ADDIS ABABA UNIVERSTY
COLLEGE OF HEALTH SCINCES
SCHOOL OF NURSING AND MIDWIFERY

ASSESSMENT OF KNOWLEDGE, PRACTICE AND ASSOCIATED FACTORS OF ESSENTIAL NEWBORN CARE AMONG NURSES AND MIDWIVES WORKING IN SELECTED GOVERNMENT HOSPITALS IN ADDIS ABABA, ETHIOPIA, 2020.

BY: LEMLEM BERIHU

A Thesis Submitted to School of Graduate Studies of Addis Ababa University College of Health Sciences, School of Nursing and Midwifery in Partial Fulfillment of the Requirements for the Degree of Master in Neonatal Nursing.

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DECLARATION

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ACRONYMS AND ABBREVIATIONS

ALERT …… All Africa Leprosy Rehabilitation and Training Center

BCG …….Bacilli Calmette-Guerin vaccine

CHW……Community Health Worker

CHX……...Chlorhexidine

ENBC……Essential New Born Care

ETB……Ethiopia Birr

HBV……Hepatitis B virus

KM…….. Kilo Meter

MSC……Masters of Science

OPV……Oral Poliovirus vaccine

SBA……Skilled Birth Attendant

SDG……Sustainable Development Goal

SPSS…… Statistical Product and Service Solutions

TASH…… Tikur Anbessa specialized hospital

TBA……Traditional Birth Attendant

UNIGME……United Nations Inter-Agency Group for Child Mortality Estimation

WHO……World Health Organization

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ABSTRACT

Background: The time around labor, childbirth and the first days thereafter is when newborns are most vulnerable. Not only at risk of mortality due to complications, they may also acquire long-term disabilities. Skilled care during labor and childbirth with prompt management of complications alone can prevent about 50% of newborn mortality.

Objective- This study aimed to assess knowledge and practice of essential new born care and associated factors among nurses and midwives working at Addis Ababa government hospitals,2020.

Methods- Institutional based cross-sectional study design was conducted from March 25/2020-May25/2020. A total of 140 midwives and nurses was selected by simple random sampling techniques from four public hospitals of Addis Ababa. Data was collected using self adminstred questionnaire and observational checklist after Pre-test was conducted on 5% of the sample size at Zewditu hospital .Data was analyzed using SPSS software version 24. Descriptive statistics, Bivariate and multivariate logistic regression analyses was undertaken. Final result was presented in texts,tables and graphs.

Result: Out of 140 70(50.0%) participants have a good knowledge and the rest 70(50%) have poor knowledge. Regarding practice of essential newborn care 74(52.9%) participants practicticed well but the 66(47.1%)s didn"t particicted well. from the respondants 78(55.7%)have a knowledge and 75(53.6%) have practice on initiation of breathing. in-service training was significantly associated with practice of essential newborn care. participants who get training is three times more likely higher than the participants did not get training [(p=.00) COR (95%CI) 3.82(1.76-8.30)].

conclusion: From all participants 47(33.6%) gat service training on immediate or essential newborn care but 93(66.4%) didnot gat. The Study result showed presence of knowledge and practice gap of essential newborn Care so strengthen in-service training is necessary on nurses and midwives on essential newborn Care.

Keywords; Knowledge, Practice, associated factors, Essential Newborn care

INTRODUCTION

1.1. Background

The time around labour, child birth and the first 28 days newborns are most vulnerable. Not only at risk of mortality due to complications, they may also acquire long-term disabilities. Skilled care during labour and child birth with prompt management of complications alone can prevent about 50% of newborn mortality. Combined with adequate newborn care in the postnatal period,75% of newborn deaths and complications can be prevented by ensuring provision of high-quality, essential care for every baby around the time of child birth and in the first 24 hours and week after birth (1). the majority of babies are born healthy and at term. The care they get during the first hours, days and weeks of life can determine whether they remain healthy. all babies need basic care to support their survival and well being. this basic care is called essential newborn care (ENC) and it includes immediate care at birth care during the first day and up to 28 day (2). the standardized procedure for providing Essential newborn Care is not commonly practiced(3, 4).this has resulted in serious consequences of unacceptably high neonatal morbidity and mortality in the first 24 hours of life (3, 5).

The transition from the fetus to neonate represents a series of rapid dramatic physiologic changes. This change goes smoothly most of the time; however, some time the active intervention of a skilled individual is necessary to assess in that transition to ensure that it occurs with the least possible problem. So, essential new born care is very important for the survival of new born (6). The fetus was protected from infection in the mother's womb and kept warm and fed by the placenta. After birth these protections are gone and it takes a newborn baby some time to adapt but especially so in the first 24 – 48 hours after birth. The air temperature is much cooler than in the womb, they must get nourishment from the breast rather than the placenta and they are not protected from outside infections by the womb. it takes most newborn babies 1 week to 4 weeks to become strong and adapt to being outside the womb and for small babies this will take even longer (2, 7).

Many ENC interventions are simple and can be provided by a Skilled Birth Attendant (SBA) or a trained Community Health Worker (CHW) or Traditional Birth Attendant (TBA) or by a family member supporting the mother in a health facility or at home (7, 8). reducing neonatal mortality

is an essential part of the third Sustainable Development Goal (SDG), to end preventable child deaths (9).

According to the recent report of the United Nations Inter-Agency Group for Child Mortality Estimation (UNIGME), in 2018 Among the SDG regions, sub-Saharan Africa had the highest neonatal mortality rate at 28 deaths per 1,000 live births, followed by Central and Southern Asia with 25 deaths per 1,000 live births. A child born in sub-Saharan Africa is 10 times more likely to die in the first month than a child born in a high-income country (10).

According to a hospital base study in six sub-Saharan African countries The findings shared in this paper call attention to the critical need to improve health facility readiness to provide quality newborn care services and to ensure that service providers have the necessary equipment, supplies, knowledge and skills that are critical to save newborn lives (11).

World Health Organization (WHO) focuses on the most vulnerable children the newborns. Many conditions resulting in newborn deaths can either be prevented or treated using low-cost interventions. There is the need for a combined approach to the mother and her baby during pregnancy, to have some one with knowledge and the skills with her during child birth and effective care for both mother and baby after birth Skilled care at birth and postnatal checkups are essential to the well-being of both mother and newborn (12, 13).

The essential newborn care Interventions has clean child birth and cord care Prevent newborn infection, Thermal protection Prevent and manage newborn hypo/hyperthermia, Early and exclusive breast feeding Started within 1 hour after child birth Initiation of breathing and resuscitation Early asphyxia identification and management Eye care Prevent and manage ophthalmia vaccine, oral poliovirus vaccine (OPV) and hepatitis B virus (HBV) vaccine. Identification and management of sick newborn Care of preterm and/or low birth weight newborn (7, 14-17).

1.2. Statement of Problem

The first 28 days of life the neonatal period is the most vulnerable time for a child's survival. Children face the highest risk of dying in their first month of life (10, 18). According to the (UNIGME), report in 2018, worldwide, 2.5 million newborns die within the first month of life.

The share of neonatal deaths among under-five deaths globally accounted for 47 %. even though there is a neonatal mortality declined globally and in across all regions but more slowly compared to mortality among children aged 1–11 months or 1-4 years in most cases(5, 10, 18). in 2018 approximately 7,000 newborns die daily; most of these deaths occur within the first week with one million taking their first and last breaths on the day they are born and one million dying within the next 6 days (10, 18). many neonatal deaths could be avoided with simple, cost-effective and high-impact interventions.

In Ethiopia about 120,000 newborns die every year in the first weeks of life which accounts for 42% of all deaths of under-five mortality (5, 18, 19). the study conducted in Afar indicated that A significant number of nurses and midwives had inadequate knowledge and poor practice on immediate newborn care (4). According to the Ethiopian Demographic Health Survey (EDHS) 2016, the under-5, infant and neonatal mortality rate is 67, 48 and 29 deaths per 1,000 live births respectively. In other words, in Ethiopia 1 in every 35 children dies within the first month, 1 in every 21 children dies before celebrating the first birthday, and 1 of every 15 children dies before reaching the fifth birthday (20). Ethiopia has made remarkable progress in achieving many of the national health indicators. The implementation of the National Child Survival Strategy (2005–2015).helped in the reduction of child mortality; however, the current under-five and neonatal mortality rates remain unacceptably high (5).

Between 2000 and 2016, under-five mortality in Ethiopia decreased from 166 to 67 per 1000 live births (reduction of 60%). However, NMR is decreasing at a slower rate and now accounts for 41% of under-five deaths (5, 20). In Ethiopia the leading causes of neonatal death are prematurity, asphyxia, and neonatal sepsis (5, 20-22). Skilled professional care at birth is critical for the newborn baby as well as for the mother. Knowledge and practice of health care provider is essential in improving the life of newborn and reduces mortality and morbidity of newborn babies. Nurses/midwives have an important enabling role to assist the woman during child birth.

1.3. Significance of the study

Continually assessing of Nurses/midwives on Knowledge and practice associated factors essential newborn care is one of the key requirement 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 newborns are directly benefited from the finding of the study as the identified level of practice and factors affecting it influences quality care of the Nurses/midwives and newborns.

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 health care provider 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.

LITERATURE REVIEW

2.1. General information about essential newborn care

The basic care required for every baby that should always be prioritized in a humanitarian setting. Irrespective of where the birth takes place, essential care for all newborns comprises thermal care (drying and keeping the baby warm through skin-to-skin contact and delayed bathing); infection prevention (promoting and supporting hand washing for all caregivers, providing hygienic umbilical cord and skin care),initiation of breath in (drying, stimulation and resuscitation, when required) feeding support (early and exclusive breast feeding) and postnatal care, including monitoring and assessment of newborns for danger signs of serious infections (and prompt referral when danger signs are present) and identifying babies requiring additional care (8).

2.2. Overview of knowledge and practice

A study conducted in Khartoum, showed that, study population had a fair knowledge level (50.6%), their performance level of practices was poor (41.1%) towards immediate care of the newborn (6). Also As study in Uganda Knowledge regarding newborn care among primary health care workers in Masindi was very low. The highest deficit of knowledge was in management of neonatal infections (23).

A study conducted in Tigray regional state, show that 64.8% had good knowledge and 59.8% of the respondents had a good level of essential newborn care practice (24). According to a study conducted in jemma also the mean knowledge score of study participants was 23.27. The study revealed that 52.2% and 47.8%of the respondents had good and poor knowledge respectively. The mean score of practice was 32.82 and 51.1% and 48.9% of the respondents had good and poor level of practice respectively (25).

2.3. Knowledge and practice about dry and stimulate

According to study in six sub-Saharan African countries,59% of participants had Knowledge on dry with warm towels or cloths and 80% of newborns were immediately dried after birth (11).

According to a study conducted in Afar 47.9% had Knowledge on Dry baby and 80.6% participants practiced immediately dried after birth (4).

2.4. Knowledge and practice about evaluate breathing, airway clearance, and neonatal resuscitation

According to a study conducted in India, the mean score for knowledge and skills in neonatal resuscitation was 76% and 24% respectively. According to the author, for nursing staff, the average score for knowledge and skill in neonatal resuscitation was found to be 74% and 20% (26). other study conducted in Afghanistan 66%, knowledge and 83% of felt very confident in their ability to perform newborn resuscitation (27).

According to the study conducted in Ethiopia *south wollo* show resuscitation were inadequate. Only 32.9% and 24.5% of the participants had good knowledge and practice towards resuscitation (28). also a study condcted in Jimma Zone, indicated the study population had knowledge gap on resuscitation domains(25).

2.5. Knowledge and practice of cord care and infection prevention

A study conducted in Khartoum 63.9 % have Knowledge regarding infection prevention and 35.4% of them clamps the cord approximately 2-3 minutes after the birth and 83.3 % of nurse-midwives used sterile scissor during cutting the cord, (6).

In Ethiopia, the study conducted in Tigray, show that immediately after delivery 86.4% of midwives had knowledge of providing TTC eye ointment on both eyes (29). and a study condcted in Jimma Zone. poor infection prevention practice and, consistently administration eye ointment was relatively low, poor knowledge and practice on precise cord clamping time which may leads to neonatal anemia, majority were not knowledgeable on identification of neonatal danger signs (25). study conducted in Afar 57 study participants 38.8% had knowledge on prevention of eye infection, three hundred and thirty-one (92.7%), the study participants put on a sterile glove, 230 (64.4%) of clean the eyes of newborn and majority (80.7%) of the nurses and midwives applied tetracycline eye ointment for the prevention of ophthalmic neonatorum(4).

2.6. Knowledge and practice of hypothermia and thermal protection

Study conducted in Khartoum 78.1% of the study participants could mentioned that newborn should be placed on the mother's abdomen immediately after delivery (6).study conducted in Afar 43.7% have knowledge on Skin to skin contact and 282 (79%) of the study participants kept baby skin-to-skin contact with mother (4). acording A study conducted in Tigray. Knowledge Most of the respondents know on placing the new born on mother's abdomen 122 (83%) immediately after delivery(29). Other study conducted in Tigray show that newborn About 151 (84.4%) study participants performed skin-to-skin contact with the caregiver of the newborn(24).

2.7. Knowledge and practice of initiation of breastfeeding in the first one hour

Study conducted in Tigray. Participants responded that the advantage of early initiation of breast feeding; 97 (66%) said, it prevents the newborn from hypoglycemia and 91 (61.9%) of respondents know the advantage of colostrum on preventing new-born baby from infection. Among all,137 (93.2%) of respondents had knowledge on the appropriate time of initiation of breast feeding for the newborn baby (29).

a study condcted in Jimma Zone Regarding breast feeding, 234 (86.0%) of study participants were aware that initiation of breast feeding after delivery should be taken within the first hours of delivery, more than 3/4 were aware that colostrums has infection protection role in newborn where as the remaining 56(20.6%) did not aware. About duration of exclusive breast feeding, 210 (77.2%) of the respondents know that the mother should feed exclusively for the first six months (25).

2.8. Knowledge and practice of administration vitamin k intramuscularly (im)

According the study conducted in Afar,60.8% had Knowledge on vitamin K administration and 62.7% practice vitamin K administration. as study condcted in Tigray.(66.2%) give Vitamin K IM on anterior mid-thigh (31).

2.9. Knowledge and practice of immunization and place identification bands on the wrist and ankle

According the study conducted in Afar, 63.9% had Knowledge on immunization and 46.5% had practice the recommended immunization (Oral Polio Vaccine (OPV0) and Bacillus Calmette-Guerin (BCG) vaccine) immediately after birth (4). According the study conducted inTigray About 146 (99.3%) of participants in this study were not practiced to put baby identification bands on the wrist and ankle after delivery(29).

2.10. Knowledge and practice of weigh the newborn when it is stable, warm and record all observations

According the study conducted in Afar 54.9%,92.3% participants had Knowledge, practice on weighing the newborn care respectively(4).According the study conducted inTigray 55.1% and 2.7 % of participants had Knowledge on Weighing the newborn and on Recording(29).

2.11. Associated factors with level of knowledge and practice

According the study conducted in Uganda level of care, about 44.1% of health workers of health center levels III/ II and 50% of hospital/ health center IV were considered to have adequate knowledge in immediate newborn care. (23).

According to study in Tigray educational status, training status and availability of materials (like guide lines, drug and vaccine, etc.) were found to have a significant association with participants' level of knowledge of ENC at a p-value of ≤ 0.2. Nevertheless, in multivariable logistic regression, unavailability of adequate materials (like guidelines, drug, etc.) was significant. Unavailability of adequate materials 2.4 times higher to had poor knowledge (AOR = 2.4, 95% CI (1.12, 5.16)).Similarly, workload, training status, and availability of materials (like guidelines, drug, etc.) were found to have a significant association with participants' level of practice of ENC. However, after controlling the confounding variables only training status was significant. Those who trained ENC 2.09 times higher to had a good level of practice (AOR = 2.09, 95% CI (1.08, 4.02)) (24).

A study conducted in Afar midwives and nurses with inadequate knowledge had lower odds of having a good practice on immediate newborn care [AOR: 0.39; 95% CI (0.25, 0.64)] compared to those having adequate knowledge. Midwives and nurses without interest to provide newborn care were less likely [AOR: 0.35; 95% CI (0.16, 0.74)] to have a good practice on immediate newborn care compared to those who had an interest. in addition, the odds of having a good practical performance on immediate newborn care were lower among midwives and nurses having work experience of lower than six years [AOR: 0.33; 95%CI (0.14, 0.78)] compared to those having six years and above experience. On the other hand, receiving newborn care training [AOR: 0.40; 95% CI (0.23,0.70) and working in hospitals [AOR: 8.56; 95% CI (2.39, 30.63)] were positively associated with good newborn care practices (4).

2.12. Conceptual Frame Work

The conceptual frame work adapted and modified from literature. The information of the frame work displayed in the figure 1 below. The arrows .in the diagram shows the relationship between the variables. As depicted in the diagram, knowledge and essential newborn care practice can be affected by socio-demographic characteristics and Personal and institutional factors. On the other hand, knowledge can affect practice of essential newborn care

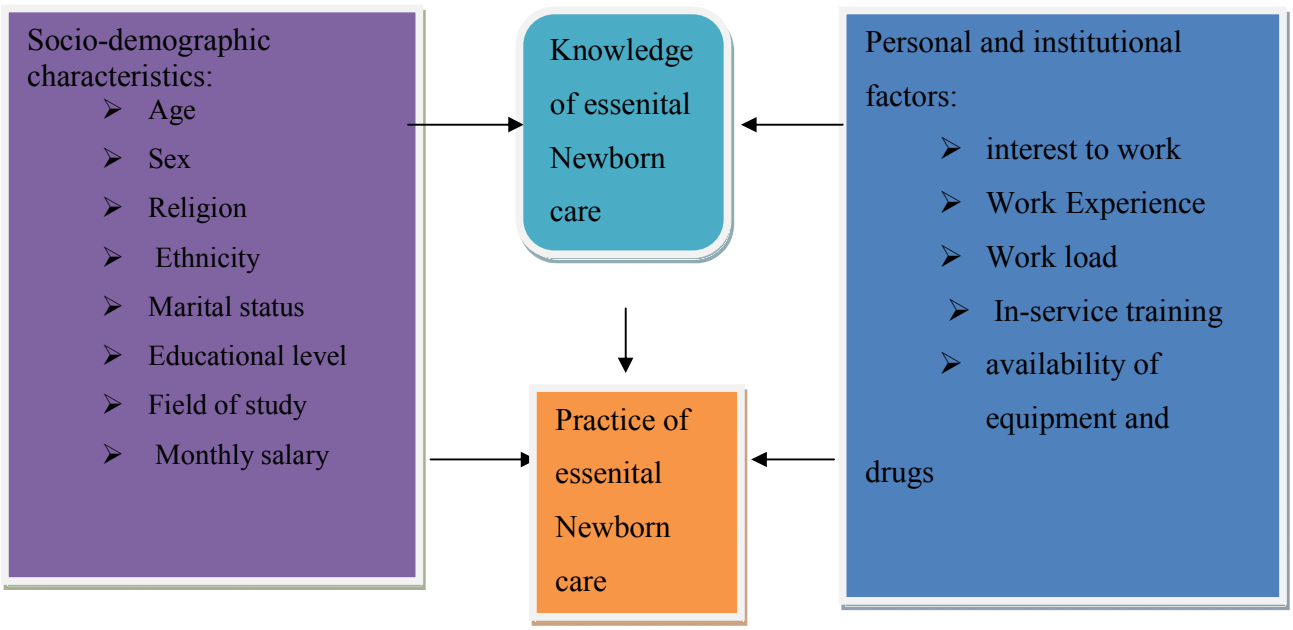


Figure 1Conceptual framework adapted and modified prepared based on review of literature(25, 29)

OBJECTIVES OF THE STUDY

3.1. General objective

To assess knowledge and practice of essential newborn care and associated factors among nurses and midwives working at Addis Ababa, governmental Hospitals, 2020.

3.2. Specific objectives

- To assess essential newborn care practices among nurses and midwives working at Addis Ababa governmental Hospitals Ethiopia, 2020.
- To determine knowledge of essential newborn care among nurses and midwives working at Addis Ababa governmental Hospitals Ethiopia, 2020.
- To identify factors associated with knowledge and practice of essential newborn care among nurses and midwives working at Addis Ababa governmental Hospitals Ethiopia, 2020.

METHOD AND MATERIALS

4.1. Study area and study period

The study was done in Addis Ababa, the capital of Ethiopia. The population omf Addis Ababa as of 2007 is 3,384,569, the study was conducted in four selected public hospitals in Addis Ababa, Namely; Tikur Anbessa specialized hospital (TASH), St. Paul's Hospital, Gandhi Memorial hospital, and Alert hospital,

Tikur Anbessa specialized hospital (TASH) is the teaching hospital of the college (TASH) is the largest specialized hospital in Ethiopia, with 700 beds, 200 doctors, 379 nurses and 115 other health professional dedicated to provide health care service. The various department s, faculties and residents under special training in the school of medicine provide patient care in the hospital. The hospital also has 950 permanent and contract Administrative staff to support the hospital activities.

Gandi memoralhospital is one of those governed by Addis Ababa city administration health bureau and gives maternal and neonatal service. This hospital found in Kirkos sub city. Gandhi Memorial hospital is a governmental hospital which specializes in maternity services. The hospital was established in 1951E.c. The hospital daily manages 30 -40 delivery cases of pregnant mothers who come from various corners of Addis Ababa and nearby towns. In the past twelve months about eight thousand delivery service was given and about two thousand newborns were admitted in NICU (GMH).

Alert hospital was established in 1922 by Dr.Thomas Lambie. also Alert is the Armauer Hansen Research institute. founded in 1970,specilization in leprosy research. this medical facility on the edge of Addis Ababa,specializing in Hansen's disease, also known as "leprosy". It was originally the All Africa Leprosy Rehabilitation and Training Center (hence the acronym), but the official name is now expanded to include tuberculosis: All Africa Leprosy, Tuberculosis and Rehabilitation Training Centre. This hospital found in Kolfe Keranio Sub City Woreda 01, Jimma Road, Zenebework Area. There is currently a 240-bed teaching hospital, which includes surgery and Maternal and child health departments. The hospital daily manages 14-16 delivery service that comes from Addis Ababa and nearby towns (http//m.me/alertcenter).

St. Paul's hospital was established in 1961 to serve the economically under-privileged population. In 2007 it became a medical college focused on modern training curriculum, aspiring to become an Ethiopia center of excellence for women's and Child health. St. Paul's millennium medical college is found in Addis Ababa Administrative city and 5KM West Addis Ababa. The hospital has 350 beds sees an annual average of 300,000. It has a catchment population of more than 5 million (hospital 2018 anual report),

4.2. Study period

The study was conducted between the months March 25/2020- May25/2020.

4.3. Study design

Institutional based Cross-sectional study was conducted at selected governmental hospitals that found in Addis Ababa Ethiopia.

4.4. Population

4.4.1. Source of population

The source populations are nurses and midwives who are working in delivery room, in the public hospitals of Addis Ababa Ethiopia.

4.4.2. Study population

Midwives and nurses who provide essenital newborn care on delivery room of the selected hospitals in Addis Ababa, Ethiopia.

4.5. Inclusion and exclusion criteria

4.5.1 Inclusion Criteria

- All nurses and midwives who provide essential newborn care on delivery room, services are included in the study.

4.5.2 Exclusion criteria

- Midwives and nurses who work outside delivery room.
- Midwives and nurses students working for their practice.
- Midwives and nurses on annual leave and midwives and nurses not available during data collection time are excluded from the study.

4.6. Sample size

To determine the sample size to study nurces and midwives knowledge, practice, and associated factors about essential newborn care, the formula for single population proportion used and the following assumptions made. A Significance level of 95% and 5% margin of error was taken. The study on assessment of Knowledge, Practice and associated factors of midwives about immediate newborn care in Tigray showed a prevalence levels for knowledge, practice and associated factors of 64.8%, 59.8% respectively (24).

Knowledge n = $\frac{(Za/2)^2 p(1-p)}{(d)^2}$ = n = $\frac{(1.96)^2 0.648(1-0.648)}{0.05^2}$ = *350*

Practice n = $\frac{(Za/2)^2 p(1-p)}{(d)^2}$ = n = $\frac{(1.96)^2 0.598(1-0.598)}{0.05^2}$ = *369*

Assumption

n= number of the study subjects

Z= is standardized normal distribution curve/value for the 95% confidence interval (1.96)

p = proportion of knowledge, practice of the nurces and midwives about essenital newborn care (Knowledge, practice levels64.8%, 59.8% respectively)

d = the margin of error taken (0.05 taken) since expected population is less than 10000, population .correction is done using the formula no/ (1+n/N)

N = Source population (total midwives and nurses) =194

Non response rate=10%

Table 1: Sample size calculation for Knowledge and Practice

Variable	Prevalence	Confidence Level	Degree of Precision	no	Sample size calculated	Non-response rate (10%)	Total sample size
Knowledge	64.8%,	95%	0.05	350	124	12	136
Practice	59.8%	95%	0.05	369	127	13	140

Of the two sections used to calculate the sample size, a larger sample size is found in a section for Practice study (table 1). Therefore a sample size of 140 is considered as appropriate for this study.

4.7. Sampling procedure

in Addis Ababa there are 13 Government hospitals,except Amanuel hosppital 12 hospitals were included in the study.final study participants was selected using Simple random sampling(SRS) consecutive sampling technique was used. those nurses and midwives found working in the selected hospitals during data collection period was included to the study until the sample size fulfilled.

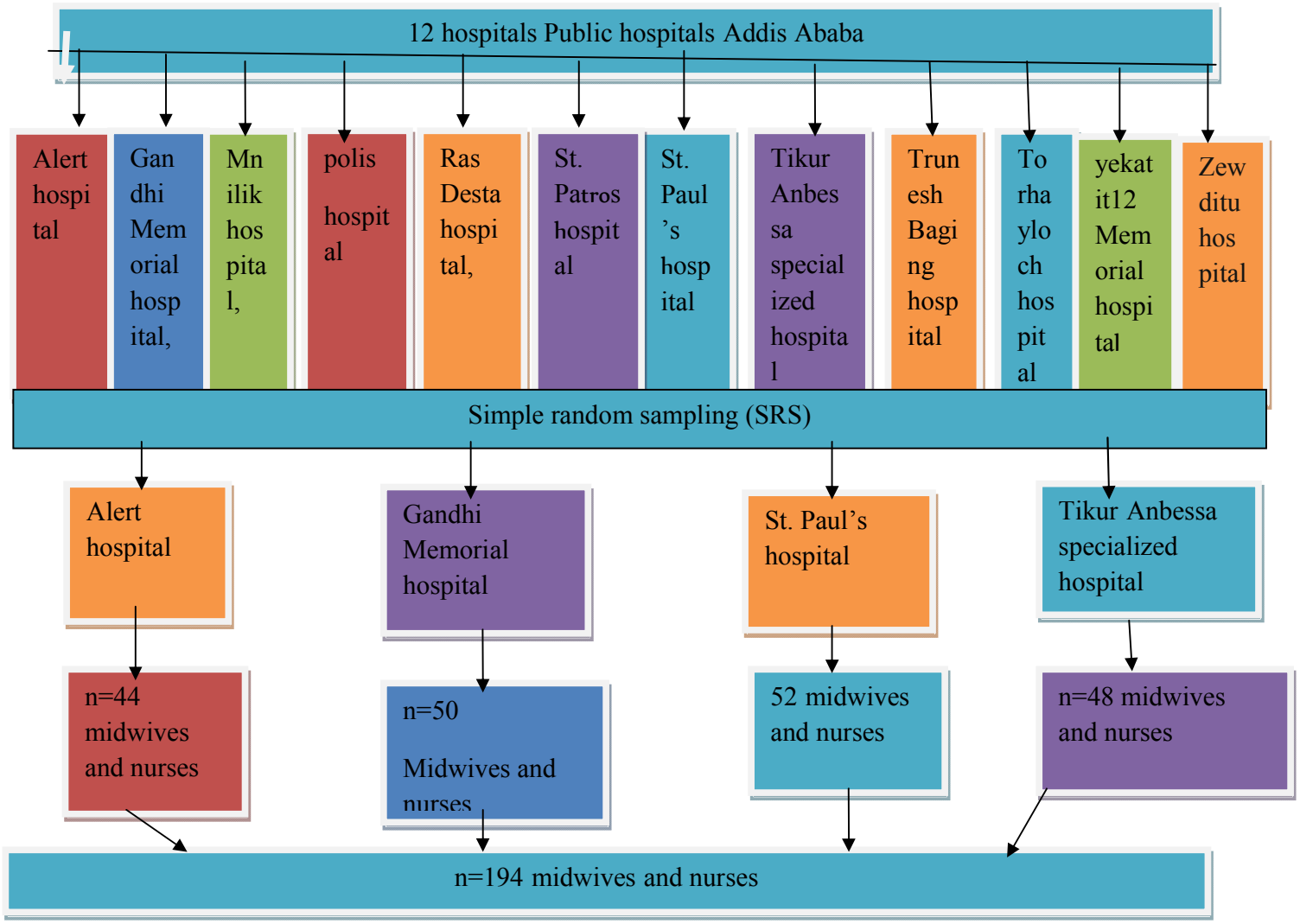


Figure 2.Schematic representation of sampling procedures in public hospitals Addis Ababa, 2020.

4.8. Study variables

4.8.1. Dependent variables

Knowledge and practice of midwives and nurses towards essential new born care.

4.8.2. Independent variables

Socio-demographic characteristics of partcipants like

- sex
- Age
- Ethnicity
- Marital status
- Educational qualification
- Field of study
- Monthly salary

Personal and institutional factors like

- Work load
- Work experience
- in service training
- Knowledge
- availability of equipment and drugs

4.9.Data Quality Management

To maintain data quality, all data collectors are Bsc Midwifes and Bsc Nurses who had knowledge on newborn and all data collectors were train on data collection procedures. Moreover, 5 % of the sample size was pretested at Zewditu hospital on 5% of the sample size and necessary adjustment was made according to the Pretest result.

4.10. Data Processing and Analysis procedures

After the collected data checked for consistency and completeness, data was entered and analyzed using SPSS software version 25. Descriptive statistics, Bivariate and multivariate logistic regression analyses was undertaken used to see significance of association between

dependent and independent variables. P-Value<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 midwives and nurses 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

4.11 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 Addis Ababa university to Addis Ababa health bureau, Tikur Anbessa Specialized Teaching Hospital,St. Paul's hospital millennium medical college, and Alert hospital,then their ethical comittee gave me a permission 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 formed written consent was obtained from each volunter study participants during data collection to confirm willingness. About the purpose of the study and participation was voluntary, Confidentiality of information and privacy of participants was assured for all the information provided, to preserve the confidentiality of the data was not exposed to the third party except the principal investigator.

4.12. Dissemination of Result

Results of the study will be disseminated to Addis Ababa public health research and emergency management directorate.

4.13. Operational definition

Thermal care: Drying, warming, skin-to-skin contact, delayed bathing.

Infection prevention/hygiene: Clean birth practices, hand washing, clean cord/skin/eye care. Chlorhexidine cord care is recommended for newborns born at home and in settings where the neonatal mortality rate is above 30 per 1000 live births.

Initiation of breathing: Thorough drying, clearing the airway only if needed, stimulation through rubbing the back, basic neonatal resuscitation using a self-inflating bag and mask for babies who do not spontaneously breath.

Feeding support: Skin-to-skin contact, support for immediate and exclusive breastfeeding, within 1,hour after birth and make sure the baby receives the first milk (colostrum).

In this study, essential new born care knowledge and practice was divide in four groups based on the total score of correct answer and total score of performance checklist Practice. above the nean value good and less than the mean value poor classified on Good Practiced, Poor practiced, Good knowledge and Poor knowledge on essential newborn care:

Knowledge- Refers to knowledge response of questions about essential newborn care

Good knowledge If the total score of correct answer of of knowledge questions is above the mean value of the study population.

Poor knowledge If the total score of correct answer of knowledge questions is less than the mean value of the study population.

Practice: Refers to the performance of nurses and midwives according to prepared checklist regarding essenital newborn care

Good Practiced If the total score of performance of nurses and midwives according to prepared checklist Practice is above the mean value of the study population.

Poor practiced If the total score of performance of nurses and midwives according to prepared checklist Practice is less than the mean value of the study population.

5.RESULT

5.1. Socio-demographic characteristics and institutional, Personal factors of participants.

A total of 140, nurses and midwives with a response rate of 100% selected consecutively from 4 hospitals.all of the participants are from Addis Ababa, governmental Hospitals. From the total of 140 participants 66(47.1%) were males and 74(52.%) were females.126(90.1%) of the participants were in the age group of 20-30, followed by the age group >30 were 14 (9.9%) . Concerning their religion, Orthodox Christianity was the dominant religion consisting of 104(74..3%), followed by Muslims 18(12.9%) and Protestant 18(12.9%).Regarding to marital status 89(63.6%) were single, 49(35.3%) were marrried and 2(1.4%) were divorce. Based on Ethnicity 87 (62.1%) of respondents were Amhara, followed by 26(20%) were oromiya, 4(3%) were Tigray and others were 16(11.4%) (Figure-4).

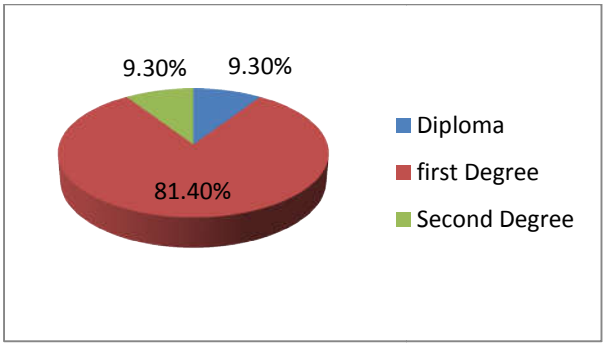


Figure 3- distribution of Educational level of study participants in Addis Ababa, AddisAbaba, 2020 (n=140)

concerning to educational status of participants 114(81.4%) were first Degree, and Diploma and Second degree were identically 13(9.3%) (Figure- 3). When we come to proffession 129(92.1%) were midwife, 11(7.9%) were nurse.Acorrding to monthly salary in a range 2001-6000 were 100(73.4%) and 6001-10,000 were 36(26.4%) (Table:2).

Table 2-Socio-demographic characteristics and institutional and personal factors of participants among midwives and nurces Addis Ababa, 2020

Variable	**Category**	**Frequency (N=140)**	**Percent**
Sex	Male	66	47.1%
	Female	74	52.9%
Age	20-3o	126	90.1
	>31	14	9.9%
Religion	Orthodox	104	74.3%
	Muslim	18	12.9%
	Protestant	18	12.9%
Marital status	Single	89	63.6%
	Married	49	35.3%
	Divorced	2	1.4%
Profession	Nurse	11	7.9
	Mid wife	129	92.1
Monthly Salary	2001-6000	100	73.5%
	6001-10,000	36	26.5%
name of facility	federal hospital	104	74.3
	Addis Ababa hospital	36	25.7
work experience in delivery	<5 Year	129	92.1%

room	>6 Year	9	6.3%
over work load	Yes	111	79.3%
	No	20%28	20%
in-service training	Yes	47	33.6%
	No	93	66.4%
Delivery room clean	Yes	133	95.0%
	No	7	5.0%
Cord tie and clamp prepared	Yes	137	97.9%
	No	3	2.1%
Baby identification material prepared	Yes	103	73.6%
	No	37	26.4%
Clean Suction device prepared	Yes	126	90.0%
	No	14	10.0%
Clean/ dry towel prepared	Yes	98	70.0%
	No	42	30.0%
Neonatal ambo bag and mask prepared	Yes	119	85.0%
	No	21	15.0%
soap and water avalable	Yes	55	39.3%
	No	85	60.7%
Availability of drugs and equipments	Yes	46	32.9
	No	94	67.1

As shown the above table 2 their work experience in delivery room 129(92.1%) and 9(6.3%) participants had work experience less than 5 years and greater than 6 years respectively. out of 140 participants 112(80%) had over work load and the rest 28(20%) worked freely. from all participants 47(33.6%) gat service training on immediate or essential newborn care but 93(66.4%) didnot gat.

when we discussed about preparation of equipment to receive the newborn baby 95% delivery room clean, 97% prepared cord tie and clamp, 73.6% prepared baby identification material, 90% prepared clean suction device, 70% prepared clean/dry towel, 85% prepared neonatal ambo bag & mask and 39.3% avaliable soap and water.

5.2. Knowledge and practice of nurses and midwives on essential newborn Care

Out of 140 participants 70(50.0%) have a good knowledge and the rest 70(50%) have poor knowledge. when we come to practice 74(52.9%) participants practiced well but the 66(47.1%)s didn"t particed well on essential newborn care (table: 3).

In this study, the result told that the knowledge on cause of hypothermia in nurses and midwifes was 55%, on normal temprature 53.6% and on time of bathing 81.4%. On practice of hypothermia 88.6% of participants remove wet cloth used to dry the baby and 90.7% cover the baby body and head with clean cloth. (table: 7) .

When we asked the participants that what are the complication of newborn , 114(81.4%) on infection ,104(74.3%) on asphyxia, 1116(82.9%) on hypothermia, 3(2.1%) on hypoglycemia and each jaundice, anemia, respiratory disress(RD), meconeoum aspiration syndrome(MAS)has been answered by 1(0.7%) participants (Figure-5). when we see knowledge on protective methods of newborn problem 11(7.9%) have a knowledge on drying baby and eye care, 25(17.9%) on assessing breathing 3(2.1%) on cord cutting & care and the rest 2(1.4%) 0n early initiation of breast feeding. 99(70.7%)of participants answered all. genarally 99(70.7%) have knowledge on the protective methods problem/complication of newborn(Figure-6). About the knowledge on starting time of ENC 32(22.9%) answered before birth,40(28.6%) during birth and 84(60.0%) after birth (table: 3).

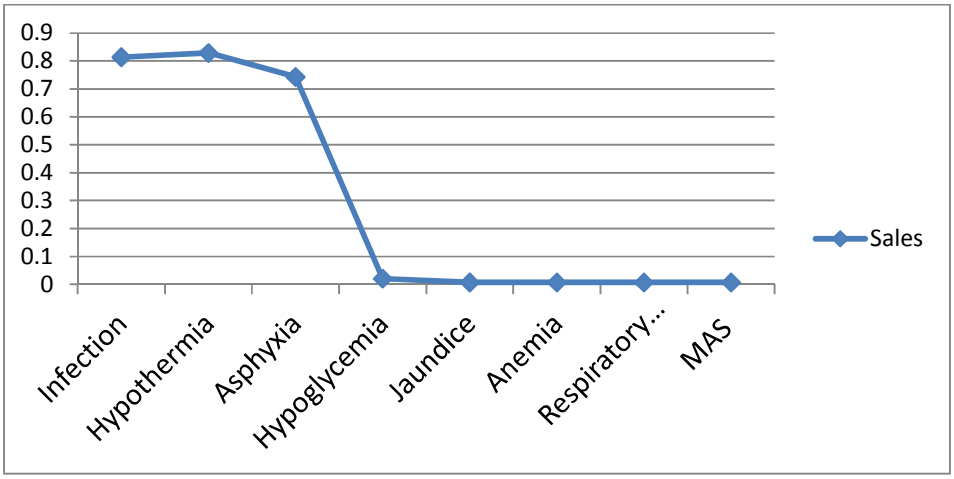


Figure -4:Knowledge of nurses and midwives on complication of newborn Care at Addis Ababa, governmental Hospitals

When we discussed about knowledge and practice of midwifes and nurses on hand washing. 92% of participants have a knowledge of hand washing before and after caring the baby . but they are poor in practice. only 41.4% of participants apply in practice and as we see the avaliablity of soap and water it is only 39.3% (table: 6)

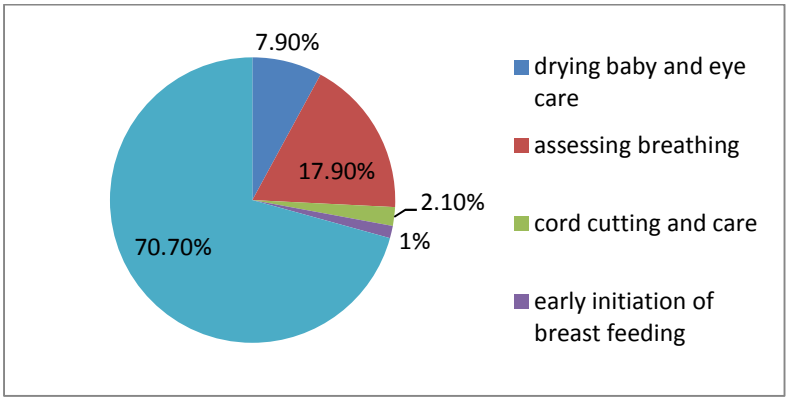


Figure -5:Knowledge of nurses and midwives on protective methods on complication of newborn Care at Addis Ababa, governmental Hospitals, 2020

The knowledge of participants that when should a skilled person be presented at a birth is 109(77.9%) and knowledge on APGAR score is 130(92.9%). And 124(88.6%) participants take APGAR score within 1st and 5th minutes but the other 16(11.4%) didnt take (table;3)

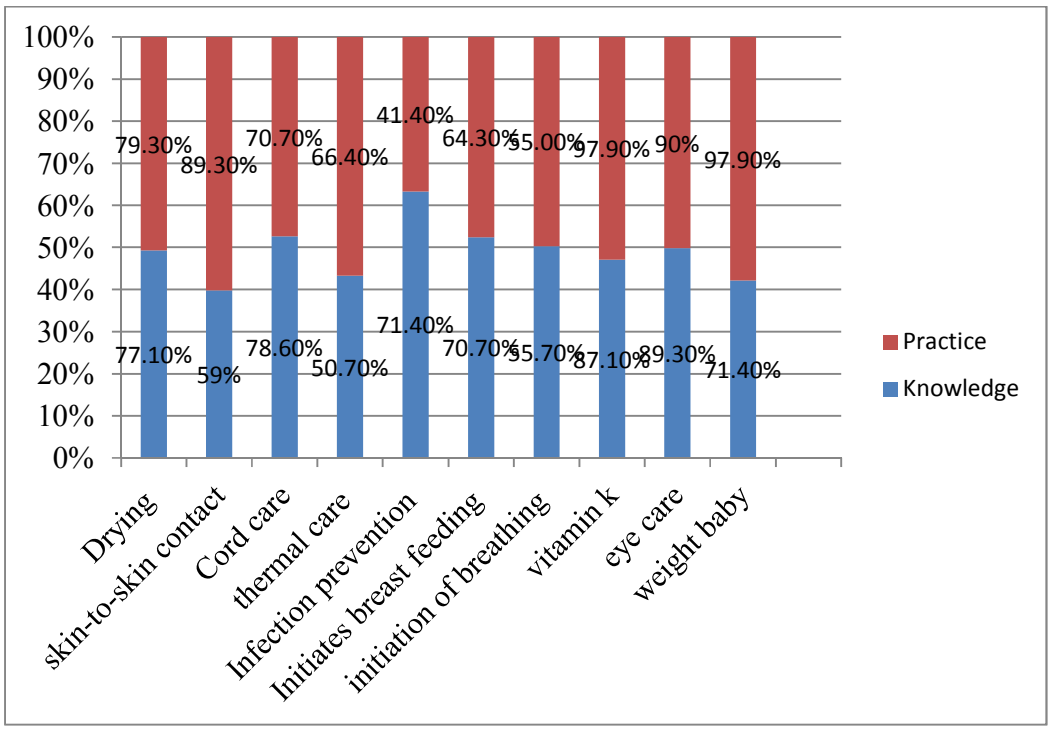


Figure-6 Knowledge of nurses and midwives on component of essential newborn Care at Addis Ababa, governmental Hospitals, 2020

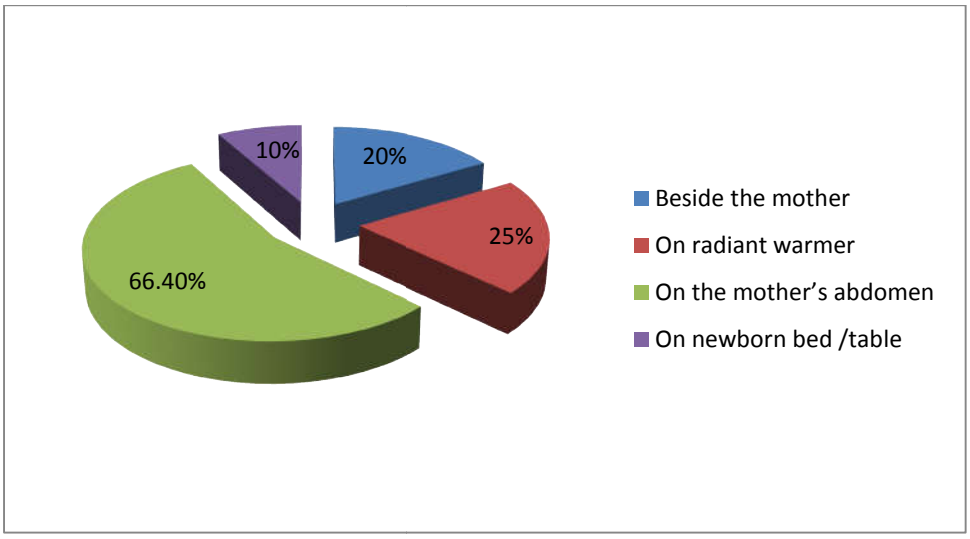
Table-3:Knowledge and practice of nurses and midwives on essential newborn Care at Addis Ababa, governmental Hospitals, 2020

Knowledge on time starting for ENC		
before birth	32	22.9
during birth	40	28.6
after birth	84	60.0
Knowledge on When skilled person be present at a birth		
If problems occur	31	22.1%
At every birth	109	77.9
Knowledge on What is the normal APGAR score		
0- 3	4	2.9
4-6	6	4.3
7-10	130	92.9
Knowledge on Enc		
Good Knowledge	70	50
Poor Knowledge o	70	50
Practice on Enc		
Good Practice on Enc	74	52.9%
Poor Practice on Enc	66	47.1%
Practice forTake Apgar Score within 1st and 5th minutes	124	88.6

5.3. Knowledge and practice about dry stimulate and skin to skin contact

on drying 108 (77.1%) participants have Knowledge. When the participants asked about the time to be taken for drying baby immediately after delivery 107(76.4%) of them said within one minute, the other 32(22.9%) and 5(3.6%) participants said wihin two minute and greaterthan two minute respectively. According to practice 111 (79.3%) participants was practiced to dry.

About skin to skin contact 82(58.6%) have knowledge on skin to skin contact . Out of the participants 93(66.4%) have the knowledge that newborn should kept immediately after birth on the mother's abdomen, 28(20%) thought that newborn babies should kept beside the mother and the other 35(25%) and participants thought that they should kept on the radiant warmer and newborn bed/table respectively (Figure:8).Based on the knowledge on the advantage of skin to skin contact 125(88.6%) participants have a knowledge to prevent hypothermia and help to stay warm, 25(17.9%) participants to help to expel placenta and the rest 77(55.0%) participants to Enhance early breast feeding and bonding. Inaddition 125(89.3%) participants were practiced skin to skin contact(table:4).



Fgure :7:Knowledge of nurses and midwives Where newborn kept immediately after birth in Addis Ababa, governmental Hospitals, 2020

Table-4:Knowledge and practice of nurses and midwives on dry stimulate and skin to skin contact in Addis Ababa, governmental Hospitals, 2020

Knowledge on time to dry,to clear the airway and stimulate breathing the baby		
Variable	**Frequency(N=140)**	**Percent**
Less than 1 minute	107	76.4%
Two minutes	27	19.3%
More than Two minutes	5	3.6%
Knowledge on the advantages of skin to skin contact		
prevent hypothermia and help to stay warm	124	88.6%
help to expel placenta	25	17.9%
Enhance early breast feeding and bonding	77	55%
practice on dry stimulate and skin to skin contact		
immediatly dry and stimulate the hole body	111	70.3%
check if the baby is crying while drying it	127	90. %7
Puting the baby on mothers chest /abdomen immediately	125	89.3%

5. 4. Knowledge and practice evaluate breathing, airway clearance, and neonatal resuscitation

When the participants asked about measures to be taken for babies not cries immediately after delivery 101 (72.2%) of them knew that the correct measure is calling a help and start resuscitation, 39 (27.9%) of them responded more stimulation to breath and 22(15.8%) answered to Start cardio-pulmonary resuscitation. About recommended position of the baby's head during ventilation 101 (72.2%) of respondents were aware that the baby's head should be slightly extended, 35(25%) respondants a flexed position of the head and 4(2.8%) of them responded Hyper extended position of head. Inaddition 72(51.4%) were Knowledge on normal respiratory rate.

regarding the practice initiation of breathing actions to be taken when the baby is not breathing well after drying and stimulating 82(58.6%) participants perform the step or task completely & correctly and 87(62.1%) were use Clean appropriate size mask. when we come to babies with difficulty breathning participants have the following knowledge. based on this 72(51.4%) chest retraction, 90(64.3%) gasping and 33(23.6%) not breathing at all. when we generalize 78(55.7%) have a knowledge and 77(55%) have practice on initiation of breathing (tabie:5).

Table-5:Knowledge of nurses and midwives on early initiation of breathing Addis Ababa, governmental Hospitals, 2020

Knowledge baby with difficalty breathing		
Variable	**Frequency(N=139)**	**Percent**
Chest Retractions	72	51.4%
Gasping	90	64.3%
Not breathing at all	33	23.6%
Knowledge on normal respiratory rate in newborn baby		
65 breaths per minute	49	35%
40 breaths per minutes	72	51.4%
80 breaths per minute	22	15.7%
Knowledge on not breathing well baby after drying, clearing the air way and rubbing the back once or twice		
more stimulation to breath	39	27.9%
Call a help and start resuscitation	101	72.2%
Start cardio-pulmonary resuscitation	22	15.8%
Knowledge on recomended position the baby's head During ventilation		
A flexed position of the head	35	25%
Slightly extended position of head	101	72.1%
Hyper extend extended position of head	4	2.8%

Knowledge on time to dry,to clear the airway and stimulate breathing the baby		
Less than 1 minute	107	76.4%
Two minutes	27	19.3%
More than Two minutes	5	3.6%
Knowledge on a baby cries after birth and then breathes quietly and regularly		
Give routine care	117	83.6%
Provide help to breathe	27	19.3%
practice on about evaluate breathing and neonatal resuscitation		
Baby not crying or not breathing well within 30 seconds of birth	82	58.6%
use Clean appropriate size mask	87	62.1%
check if the baby is crying while drying it	127	90.7%
initiation of breathing	75	53.6%

5. 5.Knowledge and practice of cord care and infection prevention

On cord care 110(78.6%) have knowledge and 108(77.1%) of them clamps the cord about 1-3 minutes after the birth and 31(22.1%) of nurse-midwives cutting the cord or clamp Immediately. 99(70.7%) practice on cord care (table:6).

About time of hand washing 130(92.9%) participants answered Before and after caring the baby, 41(29.4%) participants answered after removing the glove and 18(12.9%) prticipants answered

when they look dirty. according to knoeledge and practice on Infection prevention 100 (71.4%) had knowledge and 58(41.4%) had practice on infection prevention (table:6).

Table-6:Knowledge and practice of nurses and midwives on cord care and infection prevention in Addis Ababa, governmental Hospitals, 2020

Knowledge on cord care of crying baby and Knowledge on hand washing		
Variable	**Frequency(N=140)**	**Percent**
clamp or tie Immediately	31	22.1%
Wait 1 to 3 minutes to clamp cut the cord	108	77.1%
Knowledge on hand washing		
When they look dirty	18	12.9%
Before and after caring the baby	130	92.9%
after removing the giove	41	29.4%
Practice on cord care		
Cord tie	131	93.6%
Cuts the cord after 1-3 minutes	101	72.1%
Practice infection prevention		
hand washing	58	41.4%
Puts on sterile glove	121	86.4%
Explains to mother not to put anything on cord stump	84	60.0%
Infection prevention practiced	58	41.4%

5.6.Knowledge and practice of hypothermia and thermal protection

About Knowledge on the Causes of neonatal hypothermia 33(23.6%) respondants answered Prematurity, 14(10%) Cold environment 8(5.7%) Wet or naked baby and other 8(5.7%) Cold linen and 77(55%) answered all (figure:9) regrading the protective methods of Hypothermia to newborn 108(77.1%) answered immediately drying, 109(77.9%) allowing skin-to skin contact and 10(7.1%) early bathing. according to the knowledge on normal tempreature of newborn baby 75(53.6%) participants have Knowledge. based on the time of bathing 19(13.6%) participants thought that Before 24 hour delivery, 114(81.4%) After 24 hour of delivery and 7(5.0%) participants didnot know the time.according to practice 124(88.6%) participant Removes wet cloth used to dry the baby, 127(90.7%) participants cover the baby's body and head with clean cloth and 81(57.9%) participants Counsels mother how to bath baby.Generaly 71(50.4%) participants have Knowledge on hypothermia and thermal care and practice 93(66.4%) perform the step or task completely and correctly (table:7).

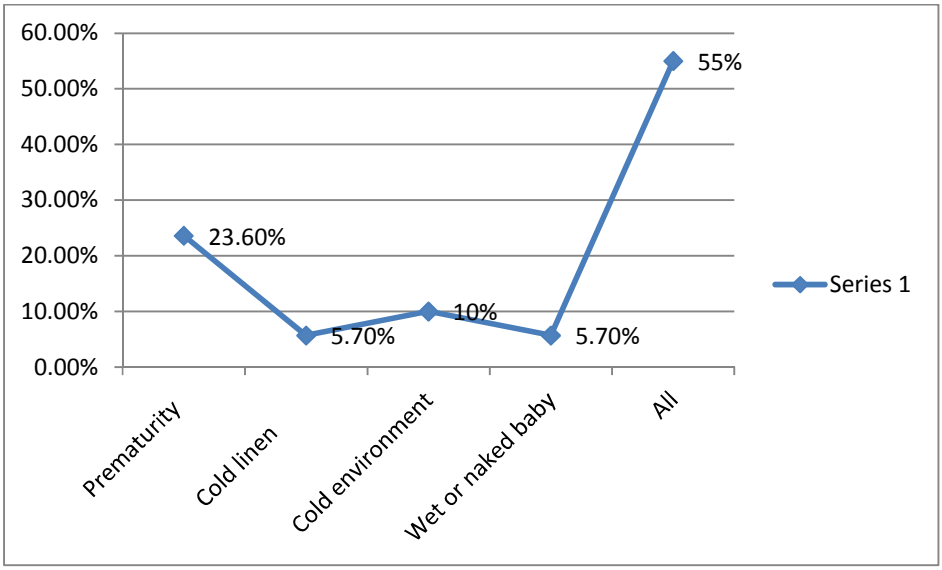


Figure -8: Knowledge of nurses and midwives on Causes of neonatal hypothermia Addis Ababa, governmental Hospitals, 2020

Table-7: Knowledge and practice of nurses and midwives on neonatal hypothermia Addis Ababa, governmental Hospitals, 2020

Variable	**Frequency (N=140)**	**Percent**
Knowledge of the protective methods Hypothermia newborn		
immediately drying	108	77.1%
allowing skin-to skin contact	109	77.9%
early bathing	10	7.1%
Knowledge on time bathing newborn baby		
Before 24 hour delivery	19	13.6%
After 24 hour of delivery	114	81.4%
I do not know	7	5.0%
practice on hypothermia and thermal protection		
Removes wet cloth we used to dry the baby	124	88.6%
cover the baby's body and head with clean cloth	127	90.7%
Counsels mother how to bath baby	81	57.9%
Thermal care practiced	93	66.4%

5.7. Knowledge and practice of initiation of breast feeding

Based on Knowledge on the time initiation of breast feeding 100(71.4%) answered Within the first hour of delivery and the rest 40(28.5%) answered after 1 hours of delivery (table:8). regarding to advantage of early initiation of breast feeding 107(76.4%) participants thought that Prevents from hypoglycaemia, 91(65%) to Enhances bonding of mother and baby, 88(62.9%) Prevents infection and 78 (55.7%) Prevents from hypothermia (figure:10).

On the advantages of colostrums 127(90.7%) participants thought that gives important nutrients to the baby and 111 **(**79.3%) to Protection from infection. Based on a practice on initiation of breast feeding 124(88.6%) participants Initiates breast feeding within 1 hour and 93(66.4%) participants Helps mother and baby for Breastfeeding (table:8).

Generally 99(70.7%) of participants have Knowledge Initiates breast feeding within 1 hour and 90 (64.3%) participants practiced Initiates breast feeding within 1 hour.

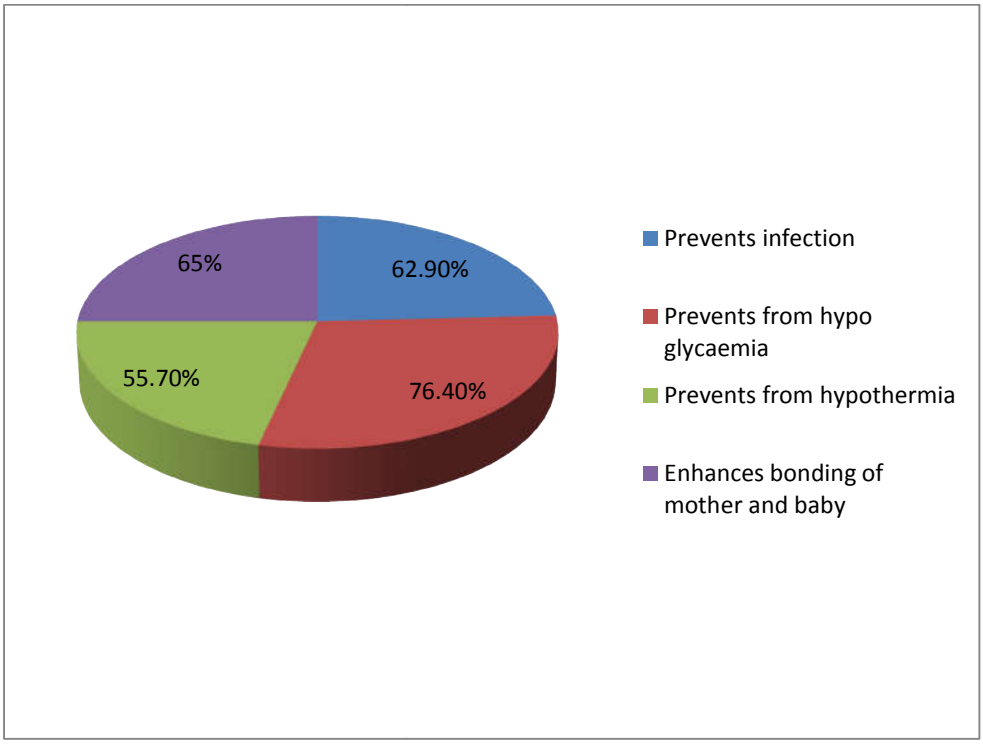


Figure -9: Knowledge of nurses and midwives on advantage of breast feeding Addis Ababa, governmental Hospitals, 2020

Table-8:Knowledge and practice nurses and midwives on initiation of breastfeeding in the first one hour in Addis Ababa, governmental Hospitals, 2020

Knowledge on the time initiation of breast feeding		
Variable	**Frequency (N=140)**	**Percent**
after 1 hours of delivery	40	28.5%
Within the first hour of delivery	100	71.4%
Knowledge on advantages of colostrums		
Protection from infection	13	9.3%
Gives important nutrients to the baby	29	20.7%
All	98	70%
practice on initiation of breastfeeding		
Initiates breast feeding within 1 hour	124	88.6%
Helps mother and baby for Breastfeeding	93	66.4%

5.8. Knowledge and practice of vitamin k administration and eye care

Out of 140 particepants on knowledge of prevention of bleeding 122(87.1%) answered vitamin k, 14(10.0%) breaset feed the child and the rest 4(2.9%) answered that not necessary to give anything to prevent neonatal bleeding. According to practice 137(97.9%) participants gvie Vit K intramuscularly, Generally 124(88.6%)of participants have Knowledge and 137 (97.%) practiced on Vit K administration (table:9).

When we come to eye care in the advantage of eye ointment 125(89.3%) participants answererd to prevent infection, 12(8.6%) to prevent bleeding and 3(2.1%) to prevent STI. According to practice 133(95.0%) Applies one drop Tetracycline 1% ointment to each eye. outof these 133

participants 124(88.6%) apply the droplet properly. Generally 125(89.3%)of participants have Knowledge on eye care and 126(90.0%) participants practiced eye care (table:9).

Table-9: Knowledge and practice on nurses and midwives on vitamin k administration and eye care

Knowledge on method of prevention bleeding in newborn		
Variable	**Frequency(N=140)**	**Percent**
Breastfeed the child	14	10.0%
Not necessary to give anything	4	2.9%
Give vitamin K	122	87.1%
Knowledge on advantages of eye ointment		
To Prevent infection	125	89.3%
To prevent bleading	12	8.6%
To prevent STI	3	2.1%
practice of eye care and vitamin k		
Applies one drop eye ointment to each eye	133	95.0%
The tip of the tube does not touch the eye	124	88.6%
Vit K Given	137	97.9%

5.9. Knowledge and practice of immunization and place identification

Only 68(48.6%) of newborn babies were geting OPV and BCG before discharge and Place identification bands placed on the wrist and ankle of 103(73.6%) of newborn babies (Figure-11).

5.10. Knowledge and practice of weight the newborn and record all observations

99 (70.7) participants have a Knowledge on birth weight to which weight is low and which is high. Based on pratice 137 (97.9%) participants measure the Weight of the baby. regarding to Recording all care given on the birth record 124(88.6%) Record completly (Figure -11).

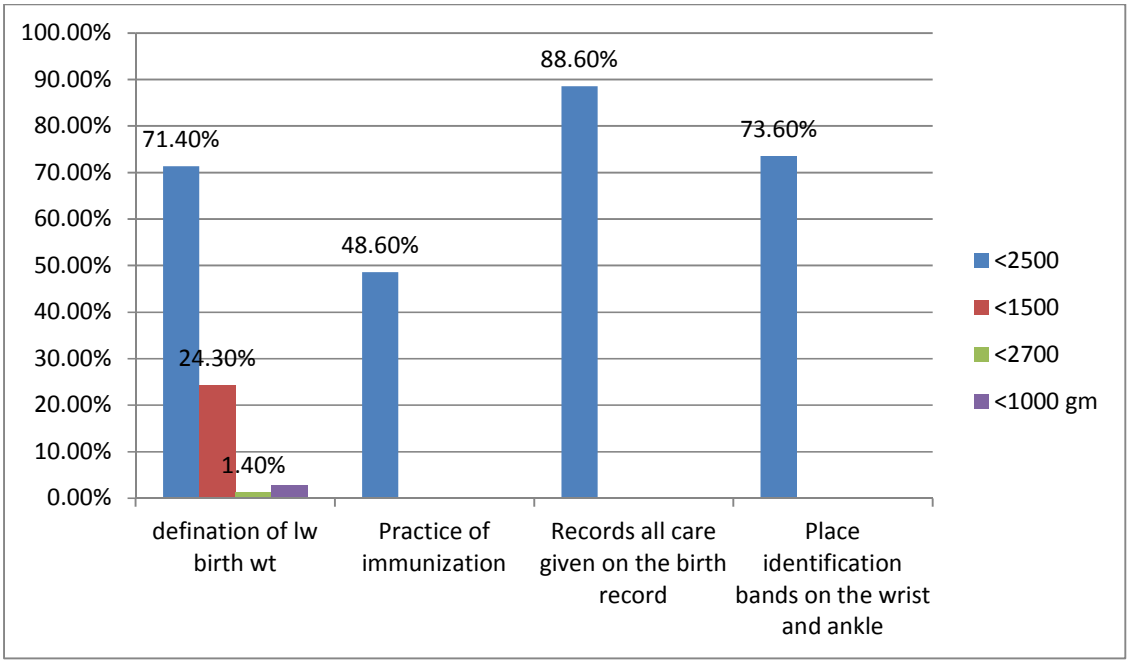


Figure -10:Knowledge and practice of nurses and midwives on immunization, place identification bands on the wrist and ankle and Records all care given in Addis Ababa, governmental Hospitals, 2020

5 .11. Factors associated with essential newborn care knowledge and practices

In bivariate analysis on Knowledge , the two Variables facility and Availability of drugs and equipments showed association with outcome variables at **p<0.05.** . but the association was insignificant so adjusting for possible confounder in crude analysis, all participants was found on association significantiy. after adjusment the facility (p=0.01) Addis Ababa health buro participants more likely Knowledgeble than federal health buro participants [COR (95%CI)2.98 (1.33-6.67)] and the association participants who have Availability of drugs and equipments (p=

0.03) 2.20 times more likely Knowledgeble than who was not avaliability of drugs and equipments in facility[COR (95%CI)2.20 (1.06-4.55)].

on practice of essential newborn care sex, in-service training and Knowledge on essential newborn care showed association with outcome variables at **p<0.05** in the bivariate analysis.but the association was insignificant so adjusting for possible confounder in crude analysis, all participants was found on association significantiy. after adjusment sex (p=.05)females are 1.98 times more likely practiced than males[COR (95%CI)1.98(1.01-3.88)], in-service training(p=.00) the essential newborn care practice participants who get training is three times more likely higher than the participants did not get training [COR (95%CI) 3.825 (1.76-8.30)] and Knowledge on essential newborn care (P=0.02) the essential newborn care practiced more likely by Knowledgeble than not Knowledgeble nurses and midwifes [COR (95%CI) 2.25(1.14-4.44)]. the **p-value < 0.025** were selected for multivariable logistic regression that had received in-service training and Knowledge on essential newborn care was selected from practice (table-10).

Table-10: Multivariate analysis of variables with practice of newborn care, among nurses and midwives working in Addis Ababa, governmental Hospitals, 2020

Variables	**Good Practice**	**Poor Practice**	**COR (95%CI).**	**P-value**	**AOR(95% CI)**	**P-value**
Knowledge on Enc						
Yes	44	26	2.26(1.15-4.44)	.02	2.01(.99-4.06)	.05
No	30	40		.03		
in-service training					3.54(1.61-7.77)	.00
yes	34	12	3.82(1.763-8.301)	.00		
no	40	54		.00		

6. DISCUSSION

Out of 140 participants 70(50.0%) have a good knowledge and the rest 70(50%) have poor knowledge. when we come to practice 74(52.9%) participants practiced well but the 66(47.1%) didn"t particed well on essential newborn care.A study conducted in Khartoum, showed that, study population had a fair knowledge level (50.6%), their performance level of practices was poor (41.1%) towards immediate care of the newborn (6).

A study conducted in Tigray regional state, show that 64.8% had good knowledge and 59.8% of the respondents had a good level of essential newborn care practice (24). According to a study conducted in jemma 52.2% and 47.8% of the respondents had good and poor knowledge respectively. The mean score of practice was 32.82 and 51.1% and 48.9% of the respondents had good and poor level of practice respectively (25).

when we compare the overall knowledge and practice of essential newborn care we are almost similar with Khartoum in knowledge and higher in practice. and also we are similar with Jimma and lower than Tigray in both knowledge and practice.

In this study 82(58.6%) have knowledge on skin to skin contact and 125(89.3%) practiced Keeping baby warm by putting skin-to-skin contact with the mother. when we compared with study conducted in Afar 43.7% have knowledge on Skin to skin contact and 282 (79%) of the study participants kept baby in skin-to-skin contact with mother (4). A study conducted in Tigray show that newborn About 151 (84.4%) study participants performed skin-to-skin contact with the caregiver of the newborn (24). comparatively higher than similar study done in Afar in both and in Tigray in pactice.

On the other hand in our study 83(59.3%) have the knowledge that newborn should kept immediately after birth On the mother’s abdomen. The study finding is comparatively lower than similar study done in Khartoum and Tigray by the range 78.1% and 83% respectively.

In our study participants responded that the advantage of early initiation of breast feeding in which 107(76.4%) said that it prevents the newborn from hypoglycemia and 111(79.3%) of participants know the importance of colostrum on preventing new-born baby from infection. 100(71.4) of respondants were aware the recommended time of initiation of breast feeding(with

in one hour after delivery). This study result compared with the study done in Tigraye and Jimma in use of colostrum to prevent infection our study greater than the study in Tigray which is 61.9% and lowerthan Jimma which is 75%. In the use of breast feeding to prevent hypoglycemia we are greaterthan Tigray which is 66%. In the last on the recommended time we are lowerthan both Tigray and Jimma whose range is 93.2% and 86% respectively.

In our study 78(55.7%) have a knowledge and 77(55%) have practice on initiation of breathing. According to a study conducted in India, the mean score for knowledge and skills in neonatal resuscitation was 76% and 24% respectively(26). study conducted in Afghanistan 66% knowledge and 83% of felt very confident in their ability to perform newborn resuscitation (27). study conducted in Ethiopia south wollo show resuscitation were inadequate. Only 32.9% and 24.5% of the participants had good knowledge and practice towards resuscitation (28). So based on this when we compared with India we are almost similar by knowledge but we are higher in practice. And also we are lower than Afghanistan and higher than Wollo in both knowledge and practice.

In this survey 78.6 % of respondants have a knowledge on cord care and 77% of respondants clamp the cord aproximately 1-3 after the birth and 71.4% of respondants used sterile glove and scissor .In general our study 100 (71.4%) have knowledge and 58(41.4%) have practiced on infection prevention.

A study conducted in Khartoum 63.9 % have Knowledge regarding infection prevention and 35.4% of them clamps the cord approximately 2-3 minutes after birth and 83.3 % of nurse-midwives use sterile scissor during cutting the cord(6). So we are higher than in knowlegde of infection prevention & cord care practice and lower than in infection prevention practice.

In our study 125(89.3%)of participants have Knowledge on eye care and 126(90.0%) participants practiced on eye care by applied tetracycline eye ointment. study conducted in Afar 38.8% participants had knowledge on Prevent eye infection. In eye ointment our study is better than the study conducted in Afar in both knowledge and practice.

In our study 124(88.6%)of participants have Knowledge and 137 (97.%) practice on Vit K. According to the study conducted in Afar, 60.8% had Knowledge on vitamin K and 62.7% practiced on vitamin K administration. as study condcted in Tigray (66.2%) give Vitamin K IM

on anterior mid-thigh (31). Based on this our study is better than the study inTigray in practice and Afar in both knowledge and practice.

According the to study conducted in Afar, 63.9% had Knowledge on immunization and 46.5% had practice the recommended immunization (Oral Polio Vaccine (OPV0) and Bacillus Calmette-Guerin (BCG) vaccine) immediately after birth (4). According the study conducted inTigray About 146 (99.3%) of participants in this study were not practiced to put baby identification bands on the wrist and ankle after delivery (29). Only 68(48.6%) of newborn babies were geting OPV and BCG before discharge and Place identification bands placed on the wrist and ankle of 103(73.6%) of newborn babies.when we compare our study with the study conducted in Afar and Tigray our sult is better than Tigray in identification and found to be similar in immunization.

99 (70.7) participants have a Knowledge on birth weight to which weight is low and which is high. based on pratice 137 (97.9%) participants measure the Weight of the baby. regarding to Recording all care given on the birth record 124(88.6%) Record completly.

According the study conducted in Afar 54.9% and 92.3% participants had Knowledge and practice on weighing the newborn care respectively(4).According to the study conducted in Tigray 55.1% and 2.7 % of participants had Knowledge on Weighing the newborn and on Recording recpectively (29).

When we compare our study with the study conducted in Afar and Tigray about knowing which weight is low and which is high and recording all care given on birth we have better knowledge and practice than both Afar and Tigray.

In our study on Knowledge of facility and Availability of drugs and equipments showed association insignificantly, so adjusting for possible confounder in crude analysis, all participants was found on association significantiy. after adjusment the facility (p=0.01) Addis Ababa health buro participants more likely Knowledgeble than federal health buro participants [COR (95%CI)2.98 (1.33-6.67)]. According the study conducted in Uganda level of care, about 44.1% of health workers of health center levels III/ II and 50% of hospital/ health center IV were considered to have adequate knowledge in immediate newborn care. In both studies conducted in us and Uganda the knowledge was associated with facility.

According to our study association participants who have Availability of drugs and equipments (p= 0.03) 2.20 times more likely Knowledgeble than who was not avaliability of drugs and equipments in facility[COR (95%CI)2.20 (1.06-4.55)]. And the study conducted in Tigray availability of materials (like guide lines, drug and vaccine, etc.) were found to have a significant association with participants' level of knowledge of ENC at a p-value of ≤ 0.2. however in multivariable logistic regression, unavailability of adequate materials (like guidelines, drug, etc.) was significant. Unavailability of adequate materials 2.4 times higher to had poor knowledge (AOR = 2.4, 95% CI (1.12, 5.16)). On avaliabilty of equipments and drugs, it was associated with knowledge in our study and Tigray.

In our study in-service training(p=.00) the essential newborn care practice participants who get training is three times more likely higher than the participants did not get training [COR (95%CI)3.825 (1.76-8.30)]. study condacted in Tigrsy training status was significant. Those who trained ENC 2.09 times higher to had a good level of practice (AOR = 2.09, 95% CI (1.08, 4.02)) (24).as study condacted in Afar receiving newborn care training [AOR: 0.40; 95% CI (0.23,0.70) and working in hospitals [AOR: 8.56; 95% CI (2.39, 30.63)] were positively associated with good newborn care practices (4). In service-training the study conducted in Tigray, Afar and us showed the association of practice with service-training.

7.CONCLUSION

The present study indicated that the level of comprehensive essential newborn care knowledge and practice is not good enough. Although the population they have less knowledge on hypothermia and thermal protection like initiation of breathing,they have good knowledge on eye care and vitamine k. In practice the study population had poor infection prevention practice like hand washing before procedure and initiaton of breathing but they have good practice on skin to skin contact like giving of vitamin k and on weight.

From all participants 47(33.6%) gat service training on immediate or essential newborn care but 93(66.4%) didnot gat. The Study result showed presence of knowledge and practice gap of essential newborn Care so strengthen in-service training is necessary on nurses and midwives on essential newborn Care

8. RECOMMENDATIONS

Based on the study results the following recommendations were forwarded: Federal ministry of health, Adiss Abeba health Bureau and NGOs those are working in this area were encouraged to Strengthen practical based in-service training given to nurses and midwives on ENC including newborn resuscitation, infection prevention and in all components of essential newborncare.Give attention to the avaliability of equipments and vaccine and drugs.Give Priority for those who have training on delivery and newborn care and for those have better educational level on the assignment of nurses and midwives working in delivery room and motivation should be there for those have good performance .Conduct further observational study on quality and level of essential newborn care practice on delivery room.

Give continuous observation annd monitring for midwifes and nurses on ENBC practice.

9.STRENGTH

The study integrated midwifes and nurses who worked in delivery room. The study also covers wide area of essential newborn care components which are basically practiced by midwifes and nurses at delivery room such as: initiation of breathing, initiation breast feeding, cutting the cord,infection prevention.

10.LIMITATION

There were some limitations to this study. The study did not provide the qualitative perspectives on essential newborn care practice and its predictors, Since it is cross sectional study it did not addressed the cause and effect relationship of the factors and the outcome variables. In addition the participants may practiced in perfect manner due to my attention their practice may not be the same with other days so it affects the realiability of study. And also due to the existance of covid 19 we are limited from getting my adviser face to face, fear of co-operating with freinds to share ideas and participants to collect the data.In addition lack of transportation, budget and time.

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ANNEX

Annex -I-: Participants information sheet

How are you? My name is----------I am working as data collector for the study being conducted in this hospital by **Lemlem Berihu** she is studying for her master's degree at Addis Ababa University requirement for master of Neonatal Nursing. 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 knowledge, practice and associated factors among midwives and nurses in governmental hospitals of Addis Ababa, Ethiopia,

Purpose of the study: To assess essential newborn care knowledge, practice and its associated factors among Midwives and nurses in governmental hospitals of Addis Ababa, Ethiopia,

Study area and period: the study will be conducted in four selected public hospitals in Addis Ababa, from April- May, 2020

Study procedure: First of all we selected you to take part in this study used consecutivly.there are 43 questions self adminstred questioner and Observational checklist will be filled by observing you.

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

Benefits of the study: 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 bring change in quality of health service to newborns.

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

Rights of participants: If you have any questions about the study please be free to ask and contact me. Your participation in this survey is voluntary and you can choose not to answer any individual question or all of the questions.

Contact address: If there is any questions or unclear idea any time about the study or the procedures, contact and speak to Principal investigator With phone number **0921887179** or e-mail address **senumarlemlem@gmail.com**

Annex -II-:participant 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.

Do you agree to proceed? Yes __ No __Record Number_____ Name of facility_

supervisor name) _____sign _____date_____

Data collector name_____ sign _____date__

Part I- Socio-demographic information among midwives and nurces Addis Ababa, 2020

Ser. No	**Question**	**Possible response**
1	Sex	1. Male 2. Female
2	Age	----------in year
3	Religion	1. Orthodox 4. Catholic 2. Muslim 5.Others(specify)_____ 3. Protestant
4	Marital status	1. Single 4. Widowed 2. Married 5. Separated 3. Divorced
5	Ethnicity	1. Amhara 3. Tigre 2. Oromo 4.Others(specify)_____
6	Educational level	1. Diploma 3.Second Degree 2. first Degree
7	What is your profession?	1.Nurse 2.Mid wife 3. Both
8	Monthly Salary	----------

Part II – institutional and health care workes related questions

1	What is your work experience of delivery services?	_____
2	Do you think you have over work load?	1.Yes 2. No
3	If yes for Q2, for how many newborn give essential newborn care daily?	_____
4	Did you receive in-service training on immediate or Essential newborn care?	1.Yes 2.No
5	If yes for Q4, how many times have you got In-service training?	_____
6	What **drug**s and **vaccines** for new born care are available in your health facility ?	_____,_____, _____,_____,

Part III-: questionnaire on knowledge essential newborn care among nurses and midwives Addis Ababa,2020.

N.B More than one response is possible if you have more than one answers for one item of question.

1	When should a skilled person be present at a birth?	1.If problems occur 2.At every birth 3.Other (specify)----------
2	What time start essenital newborn care?	1.before birth 3.after birth

		2.during birth
3	Where newborn should kept immediately after birth?	1.Beside the mother 2.On radiant warmer 3.On the mother's abdomen 4.On newborn bed /table 5. All
4	What are the advantages of skin-to-skin contact?	1.prevent hypothermia and help to stay warm 2.Help expel placenta 3.Enhance early breast feeding and bonding 4.Other (specify)----------
	A baby who is not breathing well will be	1.Chest Retractions 2.Gasping 3. Not breathing at all 4. Others (specify)----------
6	How long should you wait to clamp or tie the umbilical cord of a crying baby?	1.clamp or tie Immediately 2.Wait 1 to 3 minutes to clamp or tie and cut the cord. 3. Other (specify)----------
7	How do you prevent complications of new born?	1.by drying baby and eye care 2. by assessing breathing 3. by cord cutting and care 4. by early initiation of breast feeding

		5. All
8	What are the component of essenital newborn care those you know?	1. Weigh baby 3.Cord cutting 2. Dry baby 4 . Assessing breathing
9	What are the complications/problems new born?	1. Hypothermia 3. Infection 2. Asphyxia 4. Others (specify) ----------
10	How do you prevent Hypothermia?	1. immediately drying 2. allowing skin to skin contact 3. early bathing 4.Other(specify)----------
11	What is the recomended position the baby's head During ventilation ?	1.A flexed position of the head 2. Slightly extended position of head 3.Hyper extend extended position of head 4. other(specify)----------
12	If a baby is not breathing well after drying, clearing the air way and rubbing the back once or twice, what you should give?	1. more stimulation to breath 2. Call a help and start resuscitation 3.Start cardio-pulmonary resuscitation 4. All
13	what is the normal respiratory rate in a newborn baby?	1. 65 breaths per minute

		2. 40 breaths per minutes 3. 80 breaths per minute 4. All
14	When we should initiate breast feeding for new born baby?	1. after 1 hours of delivery 2. Within the first hour of delivery 3. Other (specify)----------
15	What is the normal APGAR score?	1.0- 3 3.7-10 2.4-6 4.Others (specify)------
16	Do you know the advantage of early initiation of breast feeding?	1. Yes 2. No
17	If yes, What are the advantages of early initiation of breast feeding?	1. Prevents infection. 2. Prevents from hypo glycaemia 3. Prevents from hypothermia 4. Enhances bonding of mother and baby 5. all
18	What is the recommended action to prevent bleeding in newborn?	1.Breastfeed the child 2.Not necessary to give anything 3.Give vitamin K 4.Other (specify)----------
19	When do you bath the immediately newborn baby?	1. Before 24 hour delivery 2. After 24 hour of delivery 3. I do not know

20	What are the Causes of neonatal hypothermia?	1. Prematurity 2. Cold linen 3. Cold environment 4.Wet or naked baby 5.All
21	What are the advantages of Provide eye ointment?	1.ToPrevent infection 2.To prevent bleading 3.Others (specify)----------
22	How do you define low birth weight? It is a weight of	1.<2700gm 3.<1500 gm 2.<2500gm 4.<1000 gm
23	What are the advantages of colostrums?	1. Protection from infection 2. Gives important nutrients to the baby 3. Both 4. Others (specify)----------
24	When should you wash your hands?	1.When they look dirty 2.Before and after caring the baby 3.after removing the giove 4. 2 and 3 5. All
25	What is the normal tempreature of newborn baby?	1.36^0C -37.5^0C 3. 35^0C-36.5^0C 2 .36.5^0C-37.5^0C 4. Others (specify)

26	A baby cries after birth and then breathes quietly and regularly What should you do?	1.Give routine care 2.Provide help to breathe. 3. Others (specify)----------
27	How long should it take to dry the baby, clear the airway, stimulate breathing?	1.Less than 1 minute 2.Two minutes 3.Others(specify) ----------
28	Suctioning for a long time or suctioning deeply can cause?	1.Make a baby breathe 2.Keep a baby from breathing 3. Others(specify) ----------

Part-: IV Observational checklist for practice of essential newborn care among nurses and midwives at Addis Ababa,2020.

Directions:

Rate the performance of each step or task using the following rating scale:

= Performs the step or task completely and correctly.

X= Is unable to perform the step or task completely or correctly not observed.

	QUESTION/CHECKLIST	**SCORE**	
		Per Forms = ✓	**NOT Per Forms = X**
	Part-I Preparation of equipment to receive the newborn		

1	Delivery room clean		
2	Cord tie and clamp prepared		
3	Baby identification material prepared		
4	Clean Suction device prepared		
5	Clean/ dry towel prepared		
6	Neonatal ambo bag and mask prepared		
7	soap and water avalable		
	Part-II immediate care of newborn		
8	wash your hand with soap and water before newborn care		
9	Puts on sterile glove		
10	the baby on mothers abdomen/chest immediately after the baby delivered		
11	immediatly dry and stimulate the hole body		
12	Removes wet cloth used to dry the baby		
13	cover the baby's body and head with clean cloth.		
14	check if the baby is crying while drying it.		
15	if the baby not crying or breathing well within 30 seconds of birth, calls for help, clamps and cuts the cord, takes the baby to the table designated for steps for resuscitation		
16	use Clean appropriate size of mask if there is neonatal resuscitation		
17	Ties the cord one at two fingers from the baby's abdomen, milks the cord away from baby and places the second tie at two fingers from the first tie.		
18	Cuts the cord after 1-3 minutes with sterile scissors or surgical blade.		
19	Explains to mother not to put anything on cord stump		

20	Take Apgar Score within 1st and 5th minutes		
21	Place newborn's identification bands on the wrist and ankle		
22	Initiates breast feeding within 1 hour after delivry		
23	Helps mother and baby get into a good position and attaches for Breastfeeding		
24	Mother and baby kept together in labour room		
25	Give Vit K		
26	Applies one drop Tetracycline 1% ointment to each eye		
27	The tip of the tube does not touch the eye of the baby		
28	Weighs the baby		
29	Counsels mother how to bath baby		
30	give OPV and BCG for newborn before discharge?		
31	Counsels mother newborns danger sign before discharge.		
32	Records all care given on the birth record		