrapping (n= 107)		
Yes	88	82.2
No	19	17.8
Early initiation of breast feeding (n= 107)		
Yes	101	94.4
No	6	5.6
Danger sign (n= 107)		
Yes	83	77.6
No	24	22.4
Health education and advise by SBAs		
Early initiation of Breast feeding (n= 417)		
Yes	297	71.2
No	120	28.2
Delay bathing (n= 417)		
Yes	320	76.7

No	97	23.3
Cord care (n= 417)		
Yes	303	72.7
No	114	27.3

5.4 Identified level of Essential Newborn Care practices

In this study, early initiation of breast feeding , safe cord care and delayed bathing practices were studied for 417 recently delivered women and 317(76%), 320(76.7%) and 328(78.7%) of the respondents demonstrated the recommended practices, respectively(figure 4)

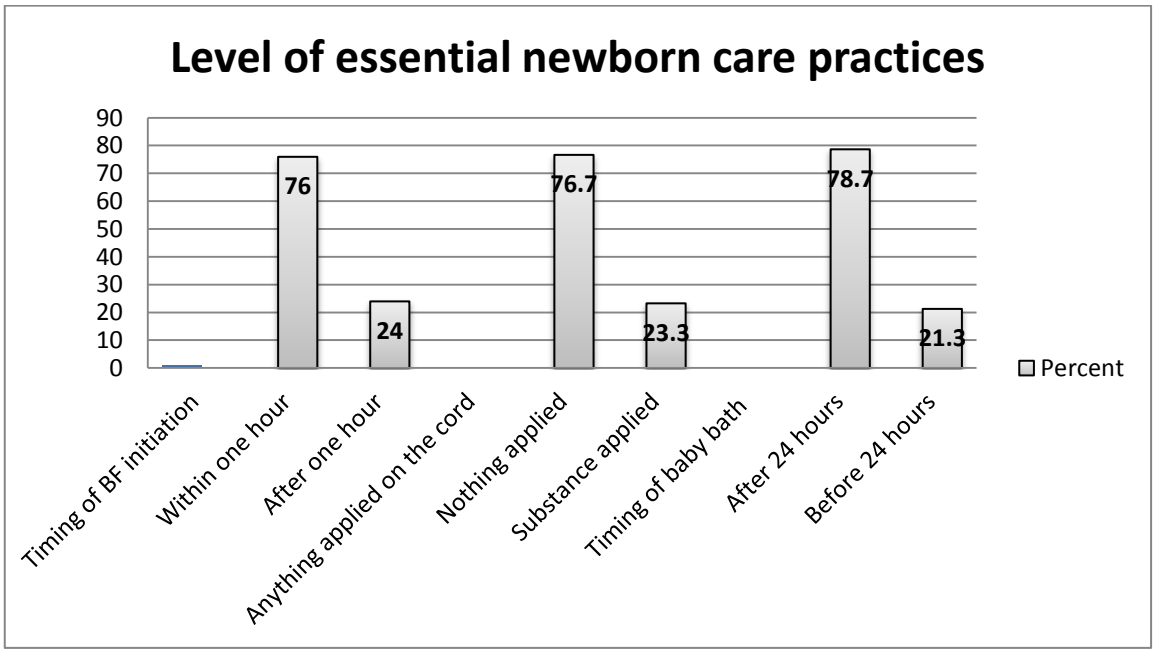

Figure 4. Identified level of essential newborn care practices among mothers in postpartum period, in health facilities of Nekemte town, Oromia regional state, Ethiopia, February 2017

5.5 Early initiation of breast feeding

About 51(12.2%) of the mothers were given additional feeding other than breast feeding with in the first month and among them 14(27.5%) formula milk and 33(64.7%) cow milk and 4(7.8%) honey were the item of additional feeding. A few, 60(14.4) of respondents had reported bottle feeding for their baby, of which 36(60%) of them reasoned out as their breast has no enough milk, 19(31.7%) were employees and have no time to breast feed and 5(8.3%) of them reported as they are too busy with home work

Table 4. Practice of women in postpartum period on timely initiation of breast feeding, in health facilities of Nekemte town, Oromia regional state, Ethiopia, February 2017.

Variables	Frequency	Percent
Initiation of first breast milk (colostrum) (n= 417)		
Yes	406	97.4
No	11	2.6
Time the first breast milk(colostrum) started(n= 417)		
Within one hour afterbirth	317	76
After one hour after birth	100	24
Which one is important for the first 6 month (n= 417)		
Breast milk	380	91.1
Additional foods	37	8.9
Did you give additional fluid? (n= 417)		
No	366	87.8
Yes	51	12.2
Additional fluid given for newborn (n= 51)		
Infant formula	14	27.5
Cow milk	33	64.7
Honey	4	7.8
Bottle feeding for current		

newborn (n= 417)		
No	357	85.6
Yes	60	14.4
Reason for bottle feeding(n= 60)		
My breast has no enough milk	36	60.0
I am employee	19	31.7
I am too busy with homework	5	8.3

5.6 Safe cord care

About 97(23.3%) of the respondents were reported as had applied anything on the cord, among these 81(83.5%) and 16(16.5%) of women had applied butter and Vaseline respectively. Most of the respondents 325(77.9%) have reported to go health center for cord infection and 79(18.9%) of women as have to give home medication, while 65(15.6%) of them reported as they have to wait until it heals by itself. About 114 (27.3%) of women took care of cord bleeding while 313(75.1%) of women kept the cord dry and clean to keep the cord safe and clean (Table 5).

Table 5. Practice of cord care of women in postpartum period, in health facilities of Nekemte town, Oromia regional state, Ethiopia, February 2017.

Variables	**Frequency**	**Percent**
Apply something on the cord (n= 417)		
No	320	76.6
Yes	97	23.3
What did you apply (n=97)		
Vaseline	16	16.5
Butter	81	83.5
What do you do if cord bleeds or Have foul smelling discharge?		
Go to health center(n= 417)		
Yes	325	77.9
No	92	22.1

Home medication (n= 417)		
No	338	81.1
Yes	79	18.9
Wait until heal by it self (n= 417)		
Yes	65	15.6
No	352	84.4
What do you do to keep the cord clean and safe (n= 417)		
Take care of bleeding		
Yes	114	27.3
No	303	72.7
Keeping it dry and clean (n= 417)		
Yes	313	75.1
No	104	24.9
Take to health facility for treatment (n= 417)		
Yes	74	17.7
No	343	82.3

5.7 Thermal care/delay bathing

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 third-fourth 328(78.7%) of the respondents were bathed their newborn baby after24 hours after birth and one fourth, 89 (21.3%) of them had given bath within 24 hour (Figure 5).

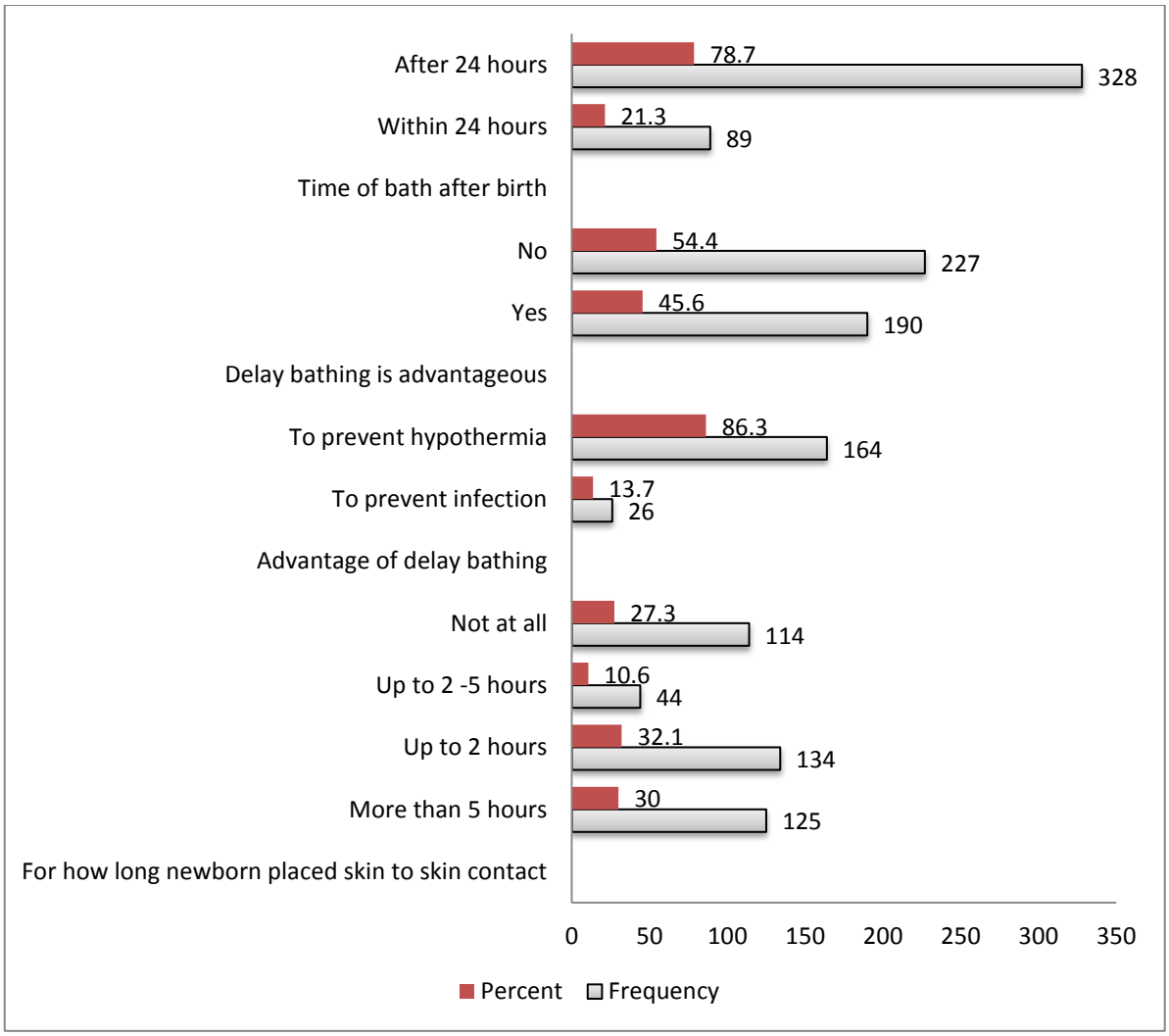

Figure 5. Illustrates distribution of delay bathing and thermal care of mothers in postpartum period, to neonates in health facilities of Nekemte town, Oromia regional state, Ethiopia, February 2017

5.8 Knowledge of respondents on newborn danger signs

Out of the total 417 respondents, more than half, 237 (56.8%) of them stated that they had the information about newborn danger signs. Figure 6 shows that the only newborn danger sign for which there was high awareness among mothers was poor sucking, 190 (80.2%) followed by fever, 183(77.2%) (Figure 6).

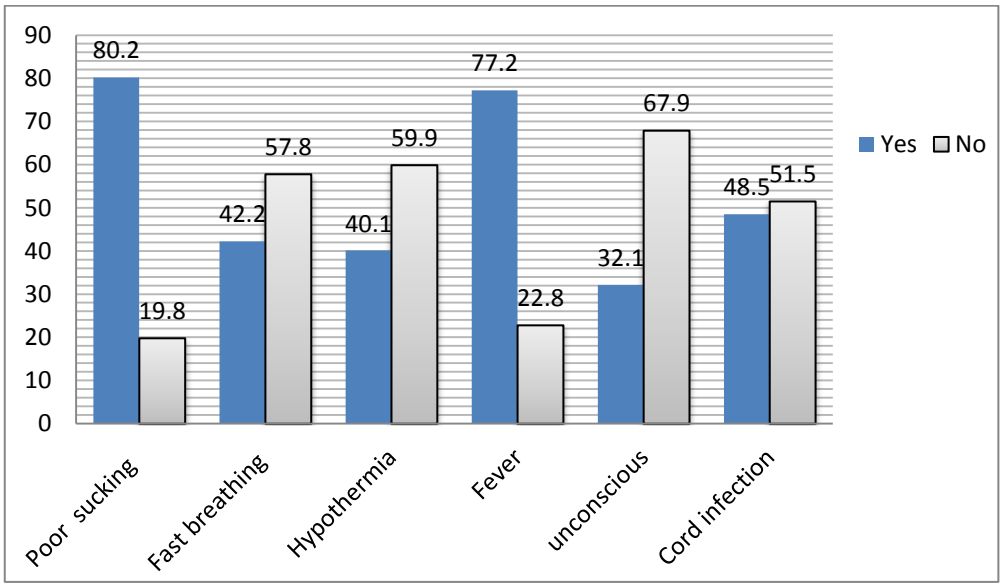

Figure 6. Identified newborn danger sign by mothers in postpartum period, in health facilities of Nekemte town, Oromia regional state, Ethiopia, February 2017.

In general, mothers' knowledge of newborn danger signs was low, with only 34.3% of respondents were knowledgeable (able to name or identify 4 or more danger signs out of 6 listed danger signs) as indicated in Figure 7

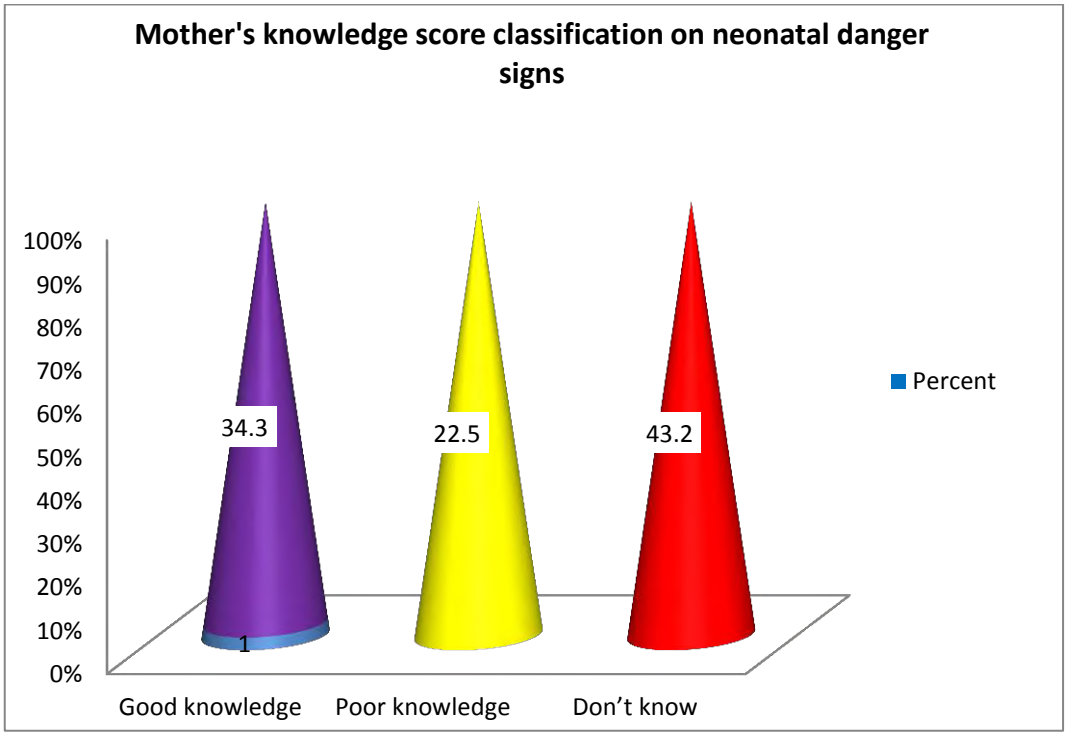

Figure 7. Knowledge status of mothers in postpartum period on neonatal danger signs, in health facilities of Nekemte town, Oromia regional state, Ethiopia, February 2017.

5.9 **Knowledge of respondents on newborn care practice**

There were about six knowledge related questions used to assess knowledge status of mothers toward essential newborn care practice. Correctly answered half of those questions were used to classify the respondents as they have good or poor knowledge and accordingly majority, 79.2% of them have good knowledge (figure 8).

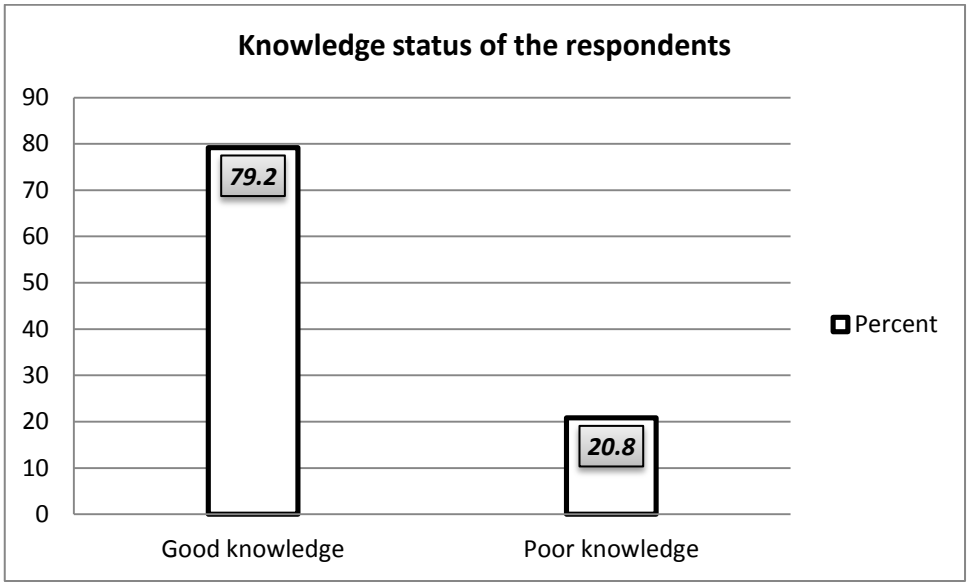

Figure 8. Knowledge status of mothers in postpartum period on essential newborn care practice, in health facilities of Nekemte town, Oromia regional state, Ethiopia, February 2017.

Table 6. Knowledge status of mothers on essential newborn care in health facilities of Nekemte town, Oromia regional state, Ethiopia, February 2017(n= 417).

Variables	Frequency	Percent
Do you know newborn care		
Yes	316	75.8
No	101	24.2
Substance to be applied to the cord		
Nothing	285	68.3
Butter	87	20.9
Vaseline	12	2.9
Don't know	33	7.9
How should umbilical cord be handled		
With dressing/cover	246	59.0
Without dressing	102	24.5
Don't know	69	16.5
How long after birth should the newborn be washed		
Within 1 hr	3	0.7
2-24 hours	53	12.7
After 24 hrs	343	82.3
Don't know	18	4.3
How long after birth the newborn should be breast fed		
1 hour after birth	52	12.5
24 hours after birth	4	1.0
48 hours after birth	4	1.0
Within 1 hour	347	83.2
Don't know	10	2.4
What should a mother feed her newborn baby first		

Fresh butter	7	1.7
Breast milk/colostrum	408	97.8
Do not know	2	0.5

The proportion of essential new born care practices: Only 195(47%) of the respondents practices the three composite practices namely; early breast feeding initiation, safe cord care and thermal care(delay bathing) which is lower than each individual practices that is, early initiation of breast feeding 317(76%), safe cord care, 320(76.7%) and delayed bathing, 328(78.7%)(Figure 9).

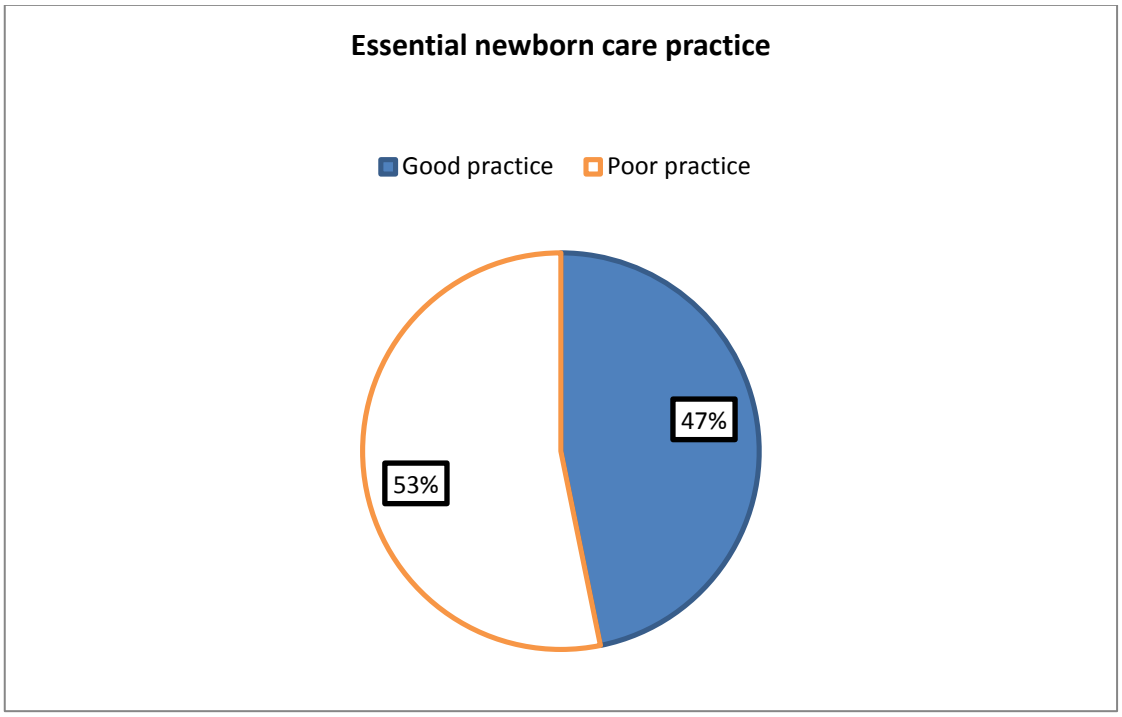

Figure 9. Over all essential newborn care practice among mothers in postpartum period, in health facilities of Nekemte town, Oromia regional state, Ethiopia, February 2017.

5.10. Factors associated with essential newborn care practices

Both the simple and multiple logistic regression methods were used in the analysis of predictors of the dependent variables. Since the three outcome variables had binary outcomes, binary logistic regression models were used. The simple logistic regression analysis was carried out to examine the associations between each of the independent variables and the three 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 showed association with outcome variables at **p<0.05** in the bivariable analysis such as number of live births, Bottle feeding, educational status, occupation, place of residence, ANC follow up, number of ANC visit, Skilled birth attendant's advice (SBAs) and home visit by health extension workers, were selected as candidate variables for multivariable logistic regression analysis.

The multivariable logistic regression analysis was used by taking all these factors into account simultaneously and only three of them remained to be significantly and independently associated with the outcome variables. Those three variables include; number of live births, counselling about essential newborn care practices by skilled birth attendants and home visit by health extension workers. In multiple regressions, association of the independent variables with each of the three dependent variables were tested separately, while controlling for the confounding aspects of the other independent variables.

Number of live birth was found to have statistically significant association with practice of early breast feeding initiation of mothers. Those mothers who had one to two live births 0.30 times less likely to practice early breast feeding initiation as compared with those women who had 5 and more live births with [AOR=0.30, 95% CI = (0.13, 0.73)]. Skilled birth attendant's advice on safe cord care was found to have statistically significant association with safe cord care practice of mothers. Those women who were counselled on safe cord care by SBAs 2.39 times more likely to practice safe cord care as compared with those women who were uncounselled with [AOR=2.39, 95% CI = (1.44, 3.98)]. Health extension workers home visit was found to have statistically significant association with thermal care practice of the mother. Those women who had HEW home visit 1.79 times more likely to delay newborn bath until 24 hour after birth as compared with those women who had not visited with [AOR=1.79, 95% CI = (1.08, 2.99)](Table 7).

Table 7. Association between selected factors and essential newborn care practices of women in postpartum period, in health facilities of Nekemte town, Oromia regional state, Ethiopia, February 2017.

Variables	Safe cord care practice		COR(95%CI)	AOR(95%CI)	P-value
	Yes	No			
Educational status					
No formal education	24(7.5%)	14(14.4%)	1.00	1.00	
Primary education	73(22.8%)	32(33%)	1.33(0.61, 2.90)	0.90(0.38, 2.14)	0.80
Secondary	94(29.4%)	31(32%)	1.77(0.82, 3.84)	1.15(0.47, 2.79)	0.76
education	129(40.3%)	20(20.6%)	3.76(1.67, 8.46)	1.87(0.67, 5.25)	0.23
College and above					
Occupation					
House wife	165(51.6%)	63(64.9%)	1.00	1.00	
Merchant	18(5.6%)	7(7.2%)	0.98(0.39, 2.46)	1.07(0.41, 2.79)	0.89
Gov. employee	81(25.3%)	10(10.3%)	3.09(1.51, 6.34)	1.58(0.62, 4.00)	0.34
Self-employed	32(10%)	8(8.2%)	1.53(0.67, 3.49)	1.140(.48, 2.69)	0.77
Student	24(7.5%)	9(9.3%)	1.02(0.45, 6.43)	0.91(0.38, 2.18)	0.83
Place of residence					
Urban	308(96.2%)	88(90.7%)	2.63(1.07, 6.43)	1.60(0.57, 4.48)	0.37
Rural	12(3.8%)	9(9.3%)	1.00	1.00	
ANC follow up					
Yes	310(96.9%)	88(90.7%)	3.17(1.25, 8.05)	1.81(0.65, 5.03)	0.26
No	10(3.1%)	9(9.3%)	1.00	1.00	
SBAs advice on cord care practice					
Yes	249(77.8%)	54(55.7%)	2.79(1.73, 4.51)	**2.39(1.44, 3.98)***	**0.001**
No	71(22.2%)	43(44.3%)	1.00	1.00	

SBA= Skilled birth attendants

Variables	Delay bathing/thermal care practice		COR(95%CI)	AOR(95%CI)	P-value
	Yes	No			
Educational status					
No formal education	25(7.6%)	13(14.6%)	3.49(1.64, 3.65)	1.98(0.89, 4.35)	0.09
Primary education	80(24.6%)	25(28.1%)	1.21(0.65, 2.25)	1.277(0.69, 2.35)	0.43
Secondary education	103(31.4%)	22(24.7%)	0.87(0.47, 1.63)	0.89(0.48, 1.65)	0.72
College & above	120(36.6%)	29(32.6%)	1.00	1.00	
HEW home visit					
Yes	75(22.9%)	32(36%)	1.89(1.14, 3.13)	**1.79(1.08, 2.99)***	**0.024**
No	253(77.1%)	57(64%)	1.00	1.00	

HEW= Health extension worker

Variables	Timely initiation of breast feeding		COR(95%CI)	AOR(95%CI)	P-value
	Yes	No			
Number of live births					
1-2	249(78.5%)	70 (70%)	0.33(0.14, 0.77)	0.**30(0.13, 0.73)***	**0.008**
3-4	55(17.4%)	19 (19%)	0.41(0.16, 1.06)	0.38(0.14, 1.02)	0.054
>=5	13(4.1%)	11(11%)	1.00	1.00	
Number of ANC visit					
One times	3(1.0%)	4(4.2%)	4.79(1.04, 22.00)	5.09(1.00, 23.48)	0.37
Two times	26(8.6%)	11(11.6%)	1.52(0.71, 3.26)	1.38(0.63, 3.00)	0.42
Three times	62(20.5%)	21(21.1%)	1.22(0.69, 2.16)	1.09(0.60, 1.96)	0.78
Four and above	212(70%)	59(62.1%)	1.00	1.00	

Where * significant at p**<0.05, COR=** Crude odd ratio, **AOR=** Adjusted odd ratio

6. DISCUSSION

Over all, the level of comprehensive essential newborn care practice of mothers is considerably low as their practice on the three composite variables in combination is not satisfactory and is contrary to the WHO recommendation. The current study identified factors such as number of live birth, home visit by health extension workers and skilled birth attendant's advice about essential newborn care during and after pregnancy as independent predictors of essential newborn care practices.

The present study found that 76.7% of the women practice safe cord care, by keeping it clean and dry, this result is higher than study done in Nepal(60%), (21), the study done in Cameroon(11%), (9), the study done in Bangladesh(42.8%), (16), and the survey conducted in four regions of Ethiopia(65.2%), (10). The possible reason for the variation might be due to the expanding health services coverage and increased awareness and information and maternal health services. This study finding is lower than study conducted in Chitwan district(95%), (23), and study done in East Gojjam(94.6%), (11). This may be due to study setting, multi-cultural variation among countries and regions.

The current study finding reported that about 23.3% of the women have applied different traditional substances on the cord such as butter and Vaseline. This result is lower than study conducted in Uganda, (8) in which half of the respondents applied traditional substances on the cord stump, Nepal(40%), (21), Bangladesh(43.8%), (16), Cameroon(54.2%), (9) and the study done in India(55%), (18). This is may be due to relatively an increased awareness about harmful effect of traditional substance application to the cord or study setting and methodological difference. However, this study finding is higher than study done in Chitwan(5%), (23), the survey conducted in four regions of Ethiopia(16.9%), (10) and the study done in East Gojjam(5.4%), (11). 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.

The level of timely initiation of breast feeding observed in the study area was 76.%.This is higher than finding of EDHS(52%), (12), study done in Uganda (8) , study done in Cameroon(44.3%), (9), study done in Chitwan district(24.3%), (23), the survey conducted in four regions of Ethiopia(52.1%), (10) and study conducted in East Gojjam(41.6%), (11). The finding of this study was found to be higher than national prevalence and other research areas reports. 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 Nepal(90%), (21). This is may be due to an awareness difference on the advantage of exclusive and early initiation of breast feeding and consistent finding was documented in a study conducted in Indian(74%), (17).This study showed that 97.4% of mothers had given colostrum. This could be due to media exposure as most of the respondents were from urban, information and high percentage of institutional delivery. Women gave additional fluid for their current newborn in this study was 12.23% which was lower than the national EDHS(27%), (12). This is may be due increased information on harmful effect of prelacteal feeding and on importance of exclusive breast feeding.

Bathing of the new born after 24 hours practiced by mothers in the study area was only 78.7%. This finding is higher than study done in Nepal(60%), study done in Uganda, study done in Cameroon(70.3%), the study done in Indian(64%), the survey conducted in 4 regions of Ethiopia(25.3%), and the study done in East Gojjam(34.4%), (8-11, 17, 21). The discrepancy is may be due to awareness about the importance of delayed bathing to prevent hypothermia and to ensure optimum thermal care practice. The finding of the study was found to be lower than the study done in Chitwan district(96.7%), (23). This is may be because of relatively lack of proper advice before, during and after birth about the importance of delayed bathing.

In the present study those women who were visited by HEWs more likely to practice baby bath at recommended time as compared with those women who do not visited. Consistent finding was documented in a study done in Nepal in which female Community Health Volunteers was one of predictors(30).This might be related to the fact that women visited by HEWs may have better understanding about the ENBC practices.

Skilled birth attendants counselling has been accepted as key factor influencing the healthy outcome of pregnancy and child survival(30, 31). The finding of this study revealed that advice about ENBC practices was showed statistically significant association with ENBC practice of women. The likely hood of practicing safe cord care was high among women who had got advice than those women who had not got advice during and after pregnancy. This may be due to an ongoing education and counselling during antenatal care visit, delivery and postnatal care.

Although study done in Bangladesh, Goba Woreda, Nepal, and East Gojjam, reported that educational status of the mother were significantly associated with essential newborn care practice(8, 11, 14, 25), it did not predict any of essential newborn care practice assessed in this study. The possible reason is may be increased information on newborn care and health service utilization among all mothers. With regard to health service utilization, place of delivery and postnatal care were positively associated with essential newborn care practice in some of the previous study reports. For instance, a study done in Nepal and Goba Woreda reported that health facility delivery was positively associated with early breast feeding initiation(14, 25) and another study conducted in Pakistan reported as home delivery was negatively associated with safe cord care(32). However, place of delivery did not predict any of essential newborn care practice in the present study. This difference is may be due to majority of mothers delivered at health facility in this study.

A study done in east Gojjam reported that postnatal care was positively associated with essential newborn care practices(11) where as in the present study, there is no statistically significant association between postnatal care and with any of essential newborn care practices. The discrepancy might be due to the sociodemographic characteristics of the participants.

Mother's knowledge on neonatal danger signs did not association with any one of essential newborn care practices in this study. However, study done in Chitwan, in Ghana and Mandura district, Metekel zone reported that there was statistically significant association between mother's knowledge on neonatal danger signs and essential newborn care practices(17, 19, 23). This is probably due to awareness difference on the harm of neonatal danger signs on newborn babies among mothers.

STRENGTH AND LIMITATION OF THE STUDY

STRENGTH

The study included mothers who delivered in the last 6 months preceding data collection period to reduce recall bias for that of practice related questions. The study also covers wide area of essential newborn care components which are basically practiced by mothers at home such as: early initiation of breast feeding, safe cord care and thermal care/ delay bath of newborn babies until 24 hours of life. Even though it is facility based study, the study finding can be generalized to the target population due to the fact that currently, almost all mothers who have less than one year child attend immunization service for their infant.

LIMITATION

There were some limitations to this study. The study did not provide the qualitative perspectives on essential newborn care practice and its predictors, which, if available, could have made the study more complete and relevant. The qualitative findings would have also helped to illuminate the quantitative results. Since it is cross sectional study it did not addressed the cause and effect relationship of the factors and the outcome variables. In addition this study is at a risk of social desirability bias as mothers may not report what they really practiced.

7. CONCLUSION AND RECOMMENDATIONS

Conclusion

The present study indicated that the level of comprehensive essential newborn care practice is unsatisfactory even though majority of the respondents practice individual variables (timely breast feeding initiation, safe cord care and delay bath of newborn baby until 24 hours of life). Number of live births was found to be independent predictor of early breast feeding initiation, home visit by health extension workers was found to be independent predictor of delay bathing until 24 hour of life and skilled birth attendant's advice before and during delivery about safe cord care was found to be independent predictor of safe cord care practice in the study area.

Recommendations

Based on the finding of the study the following recommendations were forwarded:

Health care planners: To strengthen the current intervention programs on newborn care and improve its quality & effectiveness through regular evaluation and monitoring of the program.

Health workers: To provide an ongoing education and counselling 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 their postpartum period in order to provide appropriate information regarding newborn feeding method, newborn cord care until umbilical stump falls off, well wrapping of the baby's head with dry cloth and to postpone baby bath until 24 hours of life, neonatal danger signs and so on.

Future researcher: Newborn care is relatively crucial research topic and is of government concern in order to substantially decrease morbidity and mortality of newborn and to achieve sustainable development goal by 2030. Therefore, it is suggested that for the future researchers to undertake a repeatable studies in different part of the country in order to identify nationally representative information. As the study lacks Qualitative information that can underpin the quantitative study results, hence it is suggested that qualitative studies to be conducted to fill the gap of this study design.

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ANNEX I: ENGLISH VERSION QUESTIONNAIRE

SEMISTRUCTURED QUESTIONNAIRE AND CONSENT FORM ENGLISH VERSION

ADDIS ABABA UNIVERSITY

COLLEGE OF ALLIED HEALTH SCIENCES

NURSING AND MIDWIFERY DEPARTEMENT

Information sheet

Introduction

Greeting!

My name is----------I am working as data collector for the study being conducted in this hospital by **Mr. Bizuneh Wakuma** who is studying for his master's degree at Addis Ababa University Medical faculty school of allied health science department of nursing and midwifery postgraduate study. I kindly request you to lend me your attention to explain you about the study and how you have been selected as study participant.

Study title– Essential newborn care practice and associated factors among mothers in public health institutions of in Nekemte town

Purpose-- To assess essential newborn care practice and its associated factors among mothers who gave birth in the last six months in governmental health institution of Nekemte town, east Wollega zone, Oromia, Ethiopia, 2017.

Procedure and duration: First of all we selected you to take part in this study randomly. There are 40 questions to answer. By interviewing you, the questioner will be filled. The interview will take around 30 - 35 minutes.

Risks: The risks of being participating in this study are very minimal, only taking your few minutes.

Benefit: At this moment you may not get any direct benefit by being involved in this study but the information you provide is very important to solve problems on new-born care issue.

Confidentiality: The information that you provide us will be confidential. The questioner will be coded to exclude showing your name on questioner and consent form.

Rights: Participation in this study is fully voluntary. You have the right to declare not to participate in this study and you have the right to with draw from participating at any time

Contact address: If there is any questions or unclear idea any time about the study or the procedures, do not hesitate to contact and speak to Principal investigator With Cell phone number: **0920963650** or e-mail address **buzuna2014@gmail.com.**

Consent form

I have read this form or it has been read to me in the language I comprehend and understand all condition stated above.

Are you willing to participate in this study?

a. **Yes** (continue to interview) b. **No** (stop)

Signature of data collector _____ Date _____

Name of health facility _____

Part I: Socio economic and demographic characteristics

Q	Question	Answers and codes	Go to
101	How old are you?	_____ In Years	
102	What is your religion?	1. Protestant 2. Orthodox 3. Muslim 4. Catholic 5. Others(specify)_____	
103	To which ethnic group do you belong?	1. Oromo 2. Amhara 3. Tigre 4. Gurage 5. Others(specify)_____	
104	What is your marital status?	1. Never married 2. Married 3. Divorced 4. Widowed 5. Others(Specify)_____	
105	What is your educational level?	1. No formal education 2. Primary 3. Secondary 4. College and above	
106	What is your occupation?	1. House wife 2. Merchant 3. Government employee 4. Self-Employee 5. Student 6. Others(specify)_____	
107	How much is your monthly income? in ETB	_____	
108	Place of residence	1. Urban 2. Rural	

Part II: health care service utilization and obstetric information

Q	Question	Response and Code	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	What was your age at first Delivery?	---------- in year	
206	Have you been on ANC follow up when you were pregnant for your current baby?	1. Yes 2. No	If **no** go to **210**

207	If eyes, how many times?	_____		
208	Where did you receive ante natal visit while you were pregnant for this baby?	1. Government Hospital 2. Health center 3. Pvt. Hospital 4. Others(specify)_____		
209	At what gestational age was your first visit?	_____months		
210	During your antenatal visit or delivery at health institution, did the health Professional informed about the following points at least once?			
	Counselling topics	**Yes**	**No**	
	1.Breast feeding immediately after birth within an hour	1	2	
	2.Care of newborn, particularly cleanliness, avoiding chilling	1	2	
	3.Delay bathing of newborn for 24 hour	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	
211	Where was your place of current delivery	1. Home 2. Health center 3. Government Hospital 4. Private Hospital 5. Others(specify)_____		If not 1 skip to **213**
212	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 _____		

213	At which day did you return back to health institution for Postnatal check-up?	_____ in days	

Part III: Assessing the practice on initiation of breast feeding.

Q	Question	Response and code	Go to
301	Are you currently feed breast exclusively?	1. Yes 2. No	
302	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 **304**
303	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	
304	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	
305	Did you give additional food for your current baby?	1. Yes 2. No 3. I don't Know	For **2/3** skip to **307**
306	What additional food did you give for your current baby after birth?	1. Water 2. Honey 3. Cow milk 4. Infant formula 5. Butter 6. Others(specify) _____	
307	Did you use bottle feeding for your baby?	1. Yes 2. No	If **2**, skip to **401**
308	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

Q	Question	Response and code	Go to
401	Did you apply anything on the cord of your baby?	1. Yes 2. No 3. I Don't Know	If **2 or3** go to **403**
402	What did you apply?	1. Butter 2. Vaseline 3. Ointment/oil 4. Others(specify)_____	
403	What do you do if the baby cord bleeds or have unpleasant discharge? 1.Go to health centre 2.Home medication 3.Wait until heal by itself 4.Others(specify)____	**Yes** **No** 1 2 1 2 1 2 _____4	
404	What do you do to keep the cord clean and safe? I take care of bleeding I keep it dry and clean I take to health facility for Treatment Nothing Others(specify)_____	Yes No 1 2 1 2 ----------3 ----------4 ----------5	

Part V: Assessing practice of the thermal care of the neonate

Q	Question	Response and code	Go to
501	When did you give bath for the baby after birth?	1. Within 1 hour 2. Within 24 hour 3. After 24 hour 4. Don't know	
502	Do you think delay bathing is advantageous for the baby?	1. Yes 2. No 3. Don't know	If **2/3** skip to **504**
503	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)_____	
504	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 2hours total) 3. Moderate amount (between 2 to 5hours total) 4. More than5 hour 5. Always	

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

Q	Question	Response and code	Go to
601	Do you know about care of the mother to her newborn baby?	1. Yes 2. No	
602	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)_____	
603	How should the umbilical cord be handled after cut?	1. With dressing/cover 2. Without dressing 3. Don't know 4. Other(Specify)_____	
604	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	
605	How long after birth the newborn should be breast fed?	1. 1 hour after birth 2. 24 hours after birth 3. 48 hours after birth 4. Within one hour	
606	What should a mother feed her new born baby first?	1. Sugar water 2. Fresh butter 3. Breast milk / colostrum 4. Plain water 5. Milk (other than breast milk) 6. Don't know 7. Other (Specify)_____	
607	Do you know about newborn danger sign?	1. Yes 2. No	
608	If yes, could you mention all the danger sign you know (**Multiple**	1. Poor sucking or not able feed breast	

	answers are possible)	2. Fast breathing 3. Hypothermia 4. Fever 5. Drowsy or unconscious 6. Cord bleeding and infection	
	Thank the mother for her time and end the interview	**End of the interview**	

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Thank you!!

ANNEXII: AFAN OROMO VERSION QUESTIONNARE

Gaafilee odeeffannoo waa'ee Gochaa kunuunsa daa'imman dhalattuuf haadholiin godhanii fi waantoota dhiibbaa geessisan irratti odeeffannoo sassaabuuf qophaa'e.

Waraqaa odeeffannoo

Seensa: akkam jirtu? ani maqaan koo Obboo/Aaddee_____ kanan jedhamu odeeffannoo qorannoo waa'ee gocha kunuunsa daa'imman dhalattuuf haadholiin godhanii fi waantoota dhiibbaa geessisan irratti **Obboo Buzunaa Waaqumaatiin** Yuunibarsiitii Finfinneetti muummee barnoota Narsiingii fi miidwayifariitti gaggeeffamaa jiru irratti odeeffannoo isin irraa funaanuufi.

Mata-duree qorannichaa – Gochaa kunuunsa daa'imman dhalattuuf haadholiin godhanii fi waantoota dhiibbaa geessisan.

Kaayyoo qorannichaa –kaayyoon qorannnoo kanaa gochaa kunuunsa daa'imman dhalattuuf haadholiin godhanii fi waantoota dhiibbaa geessisan qorachuudha.

Adeemsa qorannichaa fi yeroo inni fudhatu – Hirmaattuu qorannoo kanaa kan taate, carraatiin filatamteeti. Gaaffileen qorannoo kanaaf qophaa'an 40 yoo ta'an yeroon inni fudhachuu danda'u immoo daqiiqaa 30-35 kan hin caalleedha.

Miidhaa qorannichi geessisuu danda'u – Qorannoo kana keessatti hirmaachuu keen walqabatee yeroo kee muraasa fudhachuu irraan kan hafe, miidhaan inni sirraan gahu tokko illee hin jiru.

Faayidaa qorannichaa – Qorannoo kana irratti hirmaachuu keetin faayidaan kallatti ati argattu hin jiru, garuu odeeffannoon ati nuuf laattu rakkoolee daa'imman dhalattuu mudachuu danda'an ittisuuf gargaara.

Iccittii – Icciitiin odeeffannoo ati nuuf laattuu eegamaadha akkasumas waraqaa gaaffii irrattis ta'ee unka walii galtee irratti maqaan kee hin katabamu.

Mirga – Qorannicha irratti hirmaachuu fi dhiisuun guutummaatti fedhii kee irratti kan hundaa'eedha akkasumas mirgi qorannicha irratti hirmaachuu dhiisuu yookin yeroo barbaadetti addaan kutuu danda'uu kee eegamaadha. Haa ta'u malee hirmaannaan kee fiixan bayii'nsa qorannoo kanaatif daran murteessaadha.

Qunnamtii – Adeemsa fi waa'ee qorannichaa irratti gaaffii yoo qabaattan abbaa qorannoo kanaa kan ta'e **Obboo Buzunaa Waaqumaa** karaa lakkofsa bilbilaa: **+251920963650** yookiin e-Mail buzuna2014@gmail.com Kanaan argachuu ni dandeessuu.

Unka Walii galtee

Wantoota armaan olitti ibsaman kana dubbisee yookin Afaan ani hubachuu danda'uun naaf dubbifamee jira.

Qarannoo kana irratti hirmaachuuf fedhii qabdaa?

a) Eeyyee (itti fufi) b) Lakki(irra darbi)

Mallattoo nama odeeffannoo funaanee_____ guyyaa_____

Maqaa dhaabbata fayyaa _____

Kutaa I: Odeeffannoo haala hawaasummaa fi dinagdee ilaalchisee.

Q	Gaaffilee	Deebii fi koodii	Irra darbi
101	Umriin	_____ waggaadhan	
102	Amantaa	1. Pirotestaantii 2. Ortodoksii 3. Musliima 4. Kaatolikii 5. Kan biroo(ibsi)_____	
103	Sabummaa	1. Oromoo 2. Amaara 3. Tigree 4. Guraage 5. Kan biroo(ibsi)_____	
104	Haala fudhaa fi heerummaa ilaalchisee	1. Hin heerumne 2. Heerume 3. Wal hiikne 4. Narraa du'e 5. Kan biroo(ibsi)_____	
105	Sadarkaa barnootaa	1. Barnoota idilee kan hin qabne 2. Barnoota sadarkaa 1ffaa 3. Barnoota sadarkaa 2ffaa 4. Dippiloomaa fi isaa ol _____	
106	Hojiin kee maali?	1. Haadha manaa 2. Daldaalttuu 3. Hojjattuu mootummaa 4. Hojii dhuunfaa 5. Barattuu 6. Kan biroo(ibsi)_____	
107	Galiin dimshaashaa maatii kee ji'aatti meeqa?	Qarshii _____	
108	Bakka jireenyaa	1. Magaalaa 2. Baadiyyaa	

Kutaa II: Odeeffanoo waa'ee ulfaa, da'uumsaa fi itti fayyadamiinsa tajaajila fayyaa ilaalchisee

Q	Gaaffilee	Deebii fi koodii	Irra darbi
201	Torbee ja'an darban keessa, hojjattootni ekisteenshinii fayyaa mana kee daawwatanii beekuu?	1. Eeyyee 2. Lakkii	
202	Qaphxiilee armaan gadii keessaa, is kamfaarratti waa'ee kunuunsa daa'immanii da'uumsa duraa fi booda kennamu gorsa siif laatan?	**Eeyyee Lakki**	
	1. Daa'imman qabuun dura harka bishaanii fi saamunaatiin dhiqachuu.	1 2	
	2. Daa'imman reefu dhalatan dafanii qoorsuu fi huccuu itti uffisuu	1 2	
	3. Daa'imman akkuma dhalataniin yeroo hanga sa'aatii tokkoo keessatti harma hoosisuu jalqabuu	1 2	
	4.Mallattoolee hamoo tajaajila fayyaa ariifachiisaa barbaadan	1 2	
	5.Talaallii daa'immanii	1 2	
	6. Akkaataa Kunuunsi daa'imman ulfaatina gad aanaa qabaniif itti godhamuu	1 2	
203	kanaan dura da'imi lubbuun dhalate si harkaa bahe jiraa?)	1. Eeyyee 2. Lakki	
204	Ijoolee meeqa qabdaa? (kan lubbuun jiran)	_____	

205	Yeroo da'uumsa kee isa jalqabaatti umriin kee meeqa ture?	Waggaa ----------	
206	Yeroo ulfa mucaa kee isa ammaa kana hordoffii da'uumsa duraa(ANC) qabda turtee?	1. Eeyyee 2. Lakki	Yoo **2-210tti** darbi
207	Yoo eeyyee jette, yeroo meeqa ilaalamte	_____	
208	Yoo eeyyee jette, eessatti hordofamaa turte?	1. Hospitaala mootummaa 2. Buufata fayyaa 3. Hospitaala dhuunfaa 4. Kan biroo (ibsi) _____	
209	Ji'a meeqaffaa keetti hordoffii da'uumsa duraa(ANC) eegalte?	Ji'a _____	

210	Dhaabbata fayyaa keessatti yeroo hordoffii ulfaas ta'ee yeroo da'uumsa keetti, Ogeessotni fayyaa waa'ee qaphxiilee armaan gaditti tarreeffamanii yoo xiqqaate si'a tokkoof illee sitti himanii beekuu?		
	Mata-dureewwan irratti gorfamuu malan	Eeyyee	Lakki
	1.Daa'imman akkuma dhalataniin yeroo hanga sa'aatii tokkoo keessatti harma hoosisuu jalqabuu	1	2
	2.Kunuunsa daa'imman reefu dhalatanii keessattuu qulqullinaan qabuu fi qorrinsa qaamaa hambisuu	1	2
	3.Daa'ima reefu dhalatan hanga sa'aatii 24 guutanitti qaama dhiquu dhiisuu	1	2
	4. Handhuura qulqullinaan qabuu fi balaa irraa ittisuu	1	2
	5.Talaallii	1	2
	6.Akkaataa Kunuunsi daa'imman ulfaatina gad aanaa qabaniif itti godhamuu	1	2
211	Mucaa kee isa ammaa kana eessatti deesse?	1. Mana 2. Buufata fayyaa 3. Hospitaala mootummaa 4. Hospitaala dhuunfaa	

		Kan biroo(ibsi)	
212	Yoo deebiin kee gaaffii **211** mana jettee, maalif?	1. Manni yaalaa nutti dhiyoon hin jiru 2. Geejibni hin jiru 3. Ciniinsuu tasaa ture 4. Maallaqni hin jiru 5. Hiriyaan/abbaan manaa na gargaaru hin jiru 6. Mana yaalaa deemuu hin feene 7. Kan biroo(ibsi)___	
213	Deessee guyyaa meeqaffaatti ogeessan ilaalamuuf gara dhaabbata fayyaa deemte?	_____ guyyaan	

Kutaa III: Gochaa haadholiin da'uumsa booda dafanii harma hoosisuu jalqabuu irratti qaban

Q	Gaaffilee	Deebii fi koodii	Irra darbi
301	Yeroo ammaa kana mucaa kee harma duuwwaa (qofaa) hoosisaa jirtaa?	1. Eeyyee 2. Lakki	
302	Aannan harmaa isa jalqabaa(silga) mucaa keef kenniteettaa?	1. Eeyyee 2. Lakki 3. Hin beeku	Yoo **2/3-304tti** darbi
303	Aannan harmaa isa jalqabaa(silga) mucaa keef yeroo kam kenniteef?	1. Da'uumsa booda sa'aatii 1 keessatti 2. Sa'aatii 24 keessatti 3. Sa'aatii 24'n booda 4. Hin beeku	
304	Gosa nyaataa kamtu daa'imman ji'oota ja'an jalqabaa keessa jiraniif baay'ee barbaachisa jettee yaadda?	1. Aannan harma haadhaa 2. Nyaata dabalataa 3. Hin beeku	
305	Da'umsa booda harma kee malee nyaata biroo mucaa keef kennitteettaa?	1. Eeyyee 2. Lakki 3. Hin beeku	Yoo **2/3-307tti** darbi

306	Nyaatni biroo ati mucaa kee kanaaf kennite kun maali?	1. Bishaan 2. Damma 3. Aannan sa'aa 4. Foormulaa aannan daa'immanii 5. Dhadhaa 6. Kan biroo(ibsi)_____	
307	Mucaa keef xuuxxoo fayyadamtee beektaa?	Eeyyee Lakki	**Yoo 2-401**tti darbi
308	Deebii gaaffii **308** eeyyee yoo jette, Maalif xuuxxoo fayyadamta?	1. Sababa hojiif mana waaniin hin turreef 2. Harmi koo aannan gahaa waan hin qabneef 3. Hojiin manaa waan natti baay'atuuf 4. Gorsa maatii kootiti 5. Kan biroo (ibsi)_____	

Kutaa IV: Gochaa haadholiin kunuunsa handhuura(cord care) daa'imman dhalattuuf godhan ilaalchisee

Q	Gaaffilee	Deebii fi koodii	Irra darbi
401	Handhuura(cord) mucaa keetii waan irra keesse yookin itti dibde jiraa?	1. Eeyyee 2. Lakki 3. Hin beeku	Yoo **2/3-403tti** darbi
402	Maal irra keesse yookin itti dibde?	1. Dhadhaa 2. Vaasiliinii 3. Dibata/zayita 4. Kan biroo(ibsi)_____	
403	Osoo handhuurri(cord) mucaa kee dhiigee yookin dhangala'aa badaa qabaatee, maal goota? 1.Gara buufata fayyaan geessa	**Eeyyee** **Lakki** 1 2	

	2.Manumattan yaala 3.Hanga ofiisaa fayyuttan eega 4.Kan biroo(ibsi)____	1 2 1 2 _____4	
404	Handhuura daa'ima kee qulqulluu fi fayyaasaa eeguuf maal gochuu qabdaa? Akka inni hin dhiigne of eeggachuufii Jiidhinsa ittisuu fi qulqullinaan qabuu Yaaliif gara mana yaalaatti geessuu Homaa Kan biro(ibsi)_____	**Eeyyee Lakki** 1 2 1 2 ----------3 ----------4 ----------5	

Kutaa V: Gochaa haadholiin ho'iinsa daa'imman reefu dhalatanii eeguf kunuunsa (thermal care) godhan ilaalchisee.

Q	Gaaffilee	Deebii fi koodii	Irra darbi
501	Da'uumsa booda yeroo akkami mucaa kee qaama dhiqxaa?	1. Sa'aatii tokko keessa 2. Sa'aatii 24 keessa 3. Sa'aatii 24'n booda 4. Hin beeku	
502	Qaama osoo hin dhiqin tursiisun daa'ima ni fayyada jettee yaaddaa?	1. Eeyyee 2. Lakki 3. Hin beeku	Yoo **2/3-504tti** darbi
503	Gaaffii **502** eyyee yoo jette daa'ima dhalattuu tokko qaama osoo hin dhiqin tursisuun faayidaa maalii qaba?	1. Qorriinsa qaamaa ittisa 2. Madiinummaa uumamaa kan gogaa tursa 3. Infeekshinii ittisuuf 4. Kan biroo(ibsi) 5. Hin beeku	
504	Da'uumsa booda sa'aatii digdamii afran jalqabaaf daa'imni kee waltuqiinsa kallattiin gogaa(qaama) kee wajjin kaa'amee turee?	1. Gonkumaa 2. Yeroo xiqqoof hanga sa'aatii lamaaf 3. Hanga sa'aatii 2 fi 5 gidduu	

		4. Hanga sa'aatii 5 olii 5. Yeroo hundumaa	

Kutaa VI: Beekumsa haadholiin waa'ee kunuunsa daa'imman reefu dhalatanii fi mallattoo hamoo/sodaachisoo daa'imman reefu dhalatanii irratti qaban ilaalchisee.

Q	Gaaffilee	Deebii fi koodii	darbi
601	Waa'ee kunuunsa haadholiin daa'imman reefu dhalataniif kennanii beektaa?	1. Eeyyee 2. Lakki	Yoo **2-603tti** darbi
602	Handhuurri erga muramee wanti itti dibamuu jiraa?	1. Homtuu hin dibamu 2. Dhadhaa 3. Vaaziliinii 4. Hin beeku 5. Kan biroo (ibsi)	
603	Hundhuurri erga muramee booda akkaataa kamiin qabamuu qaba?	1. Haguugamuu 2. Hin haguugamu 4. Hin beeku 5. Kan biroo(ibsi)_____	
604	Daa'imni reefuu dhalate sa'aatii meeqa booda dhiqamuu qabu?	1. Sa'aatii tokko keessatti 2. Sa'aatii 2-24 keessatti 3. Sa'aatii 24 booda 4. Hin beeku	
605	Daa'imni reefu dhalate yeroo hammamii keessatti harma hodhuu jalqabuu qaba?	1. Sa'aatii tokko booda 2. Sa'aatii 24 booda 3. Sa'aatii 48 booda 4. Sa'aatii tokko keessatti	
606	Daa'imni reefu dhalatee yeroo jalqabaaf maaltu kennamuufii qaba?	1. Bishaan sukkaara qabu 2. Dhadhaa haaraa 3. Aannan harmaa / silga 4. Bishaan lagaa 5. Aannan (Aannan harma haadhan alaa) 6. Kan biroo (ibsi)	

		7. Hin beeku	
607	Mallattoolee balafamoo ykn sodaachisoo ykn hamoo Daa'imni reefu dhalatee beektaa?	1. Eeyyee 2. Lakki	
608	Deebiin kee eyyee yoo ta'e mallattoo hamoo beektu hundaa himi. **(Filannoon tokkoo ol ni danda'ama)**	1. Fedhii harma hodhuu dhabuu yookin hodhuu dadhabuu 2. Daddafanii arganuu 3. Qorriinsa qaamaa 4. Ho'iinsa qaamaa 5. Humna dhabuu yookin of wallaaluu(of irraanfachuu) 6. Handhuurri dhiiguu fi infeekshinii godhachuu	

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***Galatoomaa*!!**

ADDIS ABABA UNIVERSITY
SCHOOL OF NURSING AND MIDWIFERY GRADUATE STUDIES

DECLARATION

I hereby certify that I have read and evaluated this research entitled Essential new born care practices and associated factors among mothers attending public health institution of Nekemte town, east Wollega zone, Oromia regional state, Ethiopia, 2017, prepared under my guidance by Bizuneh Wakuma.

Bizuneh Wakuma _____ _____

Principal Investigator Signature Date

I recommend that it is submitted as fulfilling the requirements of research thesis.

_____ _____ _____

Advisor Signature Date

_____ _____ _____

Advisor Signature Date

As a member of the MSc thesis Open Defense Examination, I certify that I have read and evaluated the thesis prepared by Bizuneh Wakuma and examined the candidate. I recommend that the thesis be accepted as fulfilling the thesis requirements for the degree of Master of Science in Pediatric and Child Health Nursing.

_____ _____ _____

Examiner Signature Date