ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCE
SCHOOL OF ALLIED HEALTH SCIENCE
DEPARTMENT OF NURSING AND MIDWIFERY

KNOWLEDGE AND PRACTICE OF IMMEDIATE NEWBORN CARE AMONG MIDWIVES IN GOVERNMENTAL HEALTH FACILITIES AT CENTRAL ZONE, TIGRAY REGIONAL STATE, NORTH ETHIOPIA.

BY
TESFAY TSEGAY (BSC)

‘‘A thesis submitted to the school of Graduate Studies of Addis Ababa University, in partial fulfilment of the requirements for the Degree of Masters of Science in Paediatrics and Child Health Nursing in Department of Nursing and Midwifery’’.

JUNE, 2015
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ADVISOR

MRS. RAJALAKSHMI MURUGAN (RN, RM, BSC, MSC, ASSISTANT PROFESSOR AND PHD FELLOW)

JUNE, 2015

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Approval by the Board of Examiners

This Thesis by **Tesfay Tsegay Gebru** is accepted in its present form by the Board of Examiners as satisfying Thesis requirement for the degree of Masters of Science in Paediatrics and Child Health Nursing.

Internal Examiner

Sr Tsehay Shimelis	MSc Nurse	_____
Full Name	Rank	Signature & Date

Research Advisor/Supervisor

Mrs Rajalakshmi Murugan	Ass't professor, PhD Fellow	_____
Full Name	Rank	Signature & Date

School/Department Head

Ato Daniel Mengistu	MSc Nurse, Ass't Professor	_____
Full Name	Rank	Signature & Date

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List of acronyms

BMC----------Biomedical central

BSc----------Bachelor of Science

CI----------Confidence Interval

HC----------Health center

HMD----------Hemorrhagic Disease of the Newborn

HOSP----------Hospital

IM ----------Intramuscular

LBW----------Low birth weight

MAISHA----------Mothers and Infants, Safe, Healthy, Alive

MDG----------Millennium development goal

NICU----------Neonatal intensive care unit

NRP----------Newborn resuscitation practice

PI----------Principal Investigator

SPSS----------Statistical Package for Social Science

TNAI----------Trained nurses Association India

UNICEF----------United Nations International Children's Emergency Fund

USA----------United Nation of America

Vit. K----------Vitamin K

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Abstract

Background: Newborn is considered to be tiny and powerless, completely dependent on other for life within one minute of birth the normal new born adapts from a dependent fetal existence to an independent one; capable of breathing and carrying on life process. The first hours are crucial because multiple organ system is making the transition from intrauterine to extra uterine functions. The care given immediately after birth is simple but important.

Objective: To assess Knowledge and practice of immediate newborn care among Midwives in governmental health facilities at central zone, Tigray regional state, north Ethiopia, from January- June, 2015.

Methods: An institutional based cross-sectional quantitative descriptive study design was used for this study. Sample size was calculated by using sample correction formula and sample size was 150 midwives. In Central zone all woreda health facilities were included in the study. Final study subject were selected using non probability convenience methods. The data was collected after pre-tested the questionnaire. Observation method was used standardized checklist adopted from save the children international followed by interview. The collected data was coded and entered to EPI-Info version 3.5.1 and data was exported to SPSS version 21.0. Finally, result was presented in texts, graphs and tables.

Result: Out of 150 samples size 147 were participated in the study making the response rate of 98%. Of these, 59.9% midwives were working in health center, 99.3% were ethnicity of Tigray and 79.6% were females. 23.8% respondents were in the age group of 25-29 and the mean age of respondents was 34.1 years. Among the total participants, 99.3% of midwives were applied eye ointment to immediately born baby. The general knowledge of participants on immediate newborn care was 17.7% good and 25.2% poor. Regarding immediate newborn care practice 52.4% were practiced but remaining 47.6% of respondents were not practiced. Work environment was significantly associated with practice of immediate newborn care. Midwives working in health center were 82% lower odds of newborn care compared to those working in hospital (p=0.000, OR=0.18 (0.07, 0.43)

Conclusion and Recommendation: Most midwives have received in-service training on immediate newborn care, even though the Study result showed presence of knowledge and practice gap of care given to newborn baby. So it is necessary to strengthen in-service training given to midwives on immediate newborn care periodically. Further study on knowledge and practice of midwives regarding immediate newborn care is recommended.

Keyword: Knowledge, practice and newborn care

CHAPTER –ONE: INTRODUCTION

1.1. Background of the study

Newborn is considered to be tiny and powerless, completely dependent on other for life within one minute of birth. The normal new born adapts from a dependent fetal existence to an independent one; capable of breathing and carrying on life process. Thus these first hours are crucial because multiple organ system is making the transition from intrauterine to extra uterine functions (1).

The birth of a baby is one of life's most wondrous moments. Few experiences can compare with this event. Newborn babies have amazing abilities, yet they are completely dependent on others for every aspect - feeding, warmth, and comfort. In the first hour or two after birth, most babies are in an alert, wide awake phase. This offers a wonderful opportunity for parents to get to know their new baby (2).

The transition from fetus to newborn infant is the most dramatic physiologic change that occurs in the human life span. The fetus that received all of its oxygen and nutritional needs via the placenta must now use two entirely different, essentially dormant organ systems to meet these needs (3).The newborn begins to breathe and cry almost immediately after birth, indicating the establishment of active respiration. Aeration of the newborn lung is not the inflation of a collapsed structure, but the rapid replacement of bronchial and alveolar fluid by air (4).

Although a good start in life begins well before birth, it is just before, during, and in the very first hours and days after birth that life is most at risk. Babies continue to be very vulnerable throughout their first week of life, after which their chances of survival improve markedly.
(5). Babies die after birth because they are severely malformed, are born very prematurely, suffer from obstetric complications before or during birth, have difficulty adapting to extra uterine life, or because of harmful practices after birth that lead to infections (6).

Immediate care at birth is very important. The care given immediately after birth is simple but important. Remember that the baby has just come from the mother's uterus. It was warm and

quiet in the uterus and the amniotic fluid and walls of the uterus gently touched the baby. Immediate newborn care has ten steps.
Delay bathing of the baby for 24 hours after birth. Do not *remove vernix and p*rovide three postnatal visits during at 6 - 24 hours, 3 days and 6 weeks. Clean the newborn of an HIV-infected mother as recommended (7, 8).

Globally, the largest numbers of babies die in South-East Asia Region: 1.4 million newborn deaths each year. Under-five deaths in the world have declined from 12.7 million in 1990 to 6.3 million in 2013. All regions have reduced the under-five mortality rate by more than half since 1990 except sub-Saharan Africa. Of the 20 countries with the highest neonatal mortality rates, 16 are in this part of the world: Nigeria (19%), Democratic republic of Congo (14%), Ethiopia (8%), Tanzania (5%), and Uganda (4%)). Despite this great progress, 6.3 million children died in 2013. Sub-Saharan Africa and South Asia together account for 4 out of 5 under-five deaths. 1 in 11 children born in sub-Saharan Africa still dies before age five, nearly 15 times the average in high-income countries. Each year over a million children who survive birth asphyxia develop problems like cerebral palsy, and learning difficulties (5, 9, and 10).

The first 28 days of life represent the most vulnerable time for a child's survival. Globally, about 44% of underfive deaths occur during this period. For many babies, their day of birth is also their day of death: 1 million neonatal deaths occur on the day of birth and close to 2 million occur in the first week of life (9, 11).

According to MAISHA program in Tanzania, 44 % in 2010 and 86 % in 2012 helps initiate breastfeeding within one hour. End line performance on the immediate essential newborn care steps was similar across levels of health care facility. However, in both years of the assessment, lower-level health facilities were more likely than regional hospitals to promote immediate breastfeeding (12).

According to a hospital base study in Khartoum, Sudan the immediate care of newborn is performed for saving the newborn life so most of the study populations were received in service training courses in the immediate care of newborn (93%), in spite of this; the study populations had poor knowledge regarding care of new born at birth (50.6%) (1).

1.2. Statement of the problem

Although being newborn is not a disease, large numbers of children die soon after birth: many of them in the first week (6). The healthy future of society depends on the health of the children of today. The day of birth is the riskiest time for the baby. A child is about 500 times more likely to die in the first day of life than at one month of age (5).

Care for baby around the time of birth and during the postnatal period is critical but coverage is grossly inadequate. Global progress report reveals a remarkably high degree of variability in the utilization and quality of services provided to pregnant women and their babies. One in three babies (approximately 44 million) entered the world in 2012 without adequate medical support. Coverage of postnatal care for the newborn is less than 50% in many countries with the highest neonatal mortality levels. While evidence shows that initiating breastfeeding within one hour of birth reduces the baby's risk of death by 44%, recent data show that less than half of newborn babies (43%) worldwide receive the benefits of immediate breastfeeding (9).

Nurses' knowledge for immediate care of newborn after birth was 43.5% good & 47.8% poor. More than half (56.5%) respond poorly to mother's questions and majority of them were have poor knowledge regarding care provided for mothers and neonates before discharge. However the total knowledge score was good for less than half of them (48.2%). More than half of nurses (52.6%) have a good knowledge and practice for hand washing, receive the baby and clean the airway, apply Apgar score, clump, sterile the cord, as well as put eye drop to the neonate. Unfortunately majority and/or more than half of them were didn't administer Vitamin K to the baby (69.5%) (13).

In Ethiopia 1 from 17 children dies before the first birthday, and 1 from 11 children before the fifth birthday. Childhood mortality is higher in rural areas than in urban areas. The neonatal mortality and post-neonatal mortality rate was 37, and 22 deaths per 1,000 live births (14).

Federal ministry of health is committed to achieve the Millennium development goal set by United Nation to improve child health over the period 1990 to 2015. Ethiopia implemented multiple high impact interventions to remove bottlenecks hampering access to safe childhood

services like inadequate care at health facilities. Skilled attendance at birth is the most important intervention in reducing childhood mortality (15). The standardized procedure for providing Essential newborn Care is not commonly practiced. This has resulted in serious consequences of unacceptably high neonatal morbidity and mortality in the first 24 hours of life (8).

Even though Ethiopian government invests a lot of funds on maternal and child health, there is still a number of neonatal morbidity and mortality. According to 2011 Federal Ministry of health policy planning directorate health and health related indicators report in Tigray regional state, there were 32,098 live births but unfortunately 11% (3,515) neonates and 0.2% (70) mothers were dead in the health facilities (16). In Ethiopia specifically central zone Tigray regional state there is no clear information regarding the knowledge and practice of midwives towards immediate newborn care. Therefore, the main aim of this paper will be to assess the knowledge and practice of midwives towards immediate newborn care.

1.3. Significance of the study

Even though delivery is attended by diploma and degree midwives, the number of maternal and neonatal institutional death is still unresolved. According to 2011 Federal Ministry of health policy planning directorate health and health related indicators report in Tigray regional state, there were 32,098 live births but unfortunately 11% (3,515) neonates and 0.2% (70) mothers were dead in the health facilities (16).

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. Quality of care by midwives immediately after birth will improve the health of subsequent life times, and benefits family members from medical expense. Therefore the result of this study will be used as baseline information to researchers for further study in the area, provide important information for program managers and policy makers, provide pertinent information for curriculum designers to make necessary amendment and guide governmental and nongovernmental health organizations to focus and train these health care providers.

CHAPTER-TWO: LITERATURE REVIEW

According to a cross-sectional questionnaire based survey in Panchkula district of Haryana, India, (76%) of the study participants knew at least some complications that preterm's are prone to, including hypothermia, infection or hypoglycaemia. Even though 67% had heard about skin to skin contact, only 57% of them knew how to do it and only 5% practiced it (17).

Essential newborn care tasks in the immediate post-delivery period include prevention and management of haemorrhage, thermal care, cord care, early initiation of breastfeeding, eye care and recognition of when to refer. All personnel who have contact in the immediate post-delivery period shall be trained in key tasks (19).

A retrospective chart review of referral hospital of Cameroon records from 1st January 2004 to 31st December 2010 showed that the main causes of deaths were neonatal infections (37.85%), prematurity (31.56%), neonatal asphyxia (16%), and congenital malformations (10.54%) (20).

According to Mothers and Infants, Safe, Healthy, Alive (MAISHA) program in Tanzania, there was not very much difference by level of health facility in all of the immediate essential newborn care (12).

A descriptive non participatory observational research design at university hospital of El-kom minoufiya, Egypt Biosocial characteristics of studied nurses" The mean age were 26.18+6.1, more than half of them (57.1%) were have diploma education, (66.6%) of them were married and about half of them (48.2%) have 1 – 5 years of experience (13).

2.1. Hypothermia and maintenance of warmth

According to MAISHA program in Tanzania, 42 % in 2010 and 77 % in 2012 immediately places newborn on the mother's abdomen, 91 % in 2010 and 95 % in 2012 immediately dries baby with towel, and 93% in 2010 and 93 % in 2012 discards wet towel and covers with dry towel. Although the practice of placing the newborn skin-to-skin on the mother's abdomen

immediately following delivery increased from baseline to end line, mothers and newborns often were separated in the hour following birth. While this study did not allow for a quantification of this practice, newborns were often placed on the same bed with the mother but not skin-to-skin, or were taken away from the mother (12).

In Ethiopia according to the house hold survey from January 4-27, 2012, mothers reported that newborns were dried and wiped before delivery of the placenta for 63.2% of births, and were wrapped for 82.3% of births. The immediate placements of the baby were in a newborn bed/ table (38.3%) or on the mother's chest (21.5%) for facility deliveries. 25.8% of facility births, the newborn were placed in skin-to-skin position at some point following the delivery and only 25.3% of births did the mother report that bathing of the newborn was delayed at least 24 hours (21).

2.2. Initiation of early Breast feeding

Early initiation of breastfeeding provides the baby with colostrums; this offers the newborn protection from infection, gives important nutrients, and has a beneficial effect on maternal uterine contractions early contact (immediately after birth) between the mother and the baby has a beneficial effect on breast-feeding. Breast milk provides optimal nutrition and promotes the child's growth and development. By breast-feeding, a mother begins the immunization process at birth and protects her child against a variety of viral and bacterial pathogens before the acquisition of active immunity through vaccination. Important factors in establishing and maintaining exclusive breast-feeding after birth are: giving the first feed within one hour of birth, correct positioning that enables good attachment of the baby, and frequent feeds (7).

In India after delivery, the practice of keeping the baby with the mother was followed by (53%) respondents while the remaining kept the baby under a radiant warmer. All of them practiced giving colostrums to the newborn baby as the first feed. At least one danger sign was told to the mothers at discharge by (83%) (18).

In Ethiopian according to the house hold survey 2012, only 52.1% of mothers reported that their newborns were breastfed within the first hour after delivery, with similar proportions for both home (50.2%) and facility (56.7%) deliveries. 44.5% of mothers reported that they squeezed out the colostrums before breastfeeding the newborn; this practice was less common

for facility births (30.4%) compared to home births (50.2). A smaller proportion of mothers (12.4%) reported feeding their newborns food or liquid other than breast milk in the first two days. Among those newborns 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%) (21).

2.3 Airway clearance and neonatal resuscitation

A pre-experimental study conducted at the trained nurses Association of India, showed adequate knowledge and skill of health professionals is essential for improving the neonatal outcome. Training programmes is the key strategy in promotion of health care services. The findings of the present study suggest the need for implementation of comprehensive training programme on newborn resuscitation practice (NRP) to improve the practices of immediate newborn care in labour room. Regular training of nurses may possibly have positive effect in reducing undesirable health events especially in resource constrained settings (18).

According to MAISHA program in Tanzania, skills assessments of health care providers were conducted and 45 % in 2010 and 37 % in 2012 Clears airway; stimulates baby; places newborn on warm and clean surface, head in slightly extended position (all tasks correctly performed), Places correct size mask covering chin, mouth, and nose; checks seal by ventilating twice and observes chest rise, ventilating at 30–50 breathes/minute (all tasks correctly performed) (12)

2.4 Prevention of infection and cord care

According to the study done in Haryana India, The need of vitamin K for the newborn was known to (76%), while only (55%) practiced it. The main reason for not using vitamin K was the absence of the drug in the Health Center (17).

According to the hospital base study in Khartoum, 83.3 % of nurse-midwives used sterile scissor during cutting the cord, and 63.9 have Knowledge regarding infection prevention (1).

A study of MAISHA program in Tanzania, 100 % in 2010 and 2012 was cuts cord with clean blade. High achievement in cord care and wrapping and drying of the infant was found at both baseline and follow-up. Universal adherence to cord cutting with a clean blade (sterile pair of scissors) was seen in both 2010 and 2012. Delayed cord clamping increased over the two years, by 12% in regional hospitals (p = 0.0001) and 8% in lower level health facilities (p = 0.03) (12).

Household survey in Ethiopia indicates, in home births the cord was most commonly cut with a new razor or blade (88.3%) or a previously used razor (6.2%), while scissors were most commonly used for facility deliveries (65.8%). Although 72.6% of women delivering at home reported that nothing was applied to the newborn's cord after cutting, 21.0% reported that butter was applied to the area. Women who delivered at a facility most commonly reported that nothing was applied to the cord area (47.1%) or that they did not know whether any substance was applied (40.3%) (21).

2.5. Knowledge regarding newborn care

According to pre-experimental study conducted at the trained nurses Association, while comparing the nurses' knowledge on neonatal resuscitation before and after administration of an educational intervention it was observed that in all aspects of neonatal resuscitation nurses had improved their knowledge after administration of an educational intervention (18).

According to the hospital base study in Khartoum, the immediate care of newborn is performed for saving the newborn life so most of the study populations were received in service training courses in the immediate care of newborn (93 %), in spite of this; the study populations had poor knowledge regarding care of new born at birth (50.6%) (1).

According to a descriptive non participatory observational research design at university hospital of El-kom minoufiya, Egypt, knowledge of nurse midwives towards immediate newborn care was good (43.5%), fair (8.7%) and poor (47.8%).

2.6. Newborn care practice

The study done in Haryana shows the practices of the health care personnel who had undergone some special training courses were compared with those who have had no such training. No significant differences were found in any of the practices between the trained and the untrained persons (17).

A descriptive non participatory observational research design at university hospital of El-kom minoufiya, Egypt, shows 52.2% respond to mothers questions appropriately. Also, 69.5% of respondents didn't prepare the newborn or their mother for discharge. However there is no significance difference $P > 0.05$ between nurses' knowledge and practices regarding newborn and mother care after birth (13).

A hospital base study in Khartoum, showed that wipes the eyes and face when the head is delivered (3.1%), after full delivery of the baby, dries the baby while assessing the baby's breathing, 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 (92.7%), If the baby breathing well, place him/her in skin-to-skin contact on the mother abdomen and covers the body (93.8%), and Cuts the cord with sterile scissors between the 2 sterile clamps (1.8 %), taking care to cover the site with sterile gauze while cutting to prevent splashes (65.6 %), Put the identification bands before cutting the cord (2.1%) and Average performance of nurse midwives towards immediate care of newborn (41.1%) (1).

A hospital base study in Khartoum show that knowledge of study population regarding how to practice the newborn care at birth is (50.6%), their skills towards immediate care of newborn (40.1%), that may be due to lack of direct supervision or lack of hospitals protocols that dealing with the newborn care at birth. The nurse midwives skills towards immediate care of the newborn (40.1%) (1).

Conceptual Framework

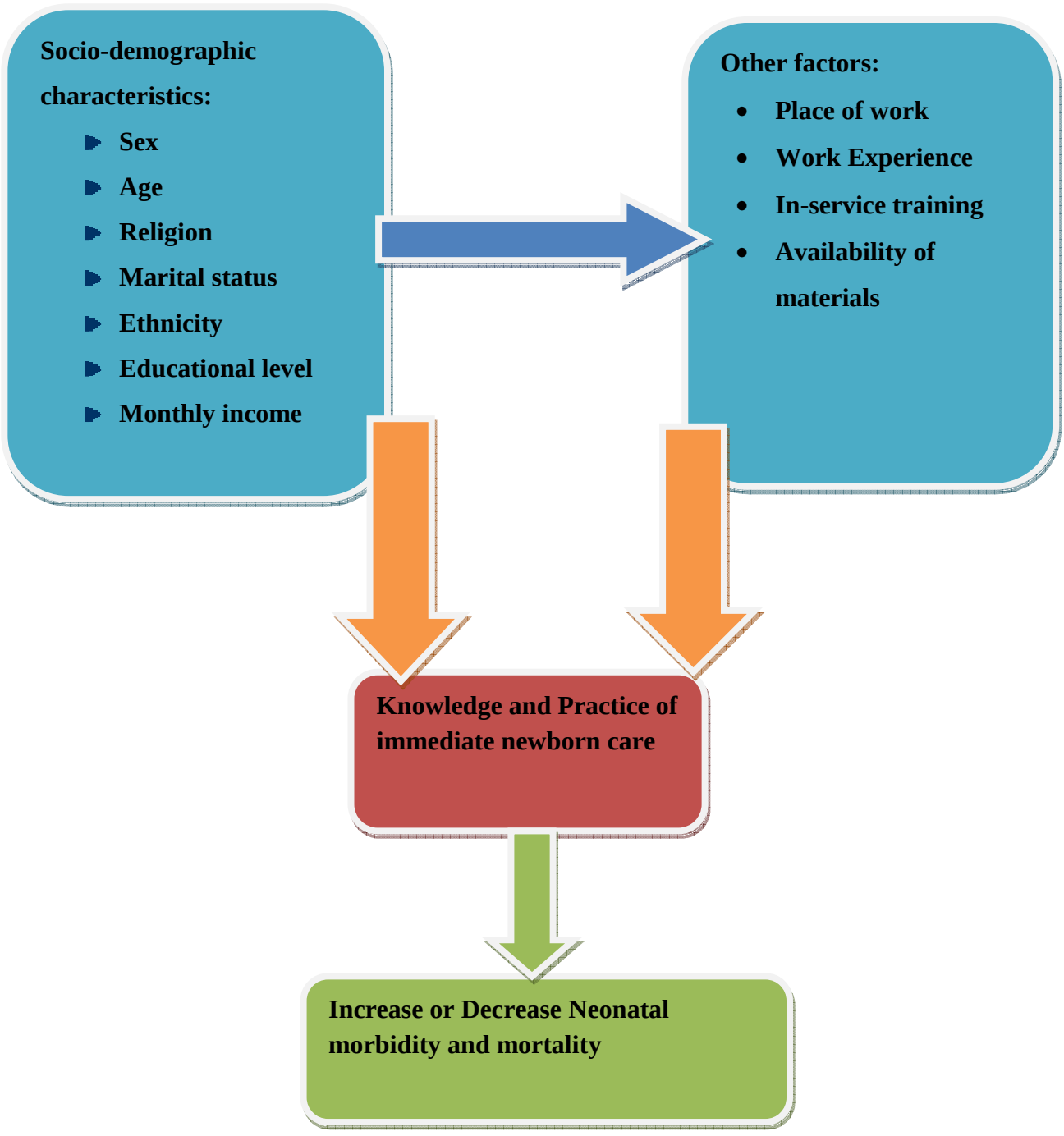

Figure1. Conceptual framework prepared based on review of literature

CHAPTER-THREE: OBJECTIVE

3.1 General objective

To assess Knowledge and Practice of Immediate Newborn Care among Midwives in governmental Health Facilities at Central Zone, Tigray Regional State, North Ethiopia from January-June, 2015.

3.2 Specific objectives

- To assess the knowledge of midwives on Immediate Care of Newborn.
- To assess the practice of midwives on Immediate Care of Newborn.
- To identify the relationship between knowledge and practice of midwives.
- To identify the relationship between practice and socio-demographic characteristics of midwives.

CHAPTER – FOUR: METHOD AND MATERIAL

4.1. Study area and period

The study was conducted in central zone, Tigray regional state, which is located 998 Km to the north of Addis Ababa, the capital city of Ethiopia and 220 km from Mekelle, the capital city of Tigray Regional state. This zone is bounded by Eastern zone to the East, North western zone to the west, Amhara Regional state to the south and Eritrea to the north.

In Central Zone Tigray regional state there are twelve woreda and have a total of 54 governmental health centers and 6 hospitals among the 6 hospitals, one zonal, two district and the rest 4 are primary hospitals and 16 private health facilities which provide health care services to the community. There are also a total of 210 midwives who provide delivery, family planning, antenatal and postnatal (newborn) care.

The study was conducted from January – June, 2015.

Figure 2: Map of central zone, Tigray regional state

4.2. Study design:

An institutional based cross-sectional descriptive study design was used for the study.

4.3. Population

4.3.1. Source Population:

All midwives who provided delivery and immediate newborn care in governmental health facilities of central zone, Tigray regional state.

4.3.2. Study Population

Midwives in governmental health facilities of central zone Tigray regional state who provided delivery and immediate newborn care during data collection time.

4.4. Sampling and Sampling Technique

4.4.1 Sample Size Calculation

A single population proportion formula was used to estimate the sample size and the following assumptions were made: Proportion of knowledge and practice of midwives regarding immediate newborn care 50% (p = 0.5), level of significance 5% (α = 0.05), 95 % confidence level (Z α/2 = 1.96) and absolute precision or margin of error 5% (d = 0.05).

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

Where, n = sample size

p = proportion of knowledge or practice of health care providers (50%)

Z = standard normal distribution curve value for the 95% confidence interval (1.96)

d = the margin of error or accepted error

$$n = \frac{(1.96)^2 * 0.5(1-0.5)}{(0.05)^2}$$

n = **384 health care providers**.

The source population of the study area were 210 Midwives.

Since total study population were less than 10,000, sample size correction formula was used to get the actual sample size (N=210)

$$nf = \frac{n}{1 + \frac{n}{N}}$$

Where, **nf** = Final sample size

n = first calculated sample size

N = Source population

n_{final} =384/(1 +384/210)=**136 health care providers**

Adding a 10% allowance for a non-response rate, the total sample size was 14+ 136=**150**

4.4.2. Sampling procedures

Central zone Tigray regional state has twelve woredas. All health facilities of the 12 woreda were included in the study. Final study subject was selected using non probability convenience methods. Those Midwives found working in the health facilities during data collection time was included to the study until the sample size fulfilled.

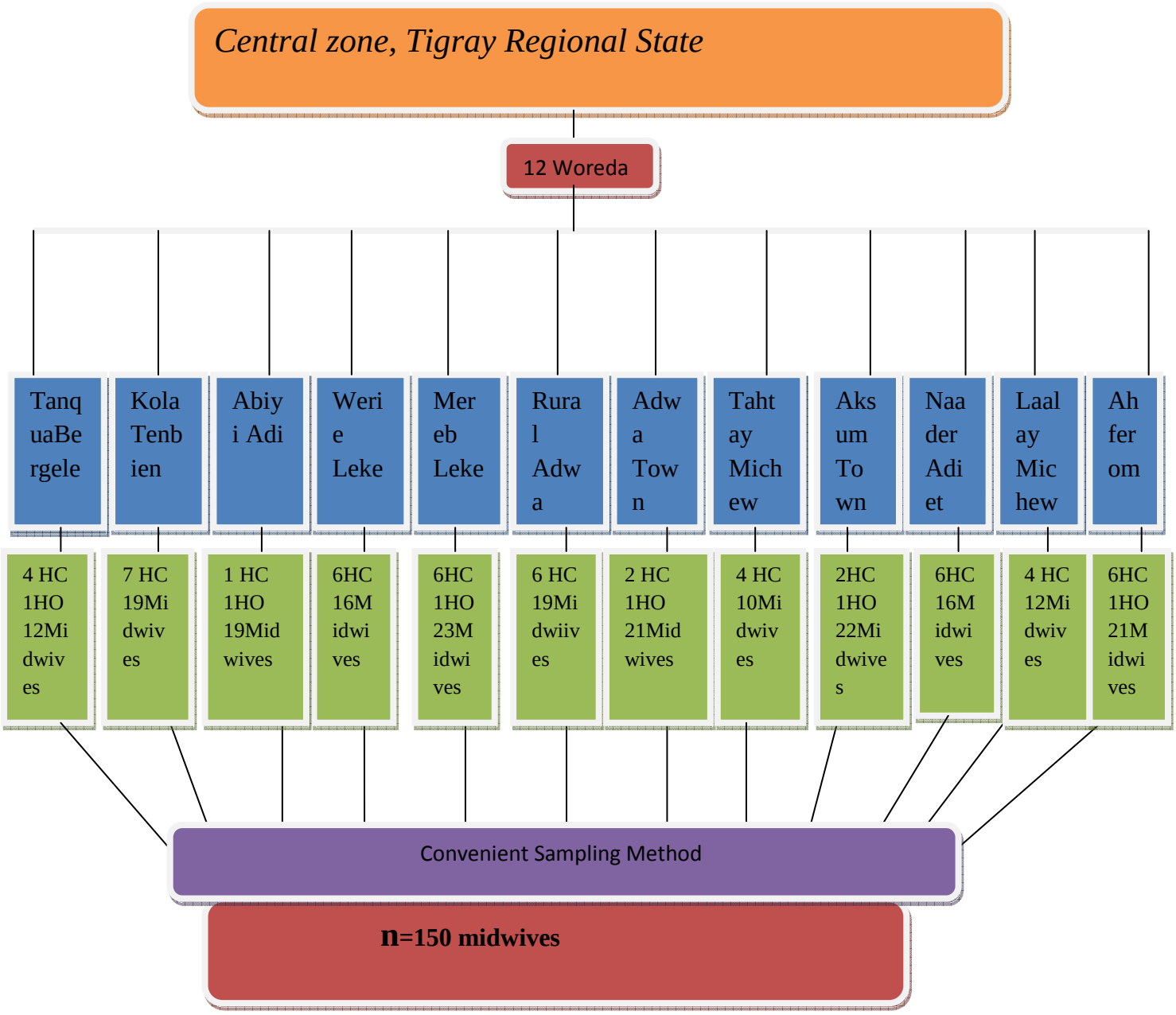

Figure 3: Schematic representation of sampling procedures in governmental health facilities of central zone, Tigray regional state, north Ethiopia, 2015

4.5 Inclusion and Exclusion criteria

4.5.1 Inclusion Criteria

- All midwives recruited by government who conducting delivery and newborn care during data collection period at governmental health facilities.
- Midwives with educational qualification of diploma and above.

4.5.1 Exclusion criteria

- Midwives who work outside delivery and newborn care.
- Midwives students working for their practice
- Midwives who were giving free service
- Midwives on annual leave and not available during data collection time.

4.6. Methods of Data collection

The data collection instrument (Structured questionnaire) was adopted accordingly from different related literatures with required modification based on outcome variables and their predictors. The whole checklist with some modification was developed from save the children international care of the newborn training guide. The questionnaire had three parts, Part I- 9 questions of socio-demographic characteristics, Part II- 25 question related to knowledge of midwives on immediate newborn care and Part III-Practice part of newborn care with 40 checklists. This checklist had adopted from save the children international and modified according to Ethiopian context.

The English version questionnaire was translated to the local language Tigrigna and translated back to English version by different individuals to ensure understandability, check for its consistency. Both Tigrigna and English version questionnaire was used during data collection. After the development of the questionnaire and checklists, pre-test was done on 5% of the sample population in a similar study area but separate health facilities for its clarity, understandability, and completeness and midwives participated in pre-test was excluded from the actual data collection.

Data was collected by 3 BSc Nurse and 2 BSc Midwifery that have experience of one year and above on newborn and maternal care. They were trained intensively for two days on the study instrument and data collection procedure. 2 BSc Nurse and the principal investigator were supervised, and assisted the data collectors. Supervisors and principal investigator collect filled questionnaires every day and check for consistencies and completeness. The principal investigator was responsible for coordination and supervision of the overall data collection process.

Observation and interview was conducted by the same data collectors. The observation was conducted by trained data collectors after written permission was obtained from each health facilities and the knowledge and socio-demographic characteristics was asked after the observation. The observation was conducted starting from preparation to delivery up to discharge of the client from health facility and a single observation was used for all study unites. Observation and interview continue until the required sample size was obtained.

4.7. Variables

4.7.1. Dependent variable

- Knowledge and practice of midwives towards immediate newborn care

4.7.2. Independent variable

- ✓ Socio-demographic characteristics of respondents like:
- Age
- Sex
- Religion
- Marital status
- Ethnicity
- Educational level
- Monthly income
- ✓ Work environment
- ✓ Work experience
- ✓ In service training on immediate newborn care

4.8. Data quality assurance

To assure quality of the data the following measures was undertaken: As much as possible attempts were done for questions to suite the local setting and were first prepared in English language and later translated to Tigrigna language and retranslated back by other translator to English to compare the consistency. Two week prior to the actual data collection, questionnaire was pre tested on 5% of the sample on similar midwives in separate health facilities of the actual data collection area but was in the same study area of central zone Tigray regional state, other than the sampled population who are not part of the actual sample for its clarity, understandability, and completeness.

Data collectors and supervisors were trained for two days on the study instrument of both interview and observation and data collection procedure. During the actual data collection process, supervisors were cross checked the data collectors on the field randomly every day for questionnaires consistency and completeness. Filled questionnaires were checked daily. The quality of observational data was ensured by adopting standardized checklists from save the children international with modification to the context of Ethiopia. Data collectors were BSc Midwifery and Nurse that have experience of one year and above on newborn and maternal care. The data collector were not informed to midwives and starts to observe the condition of care after taking written permission from each health facility managers. To avoid observer bias strict training were given to data collector specifically to follow the checklist.

After data collection, each questionnaire was given a unique code by the principal investigator. The principal investigator was prepared the template and entered data using EPI-Info version 3.5.1. Five percent of entered data was re-checked by comparing the entered data with the actual questionnaire. Frequencies were used to check for missed values and outliers. Any error identified at this time was corrected after revision of the original data using the code numbers**.**

4.9. Methods of data analysis

Data was checked for completeness and any incomplete information was excluded from the entry. The collected data was entered in to EPI-Info version 3.5.1 computer software package

and after the data was cleaned for inconsistencies and missing values and important amendment was done, data was exported to window based statistical package for social sciences (SPSS) version 21.0. Figures were constructed using Microsoft excel. Simple frequencies were run to see the overall distribution of the study subject with the variables under study. Odds Ratio with 95% Confidence Interval was used to ascertain the association between dependent and independent variable as appropriate. Bi-variate analysis was used to determine the association between different factors and the outcome variable. Multivariate analysis or Logistic regression was used to identify the independent predictors of practice of newborn care. Confidence interval of 95% was also used to see the precision of the study and the level of significance was taken at α =<0.05. Finally, result was presented in texts, graphs and tables.

4.10. Ethical consideration

Ethical clearance and approval was obtained from the Ethical Committee of department of nursing and midwifery, college of health science, Addis-Ababa University. Official letters was obtained from department of nursing and midwifery to Tigray regional health bureau, and then written permission was given to all woreda health bureaus of central zone and Hospitals. Each woreda health bureau was written official letter to each health facilities under their control. Health facility managers gave written permission to MCH (maternal and child health) department head. After explaining about the purpose, the possible benefit of the study and written permission was obtained from each respondent before taking interview but written permission from health facility without informing the respondent's for the observation, observational checklist was filled. Confidentiality was maintained in each level of the response in this study.

4.11. Communication/dissemination of the research findings

The result of the study will be disseminated / communicated to Addis Ababa university school of Nursing as hard and soft copy, Tigray regional state health bureau, Ministry of Health. Furthermore; it will be presented on scientific conferences, different seminars, meetings, workshops and disseminated through Publication in local and international journals.

Operational definition of terms

Knowledge: Refers to the knowledge response of midwives to the structured questions on the steps of Care given to immediately born baby, that is good knowledge when they respond correctly to >75 % of the knowledge questions (>8 steps), fair knowledge respond to 51-74% (5-8) and poor knowledge respond to <50% (<5).

Practice: Refers to the performance of midwives according to prepared checklist regarding immediate Care of Newborn**. Practiced** if midwives perform the task at least 50% (Median) of the checklists of practice of immediately born baby and **not practiced** if midwives perform the task below 50% (median) of the checklists.

Immediate Care of Newborn: It is the care given to the neonate following birth within the delivery room like :clearing of airway ,providing warmth & prevention of heat loss, initiation of breast feeding, protection from infections, early assessment of neonatal condition and continuation of further care.

The following are the steps of immediate care which should be given to all babies at birth

Dry Baby: Immediately dry the whole body of immediately born baby including the head and limbs, with sterile or clean and dry towel.

Evaluate Breathing: Check for immediately born baby to cry and if the baby does not cry, check if the baby is breathing properly or gasping.

Clamping /tying the cord: If the baby does not need resuscitation, wait for cord pulsations to cease or approximately 2-3 minutes after birth, and then place one metal clamp/cord tie 2 centimetres from the baby's abdomen and the second clamp / tie another 2 centimetres from the first clamp/tie.

Cutting the cord: Cut the cord with sterile scissors or surgical blade, under a piece of gauze in between the two ties.

Keep the newborn warm: Keep the baby warm by placing in skin-to-skin contact on the mother's chest and cover the baby's body and head with clean cloth.

Initiate Early breastfeeding: breastfeeding the newborn baby within the first hour of delivery and providing the baby colostrums or first milk of mother.

Place the newborn's identification bands: Putting the identification bands or information of the baby to separate him/her from another to avoid misshaping/exchange of babies in busy delivery rooms.

Weigh the newborn: Place clean linen or paper on the pan of the weighing scale. Place the naked baby on the paper/linen to measure the weight of the newborn baby.

Record: Putting or registering all observations, treatment, cares and actions provided for the baby immediately after delivery in the registers/appropriate chart/cards.

CHAPTER-FIVE: RESULT

5.1. Response coverage

Out of 150 conveniently selected midwives 147 participated in the study which gives a response rate of 98%, of which majority of respondents 88 (59.9%) were from health center and 59(40.1%) were from hospitals.

5.2. Socio-demographic characteristics of study population

Out of 147 participant in the study, 117(79.6%) were females, 30(20.4%) males. Majority 35(23.8%) of the participants were in the age group of 25-29, followed by the age group 35-39 and 7(4.8%) were 50 and above years and the mean age of respondents was 34.1 years. Regarding their religion, Orthodox Christianity was the dominant religion consisting of 135(91.8%), followed by Muslims 12(8.2%). One hundred forty six (99.3%) of respondents were Tigray, and the rest 1(0.7%) was Amhara by their ethnicity (Table-1).

Concerning educational status of respondents 122(83.0%) were diploma and 25(17%) was degree. A total of 88(59.9%) were working in health centers and 59(40.1%) were from hospital and majority of respondents had work experience of 1-5 years 55(37.4%) followed by 6-10 years 24(16.3%) and 5(3.4%) had 31 and above years of work experience. Seventy two (49.0%) of midwives earned monthly salary of 1663-2383, 50(34.0%) were earned 2384-3104 and 1(0.7%) received between 4547-5267 Ethiopian birr (Table-1).

Table-1: Socio-demographic characteristics of Midwives in governmental health facilities at central zone, Tigray regional state, north Ethiopia, 2015.

Variable		Frequency (N=147)	Percent
Age	20-24	24	16.3%
	25-29	35	23.8%
	30-34	14	9.5%
	35-39	28	19%
	40-44	24	16.3%
	45-49	15	10.2%
	50 and above	7	4.8%
Sex	Male	30	20.4%
	Female	117	79.6%
Religion	Orthodox	135	91.8%
	Muslim	12	8.2%
Ethnicity	Tigray	146	99.3%
	Amhara	1	0.7%
Educational Status	Diploma	122	83.0%
	Degree	25	17%
Work Environment	Hospital	59	40.1%
	Health Center	88	59.9%
Work Experience	1-5 years	55	37.4%
	6-10 years	24	16.3%
	11-15 years	20	13.6%
	16-20 years	21	14.3%
	21-25 years	14	9.5%
	26-30 years	8	5.4%
	31 and above years	5	3.4%
Monthly salary	1663-2383	72	49.0%
	2384-3104	50	34.0%
	3105-3825	21	14.3%
	3826-4546	3	2.0%
	4547-5267	1	0.7%

As shown from the pie chart below 73(49.7%) of study participants were married followed by 47(32.0%) single, 15(10.2%) widowed and the least percent 12(8.2%) of respondents were divorced (Figure-4).

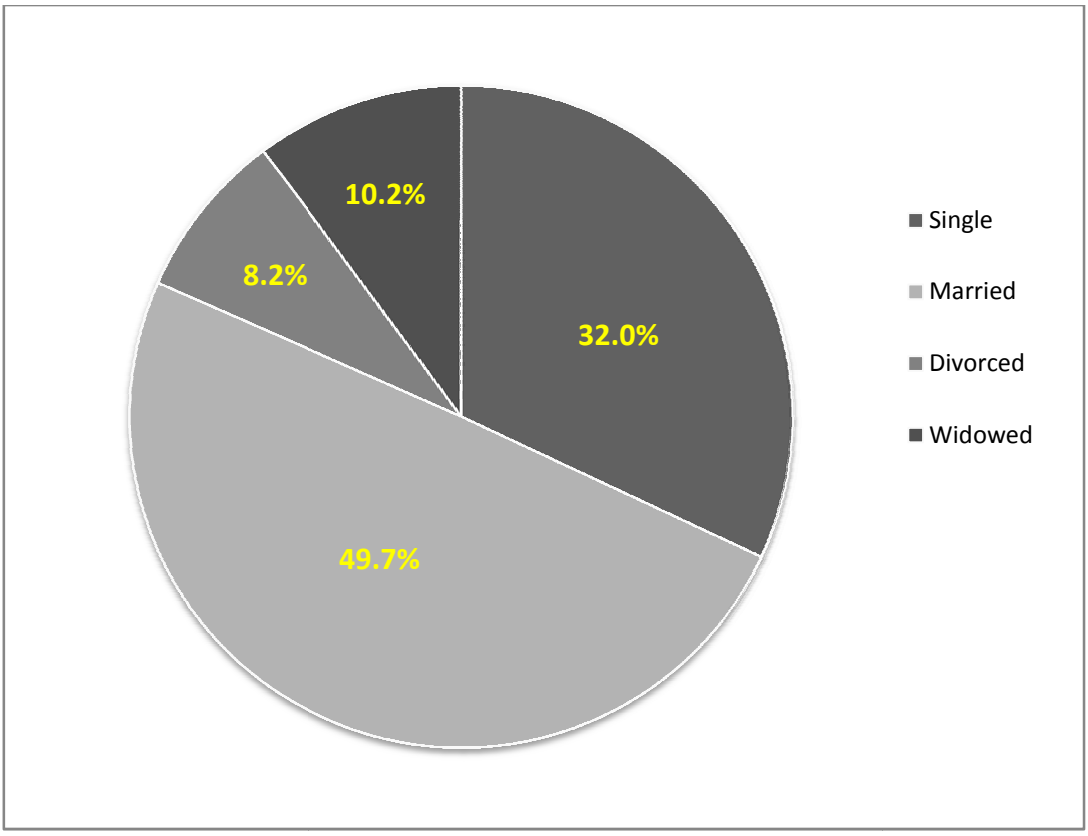

Figure 4: Marital status of midwives in governmental health facilities at central zone, Tigray regional state, north Ethiopia, 2015.

5.3. Knowledge of Midwives on Immediate Newborn Care

Regarding knowledge of midwives on umbilical cord cut and care 100% of participants were used sterile scissor to cut the umbilical cord. Of this 146(99.3%) had knowledge of applying nothing but 1(0.7%) had not knowledge to apply nothing on the cord rather wanted to apply butter after cutting newborn baby's cord. 100% of study subjects were knowledgeable to weigh baby immediately after delivery and 100% had general knowledge on the advantage of early initiation of breast feeding. Concerning knowledge on the advantage of first milk/colostrums 143(97.3%) had general knowledge. 6(4.1%) of respondents were not knowledgeable on the importance of colostrums or squeezed out colostrums before breast feeding the newborn baby but 141(95.9%) midwives were knowledgeable to give colostrums to immediately born baby. A total of 145(98.6%) of midwives had knowledge on complication/problems of immediately born baby and nearly all 146(99.3%) of midwives had knowledge to provide eye ointment to immediately born baby.

Among midwives who had participated in this survey, 126(85.7%) received in-service training regarding immediate newborn care. Of these 59(46.8%) received one time, 46(36.5%) two times and 21(16.7%) of respondents were received in-service training above two times on care given to immediately born baby. A total of 143(97.3%) of midwives had knowledge on importance of giving vitamin K to immediately born baby and 146(99.3%) had knowledge on Skin-to-skin contact.

From the 10 steps of care given to immediately born baby knowledge of respondent midwives were 137(93.2%) on cord cutting, giving vitamin K 136(92.5%), dry baby 131(89.1%), 122(83.0%) to deliver baby on to mother's abdomen, and 127(86.4%) to use eye care and apply TTC eye ointment, 98(66.6%) early initiation of breast feeding, 91(61.9%) use of skin to skin contact. Small number of respondents 4(2.7%) had knowledge on recording, 63(42.9%) of respondents on assessing breathing and 81(55.1%) weigh baby (Table-2).

Table-2: Knowledge on immediate newborn care of midwives at central zone Tigray regional state, north Ethiopia, 2015.

Variable	Frequency (N=147)	Percent
Knowledge of midwives on care given to immediately born baby		
Deliver baby on to mother's abdomen	122	83%
Dry baby	131	89.1%
Assessing breathing	63	42.9%
Cord cutting and care	137	93.2%
Eye care and applying TTC eye ointment	127	86.4%
Early initiation of breast feeding	98	66.6%
Skin-to-skin contact with mother	91	61.9%
Giving vitamin K	136	92.5%
Weigh baby	81	55.1%
Record	4	2.7 %

One hundred twenty one (83.4%) of respondents had knowledge on Asphyxia that is a complications of newborn baby followed by hypothermia 84(57.9%) and 10(6.9%) had knowledge on hypoglycemia as complication of newborn baby. A total of 81(55.9%) of respondents were knowledgeable that clean cord cutting and care prevent complication of newborn baby, and 70(48.3%) were mentioned that skin-to-skin contact with mother but 0.9% answered use of incubator/warmer prevent complication of immediately born baby (Table-3).

Table-3: Knowledge of midwives on complication of immediately born baby and its preventive methods at central zone Tigray regional state, north Ethiopia, 2015.

Variable	Frequency (N=147)	Percent
Knowledge of Midwives on complication of immediately born baby		
Hypothermia	84	57.9%
Asphyxia	121	83.4%
Infection	70	48.3%
Hypoglycaemia	10	6.9%
Knowledge of Preventive methods for complication of newborn baby		
Deliver baby on to mother's abdomen	53	36.6%
Assessing breathing	42	29.0%
Clean cord cutting and care	81	55.9%
Eye care and applying TTC eye ointment	55	37.9%
Early initiation of breast feeding	44	30.3%
Skin-to-skin contact with mother	70	48.3%
Giving vitamin K	26	17.9%
Weigh baby	11	7.6%
Oxygen administration	2	1.4%
Resuscitation	7	4.8%
Suction	37	25.5%
Use incubator/warmer	1	0.9%

Eighty four (57.1%) of respondents had knowledge that skin-to-skin contact helped baby stay warm, 64(55.8%) mentioned skin to skin contact with mother prevents hypothermia and 1(0.7%) help expel placenta and 1(0.7%) helped to contract uterus. If baby not cried immediately after delivery, 136(92.5%) of respondents had knowledge to suck the airway followed with call a help and start resuscitation 105(71.4%) and 3(2.0%) of respondents had knowledge of using burbing (Table-4).

Majority of respondents 110(74.8%) had knowledge to bath newborn baby after 24 hours of delivery, 23(15.6%) of respondents counsels mother to wash baby at home after 24 hours of delivery and 9(6.1%) of midwives wash baby before 24 hours of delivery but 5(3.4%) of respondents did not know when to wash immediately born baby (Table-4).

Fifty seven (38.8%) of respondent midwives had knowledge that providing eye ointment to newborn baby prevents eye infection followed by prevents from STI 23(15.7%) and 1(0.7%) mentioned that eye ointment prevents dryness of eye, and 8(5.5%) had knowledge to prevent syphilis and used as prophylaxis (Table-4).

Table-4: Knowledge of midwives on some important care given to immediately born baby at central zone Tigray regional state, north Ethiopia, 2015

Variable	Frequency (N=147)	Percent %
Knowledge of midwives on advantage of skin-to-skin contact		
Prevent hypothermia	64	55.8%
Help baby stay warm	84	57.1%
Bonding	40	27.2%
Help expel placenta	1	0.7%
Uterine contraction	1	0.7%
Knowledge of midwives on measures to be taken for baby unable to cry after delivery		
Suck the baby	136	92.5%
Call a help and start resuscitation	105	71.4%
Start cardio-pulmonary resuscitation	10	6.8%
Burbing	3	2.0%
Oxygen administration	4	2.7%
Knowledge on time of bathing for immediately born baby		
Before 24 hour of delivery	9	6.1%
After 24 hour of delivery	110	74.8%
I do not know	5	3.4%
Counsels mother to wash at home after 24 hour	23	15.6%
Knowledge on the importance of providing eye ointment		
Prevent eye infection	57	38.8%
Prevent blindness	12	8.2%
Prevent conjunctivitis	21	14.3%
Prevent dryness of eye	1	0.7%
Prevent from STI	23	15.7%
Prevent Gonorrhoea	2	1.4%
Prevent syphilis	8	5.5%
As prophylaxis	8	5.5%

The knowledge of participant midwives on advantage of early initiation of breast feeding was prevention from hypoglycemia 97(66%) followed by enhanced bonding of mother and baby 53(36.1%) and 1(0.7%) mentioned that early initiation of breast feeding promote growth, reduces pain of mother, help to have good IQ and 1.4% responded that stimulates lactation (Table-5).

Ninety one (61.9%) of respondents had knowledge on the advantage of colostrums that it prevents newborn baby from infection and gives important nutrients to the baby 50(34%). 1(0.7%) of respondents had mentioned that colostrums helps for uterine contraction and 19.7% responded that used as first immunization (Table-5).

Table-5: Knowledge of midwives on breast feeding at central zone Tigray regional state, north Ethiopia, 2015.

Variable	Frequency N=147	Percent
Knowledge on advantage of early initiation of breast feeding		
Enhances bonding of mother and baby	53	36.1%
Prevents from hypoglycaemia	97	66%
Prevents from hypothermia	40	27.2%
Prevents infection	42	28.6%
Normal food for baby	27	18.4%
Promote growth	1	0.7%
Reduces pain of mother	1	0.7%
Stimulate lactation	2	1.4%
To have good IQ	1	0.7%
Uterine contraction	11	7.5%
Knowledge on advantage of colostrums		
Protection from infection	91	61.9%
Gives important nutrients to the baby	50	34%
First immunization	29	19.7%
Medication	2	1.4%
Uterine contraction	1	0.7%

Among all participants 137(93.2%) of respondents had knowledge to initiate breast feeding for newborn baby within one hour of delivery and 9(6.1%) had knowledge of initiating breast feeding after one hour of delivery but 1(0.7%) did not know when to initiate breast feeding (Figure -5).

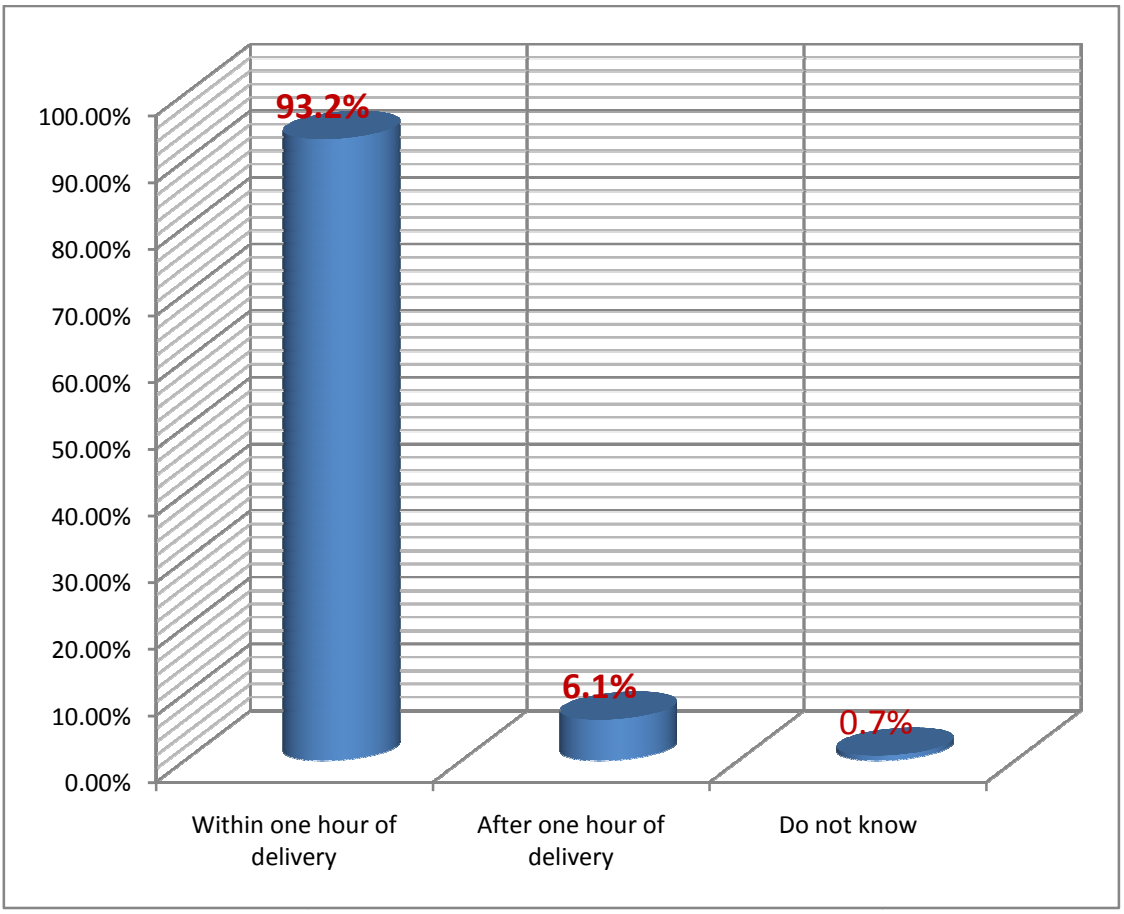

Figure 5: Knowledge on time of initiation of breast feeding to immediately born baby at central zone Tigray regional state, north Ethiopia, 2015

Most respondents of this study had knowledge to place baby on mother's abdomen 141(95.9%) immediately after delivery followed by 4(2.7%) of respondents had knowledge to place immediately born baby on separate and clean place and 2(1.4%) on incubator/warmer (Figure- 6).

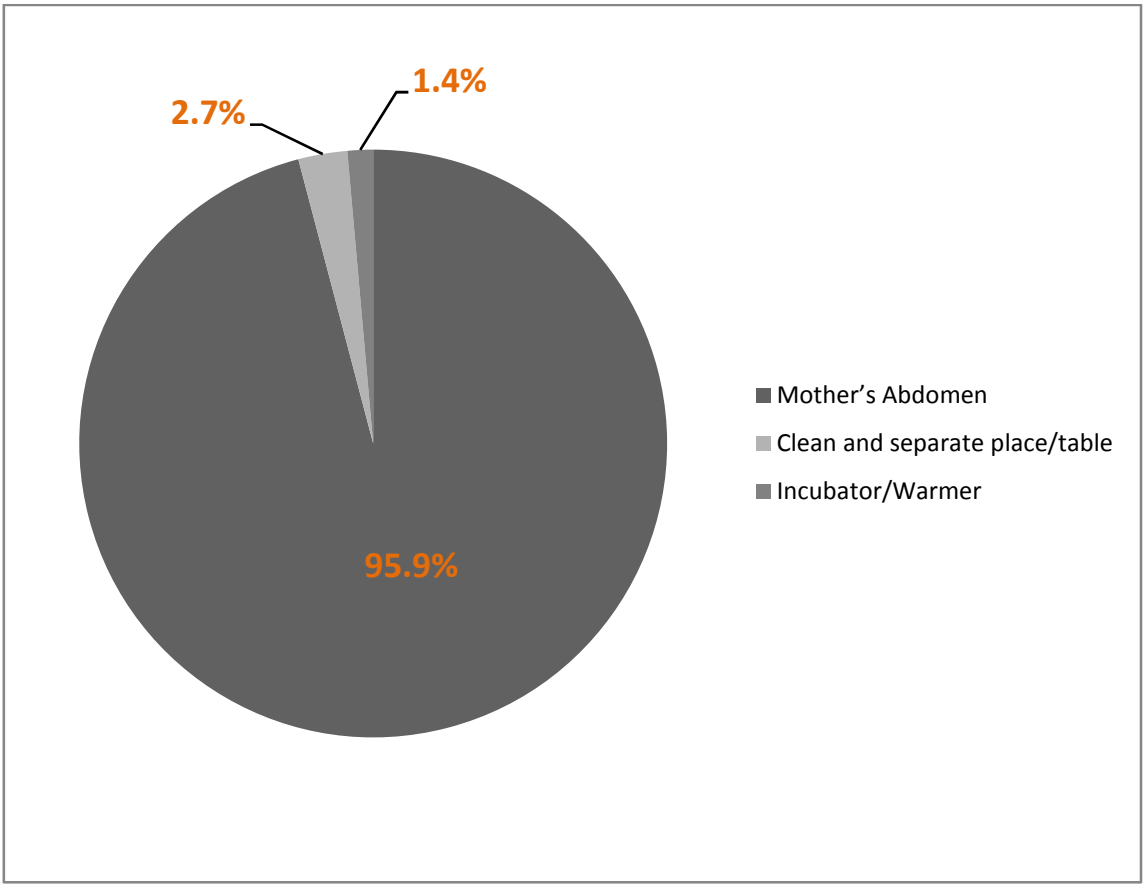

Figure 6: Place where midwives keep baby immediately after delivery in governmental health facilities at central zone, Tigray regional state, north Ethiopia, 2015.

Knowledge of respondents on importance of vitamin K were, 76.9% mentioned that it prevents from bleeding followed by used as clotting factor by (12.9%) of respondents and 0.7% mentioned that it prevent from trauma, stop umbilical bleeding and stop diarrhea (Figure-7).

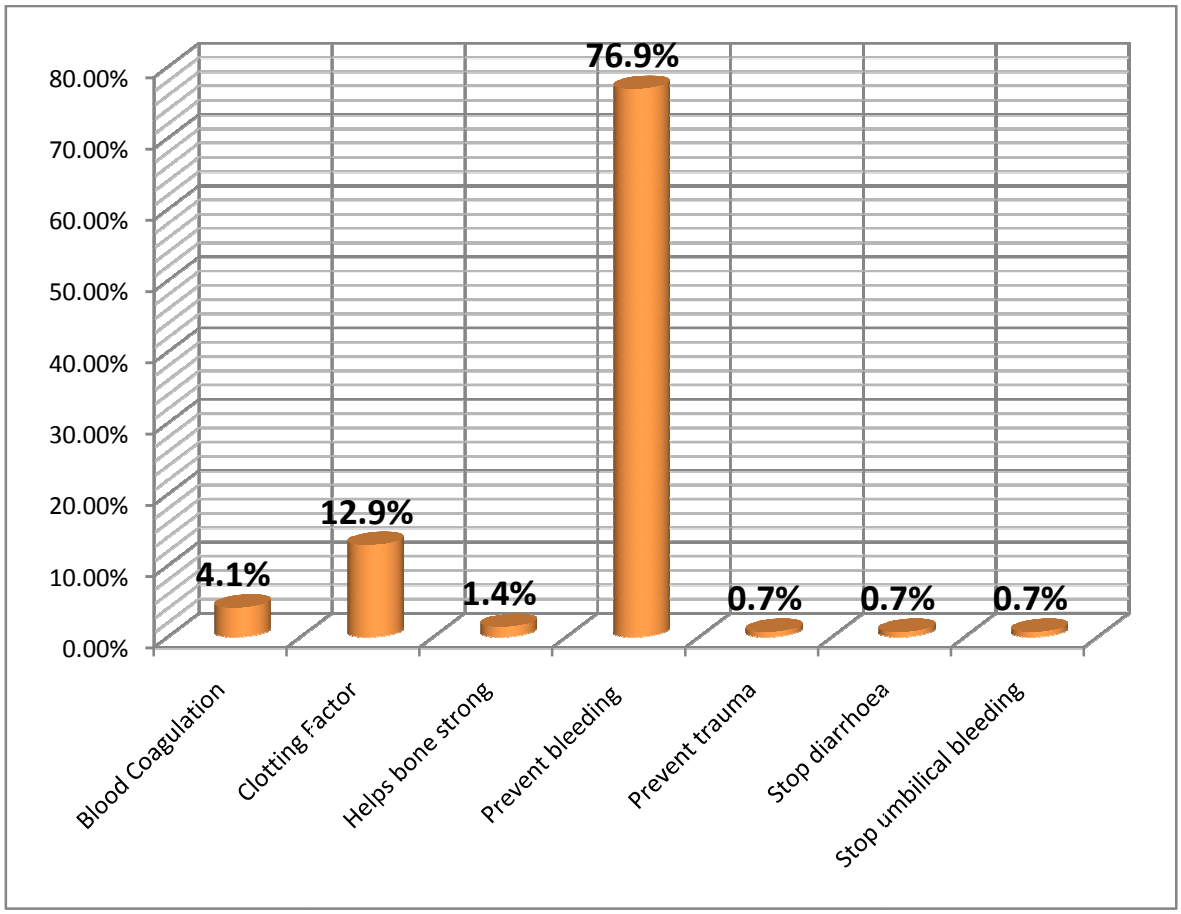

Figure 7: Knowledge of Midwives on importance of vitamin K in governmental health facilities of central zone, Tigray regional state, north Ethiopia, 2015.

A total of 17.7% of study participants had good knowledge on immediate newborn care and 25.2% had poor knowledge. The rest 57.1 % of respondent midwives had fair knowledge on care given to immediately born baby (Figure-8).

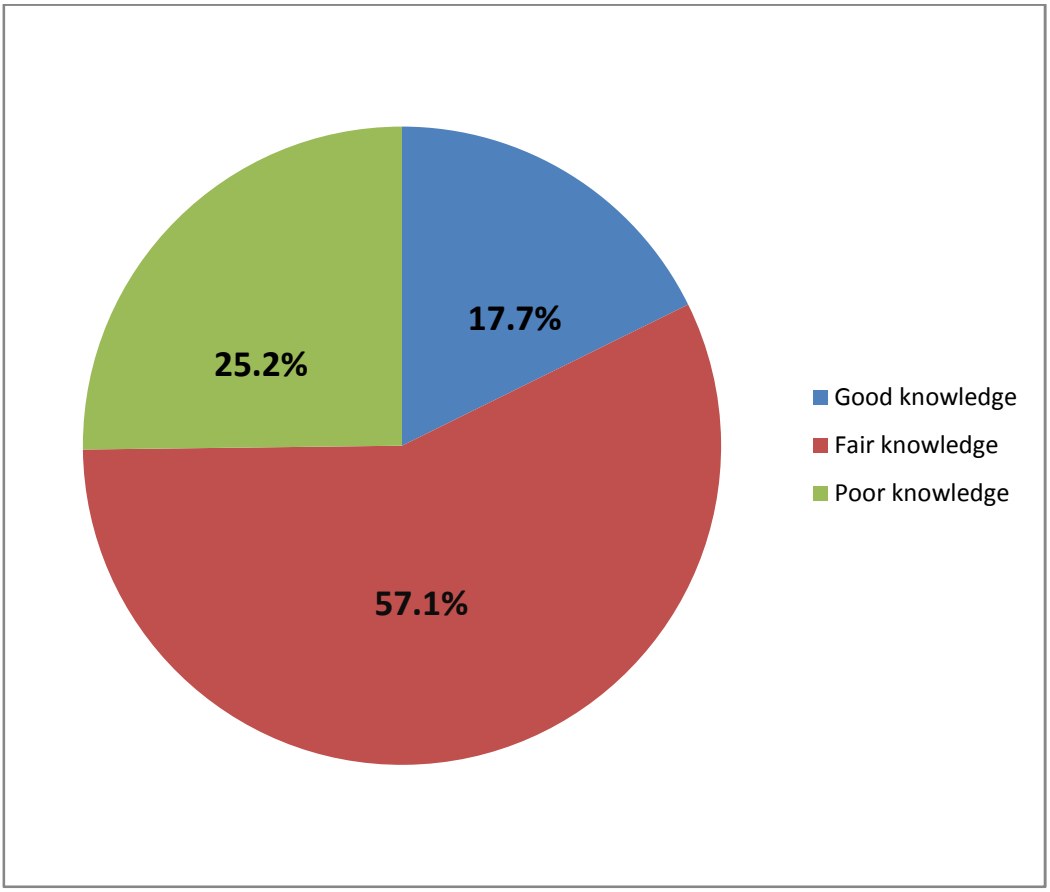

Figure 8: Over all Knowledge of midwives on care of immediately born baby in governmental health facilities at central zone, Tigray regional state, north Ethiopia, 2015.

5.4. Practice of Respondent Midwives on Immediate Newborn Care

The result of this survey showed that 24(16.3%) of respondent midwives gave newborn care under unclean delivery room, almost all 146(99.3%) of respondents were prepared cord tie and clamp before delivery, but 98% of respondent midwives did not prepared baby identification material. Even though 86.4% of midwives prepared suction devices, 27.9% were not prepared neonatal ambu bag and mask (Table-6).

Table-6: Preparation of equipment by midwives to give immediate newborn care in governmental health facilities at central zone, central zone, Tigray regional state, north Ethiopia, 2015.

Variable		**Frequency N=147**	**Percent**
Delivery room clean	Yes	125	83.7%
	No	24	16.3%
Cord tie and clamp prepared	Yes	146	99.3%
	No	1	0.7%
Suction device prepared	Yes	127	86.4%
	No	20	13.6%
Neonatal ambu bag and mask prepared	Yes	106	72.1%
	No	41	27.9%

Among a total respondent midwives 100% were put on sterile glove before starting delivery and newborn care and 115(78.2%) were not taken Apgar score within 1st and 5th minutes. One hundred one (68.7%) of midwives were explained to mothers not to put anything on cord after cutting, but 31.3% of respondents were not explained mothers not to put anything on cord stump. 82.3% of respondents checked if the baby cried while drying it but 17.7% did not performed the task completely.

Regarding practice of midwives on immediate newborn care, 111(75.5%) of respondent midwives did not washes hands with soap and water, dries them with a clean dry cloth before and after care and 94(63.9%) of respondent wiped the eyes and face of baby when the head is delivered but 103(70.1%) of participant midwives were not cleaned eyes of baby immediately after birth with swab soaked in sterile water, using separate swab for each eye (Table-7).

Sixty three (42.9%) of midwives were not tied 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 and 48(32.7%) were not cut the cord after 2-3 minutes with sterile scissors or surgical blade, under a piece of gauze in order to avoid splashing of blood (Table-7).

From all respondent midwives who faced baby not cried or breathing well within 30 seconds of birth, 42(85.7%) were called for help, clamped and cut the cord, taken the baby to the table designated for steps of resuscitation and 45(91.8%) used appropriate size of mask during need of resuscitation (Table-7).

Table-7: Practice of midwives on immediate newborn care in governmental health facilities at central zone, Tigray regional state, north Ethiopia, 2015.

Variable	Frequency N=147	Percent
Washes hands with soap and water, dried with a clean dry cloth before and after care		
Midwives Perform task completely/correctly	36	24.5%
Unable to perform task completely/ task was not observed	111	75.5%
Wipes the eyes and face when the head is delivered		
Midwives Perform task completely/correctly	94	63.9%
Unable to perform task completely/ task was not observed	53	36.1%
Clean eyes immediately after birth with swab soaked in sterile water, using separate swab for each eye		
Midwives Perform task completely/correctly	44	29.9%
Unable to perform task completely/ task was not observed	103	70.1%
Delivery surface covered with sterile dry towel		
Midwives Perform task completely/correctly	135	91.8%
Unable to perform task completely/ task was not observed	12	8.2%
When baby not cried within 30 minute of delivery, called a help and prepared for steps of resuscitation		
Midwives Perform task completely/correctly	42	85.7%
Unable to perform task completely/ task was not observed	7	14.3%
Use appropriate size of mask for neonatal resuscitation		
Midwives Perform task completely/correctly	45	91.8%
Unable to perform task completely/ task was not observed	4	8.2%
Cord Tie		
Midwives Perform task completely/correctly	84	57.1%
Unable to perform task completely/ task was not observed	63	42.9%
Cord cut with sterile scissor or surgical blade after 2-3 under a piece of gauze.		
Midwives Perform task completely/correctly	99	67.3%
Unable to perform task completely/ task was not observed	48	32.7%

Majority of respondent midwives 145(98.6%) were immediately dried the whole body of baby including the head and limbs with a clean cloth/towel but 14(9.5%) of respondents were not removed wet cloth used to dry the baby. A total of 106(72.1%) of respondents kept the baby warm by putting in skin-to-skin contact with mother and 145(98.6%) were covered the baby's body and head with clean cloth. From all participants 52(35.4%) of midwives **s**ucked the airway of baby after delivery, that all midwives were performed airway sucking for those children's in need of sucking and most 145(98.6%) of respondents were administered vitamin K to immediately born baby (Figure-9).

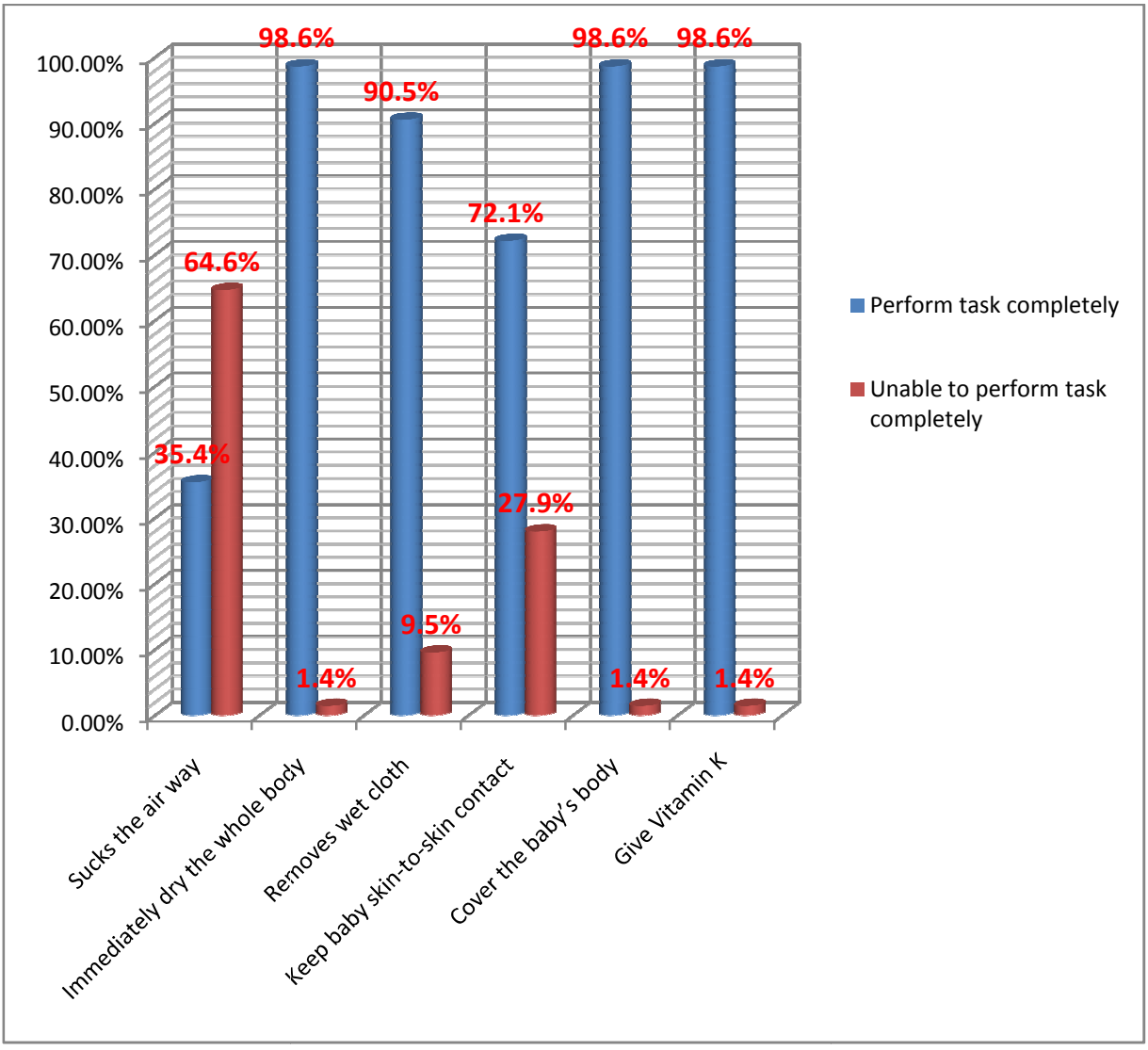

Figure 9: Practice of midwives on immediate newborn care in governmental health facilities at central zone, Tigray regional state, north Ethiopia, 2015.

A significant number of respondent midwives 6(4.1%) were provided prelactal feeding to newborn baby and 6(4.1%) were squeezed out colostrums before breast feeding the newborn baby and a total of 142(96.6%) of respondents were initiated beast feeding within one hour of delivery for newborn baby (Table-8).

Among all respondents who participated in this survey, 112(76.2%) were helped mother and baby get in to good position and attachment for breastfeeding and 135(91.8%) respondents were kept mother and baby together in labor room (Table-8).

Table-8: Practice of midwives on feeding of newborn baby in governmental health facilities at central zone, Tigray regional state, north Ethiopia, 2015.

Variable	Frequency N=147	Percent
Provide prelactal feeding		
Midwives Perform task completely/correctly	6	4.1%
Unable to perform task completely/ task was not observed	141	95.9%
Squeezed out colostrums before breastfeeding the newborn		
Midwives Perform task completely/correctly	6	4.1%
Unable to perform task completely/ task was not observed	141	95.9%
Helps mother and baby to start breastfeeding		
Midwives Perform task completely/correctly	112	76.2%
Unable to perform task completely/ task was not observed	35	23.8%
Initiates breast feeding within one hour after delivery		
Midwives Perform task completely/correctly	142	96.6%
Unable to perform task completely/ task was not observed	5	3.4%
Helps mother and baby get into a good position and attaches for breastfeeding.		
Midwives Perform task completely/correctly	137	93.2%
Unable to perform task completely/ task was not observed	10	6.8%
Mother and baby kept together in labour room		
Midwives Perform task completely/correctly	135	91.8%
Unable to perform task completely/ task was not observed	12	8.2%

One hundred forty six (99.3%) respondent midwives were applied one drop Tetracycline 1% ointment to each eye of baby but 91(61.9%) of midwives were touched the tip of tube to eye of baby. Even though 2(1.4%) of participants were washed baby within 24 hour of delivery, majority 145(98.6%) of midwives were not washed baby until discharge. Out of this 113(76.8%) were counselled mother how to bath baby at home. The result of this survey also showed that 143(97.3%) of midwives were weighed baby immediately after delivery. A total of 55(37.4%) of participants were not done head-to-toe examinations and 121(82.3%) of midwives were responded positively to mother's question (Table-9).

Table-9: Practice of midwives on care of newborn baby and counseling of mother related to immediate born baby in governmental health facilities at central zone, Tigray regional state, north Ethiopia, 2015

Variable	Frequency N=147	Percent
Applies one drop Tetracycline 1% ointment to each eye		
Midwives Perform task completely/correctly	146	99.3%
Unable to perform task completely/ task was not observed	1	0.7%
The tip of the tube does not touch the eye of the baby		
Midwives Perform task completely/correctly	56	38.1%
Unable to perform task completely/ task was not observed	91	61.9%
Weighs the baby		
Midwives Perform task completely/correctly	143	97.3%
Unable to perform task completely/ task was not observed	4	2.7%
Washes baby within 24 hours	2	1.4%
Not washed the baby until discharge	145	98.6%
Counsels mother how to bath baby at home		
Midwives Perform task completely/correctly	113	76.8%
Unable to perform task completely/ task was not observed	32	21.8%
Head-to-toe examination		
Midwives Perform task completely/correctly	92	62.6%
Unable to perform task completely/ task was not observed	55	37.4%
Responds to mothers question positively		
Midwives Perform task completely/correctly	121	82.3%
Unable to perform task completely/ task was not observed	26	17.3%

From all participants of this survey 146(99.3%) of respondent midwives were not placed newborn's identification band on the wrist and ankle of baby and a total of 138(93.9%) of midwives were recorded all care given to newborn baby, the rest 9(6.1%) were not recorded or partially recorded cares given to immediately born baby. Among the respondents 111(75.5%) were counseled mother on newborns danger sigh before discharge but 36(24.5%) were not counseled on newborn danger sigh before discharge.

Half of the respondents midwives were practiced care given to immediately born baby according to the checklists used to asses' practice of midwives on immediate newborn care (Table-10).

Table-10: Practice of midwives on immediate newborn care in governmental health facilities at central zone, Tigray regional state, north Ethiopia, 2015

Variable	Frequency N=147	Percent
Practiced	77	52.4%
Not Practiced	70	47.6%
Total	147	100%

In Bi-variate analysis only work environment was highly associated with practice of midwives on immediate newborn care. Variables which have p-value less than or equal to 0.3 in Bi-variate analysis were selected as a candidate for the multivariate analysis. The multi-variate analysis result showed that marital status, religion, educational status, knowledge on newborn care, and history of in-service training on newborn care were not statistically associated with the participants' practice of newborn care but work environment was significantly associated with practice of newborn care that is midwifes working at health center were 82% lower odds of newborn care compared to those working in the hospitals (table-12) (P=0.000, AOR=0.18(0.07, 0.43) (Table12).

Table-11: Multivariate analysis of variables with practice of newborn care, among Midwifes working in health centers and hospitals at central zone, Tigray regional sate, north Ethiopia, 2015.

Variables	Practiced Newborn Care		COR (95% CI)	AOR(95% CI)	P-Value
	Yes, n (%)	No, n (%)			
Marital status					
Single	23(48.9%)	24(51.1%)	1	1	
Married	48(65.8%)	25(34.2%)	2.00(0.94, 4.23)	1.90(0.79, 4.58)	0.15
Divorced	2(16.7%)	10(83.3%)	0.20(0.04, 1.05)	0.22(0.04, 1.26)	0.09
Widowed	4(26.7%)	11(73.3%)	0.38(0.10, 1.36)	0.40(0.09, 1.73)	0.22
Religion					
Orthodox	74(54.8%)	61(45.2%)	1	1	0.036
Muslim	3(25.0%)	9(75.0%)	0.27(0.07, 1.06)	0.19(0.04, 0.89)	
Working environment					
Hospital	**46(78.0%)**	**13(22.0%)**	1	1	**0.000**
Health Center	**31(35.2%)**	**57(64.8%)**	**0.15(0.07, 0.32)**	**0.18(0.07, 0.43)**	
Educational status					
Diploma	60(49.2%)	62(50.8%)	1	1	0.87
Degree	17(68.0%)	8(32.0%)	2.2(0.88, 5.47)	1.10(0.32, 3.72)	
Knowledge on Newborn care					
Fair	43(51.2%)	41(48.8%)	1	1	
Good	16(61.5%)	10(38.5%)	1.52(0.62, 3.75)	1.42(0.48, 4.17)	0.52
Poor	18(48.6%)	19(51.4%)	0.90(0.42, 1.96)	1.3(0.51, 3.33)	0.57
Training on newborn care					
Yes	15(71.4%)	6(28.6%)	1	1	0.25
No	62(49.2%)	64(50.8%)	0.38(0.14, 1.06)	0.48(0.14, 1.65)	

CHAPTER-SIX: DISCUSSION

Birth is a major challenge for the newborn to negotiate successfully from intrauterine to extra uterine life. The first few hours since birth is the most crucial period in the life of an infant for further growth and development ,which is largely determined by the quality of care that the newborn receives (13).

Regarding to socio-demographic status the mean age of respondents in this survey was 34.1 years and 83% were diploma in educational status. This finding is comparatively higher than a study done in Egypt, showed the mean age were 26.18 years and more than half of them (57.1%) were diploma in educational status (13). The difference in age might be due to the study subject in this study was taken from hospital and health center found in big towns and nearby areas and majority of midwives in this facility are those who had more service in periphery/remote area. Difference in educational status might be due to developmental status of the two countries where more degree and speciality professionals were found in the study done in Egypt.

The immediate care of newborn is performed for saving the newborn life so 85.7% of respondents had received in service training courses on immediate care of newborn, in spite of this; the study populations of this survey had poor knowledge regarding care of newborn at birth (25.%) . Similar study done in Sudan shows that 93% of study population had training but 56.6% of them got poor knowledge (1). This indicates that midwives in both study area were got trained but they do not have adequate knowledge this might be due to low educational status of most respondents.

In this study, result showed that knowledge on importance of vitamin K in midwives was 97.3% and 98.6% practiced of giving vitamin K to immediately born baby. This study result was higher compared with a study done in Egypt; that shows 69.5% of midwives did not administer vitamin K to the baby (13), and a study done in Haryana India were 76% of study participants had knowledge of importance of vitamin K, while only 55% were practiced it (17). Very small number of respondent midwives in this study was gave vitamin K without knowing its importance and almost all babies born by participant midwives might be protected from bleeding tendencies related to deficiency of vitamin K (hemorrhagic disease of

newborn). This might be due to strong emphasis given by ministry of health on maternal and newborn care and supply of vitamin K to the health facilities regularly and periodically.

The finding of this study reveals that all respondents had knowledge on the advantage of early initiation of breast feeding and 97.3% had knowledge on advantage of first milk/colostrums. Among this, 95.9% of respondents practiced to initiate colostrums to immediately born baby. This is relatively comparable with similar study in India were all respondents practiced to initiate colostrums to the newborn baby as the first feed (18). 93.2% of respondents started to initiate breast feeding to the baby within one hour after delivery. This finding was relatively higher than the study done by MAISHA program in Tanzania, where 44% in 2010 and 86% in 2012 helped baby initiate breast feeding within one hour of delivery (12). Babies born with the help of respondent midwives in this study will benefit from the advantage of early initiation of breast feeding and from colostrums that will have strong bonding with their mother and could be free from infections and nutrition related problems. This might be due to increased concern of government and other nongovernmental bodies on early initiation of breast feeding.

In this survey 99.3% of midwives had knowledge on advantage of Skin-to-skin contact but 72.1% practiced Keeping baby warm by putting skin-to-skin contact with the mother. This study finding is comparatively higher than similar study done in Haryana, India where 67% respondents had heard about skin to skin contact but only 57% of them knew how to do it and only 5% practiced it (17). Practicing skin to skin contact could make the newborn baby prevented from neonatal complication (hypothermia) and reduces other complications which follow hypothermia. The difference might be related to the in-service training received on immediate care of newborn by national and international agencies by most study participants and support from governmental and nongovernmental organization in this study.

Furthermore this finding showed that 95.9 % of midwives placed immediately born baby on mother’s abdomen, and 98.6% immediately dried the whole body of baby with a cloth. Of this 90.5% removed wet cloth used to dry the baby. This is relatively consistent with a similar study done in Tanzania by MAISHA program, 42 % in 2010 and 77 % in 2012 immediately placed newborn on the mother's abdomen, 91 % in 2010 and 95 % in 2012 immediately dried baby with towel, and 93% in 2010 and 93 % in 2012 discarded wet towel (12). Most participants in both study area were received in-service training on immediate newborn care

and gained adequate knowledge and skill specifically on placing immediately born baby on mother's abdomen, drying the whole body of baby and removing wet cloth used for drying.

Regarding knowledge of cutting umbilical cord, 100% of respondents in this study were used sterile scissor to cut the umbilical cord of baby between clamps. It is in line with a similar study of MAISHA program in Tanzania, 100 % in 2010 and 2012 was cuts cord with clean blade (12) but relatively higher than the study done in Khartoum, Sudan, were 83.3 % of nurse-midwives used sterile scissor during cutting the cord (1). Clean cord cutting and care minimizes infection and further complication of newborn baby. Most respondents in both study area are aware of the infection a newborn baby will acquired during cord cutting. This might be due to most respondents in this study were acquired knowledge on cord care and cutting because of the in-service training received on immediate newborn care.

The knowledge of study participants on immediate newborn care of this survey were good (17.7 %), fair (57.1%) and poor (25.2%). This is relatively lower than study done in Egypt, where knowledge of nurse midwives towards immediate newborn care was good (43.5%), fair (8.7%) and poor (47.8%) (13).This might be related to the education status of respondent's where there is presence of degree and speciality in the study done in Egypt.

Overall 82.3% of participants of this survey respond positively to mother's questions, and 75.5% counsel's mother on danger sign newborn baby before discharge. This is comparatively higher than similar study done at university hospital of Egypt where 52.2% respond to mother's questions appropriately and 69.5% of them didn't prepare the newborn or their mother for discharge (13). Responding positively to mother's question might increase delivery service at health facilities and increases care provided for newborn baby and counselling mother on newborn danger sign causes the mother to appreciate newborn complication and take appropriate measures on time which decreases further problems a baby will face. The difference between the two studies could be one part of the emphasis given by government on maternal and newborn health like giving delivery service without payment and respecting or motivating mothers will enhance mother's to use health facility delivery service and improve maternal and newborn health in this study.

About 99.3% of participants in this study were not practiced to put baby identification bands on the wrist and ankle of baby after delivery. This is consistent with the study done in Khartoum, Sudan, were 2.1% of nurse midwives were put baby identification bands before cutting the cord (1). This will increases misshaping or exchange of babies in busy delivery

room or time. This might be related to the careless behaviour of respondents on using newborns identification on both areas.

Practice of respondents towards immediate newborn care in this study were 52.4% which is relatively higher than what was found in the study done in Khartoum Sudan, the practice of nurse midwives towards immediate care of newborn were 41.1% (1). This might be due to the descriptive statistics used at both study areas, that is the study done in Sudan had taken mean where as in this study practice was calculated from median.

In this study there is no significance difference on practice of newborn care for those who did not got in-service training comparing to those who had got in-service training. This is in line with the study done in Haryana, India that showed practice of the nurse midwives who had undergone some special training courses were compared with those who have had no such training and no significant differences were found in any of the practices between the trained and the untrained (17). This might indicate that respondents had got training but there might not be following up by responsible bodies and lack of adequate supply of equipments to practice the training they got in their health facilities. This could lead respondent midwives to follow their previous routine activities/practice.

This study also showed that there is no significance difference of knowledge on practice which is consistent with the same study done in Egypt, where there is no significance difference between nurses' midwives knowledge and practices regarding newborn care after birth (13). To practice their knowledge suitable environment is necessary that could be related with availability of materials for practice, and follow up and support from governmental and nongovernmental bodies.

Work environment was significantly associated with practice of newborn care (p=0.000, AOR=0.18(0.07, 0.43). Midwifes working at health center were 82% lower odds of newborn care compared to those working in the hospitals. This is different from the same study done by MAISHA program in Tanzania, there was not very much difference by level of health facility in all of the immediate essential newborn care practice (12). This might be due supply of equipments starts from hospitals then to health centers of remote areas this availability of equipment helps midwives to practice.

Strengths and Limitations of the Study

Strength of the study

- Instruments (Questionnaire) used to collect data was adopted from validated sources and pretested in the local context with required modification
- The Data collection procedure used was observation which shows actual performance of midwives.
- Strict supervision by principal investigator and supervisors.

Limitation of the study

- Lack of enough time for data collection and analysis of results
- Sampling procedure used for this study was convenience so it is limited to talk with this to the general population**.**
- The sample size used might not be enough to detect the statistical difference between the explanatory variable and outcome variable
- The cause effect relationship of the exposure and outcome might not be causal due to the nature of the study, cross sectional study and could not show seasonal variations.
- Problem of transport service to reach to very distant health facilities because of this data were collected from health facilities which have suitable transport service and nearest to towns and there was lack of getting information on remote health facilities which might not representative of the health facilities in periphery.
- Lack/Shortage of enough references

CHAPTER- SEVEN: CONCLUSION AND RECOMMENDATIONS

7.1. Conclusion

- Even though most midwives received in-service training on immediate newborn care the Study results shows midwives had knowledge and practice gap on care given to immediately born baby.
- Significant number of midwives was squeezed out colostrums before breast feeding the newborn which ignores the baby from receiving important nutrients and immunoglobulin's.
- Most respondent's midwives didn't wash hands with soap and water before and after delivery and a significant number of midwives conducted delivery under unclear delivery room. This could facilitate transmission of infection to the mother, newborn baby, and health care provider and may affect the future health of baby.
- Almost all midwives were applied Tetracycline ointment to each eye of baby but in more than half midwives, the tip of the tube touched the eye of the baby and used for other baby causes cross contamination of infection from one baby to another.
- Significant number of midwives did not practice well cord tie and cuts cord soon after delivery. Cutting the cord soon after delivery can decrease the amount of blood that is transfused to the baby from placenta; it is likely to result in subsequent and repeated infections.
- All midwives who responded for this study had a big problem on placement of baby identification band in the baby's wrist or ankle. This may misshape (exchange) babies in busy delivery rooms.
- There is no significant association between most socio-demographic characteristics of midwives; knowledge and history of in-service training on newborn care with the participants' practice of newborn care.
- Work environment was significantly associated with practice of midwives on immediate newborn care. Midwifes working in health center were 82% lower odds of newborn care compared to those working in the hospitals (p=0.000, AOR=0.18(0.07, 0.43).

7.2. Recommendation

Based on the result findings from this study, Federal ministry of health, Tigray regional health bureau, and other stakeholders in collaboration with woreda health bureau and Midwives are encouraged to:

- Strengthen in-service training given to midwives on immediate newborn care periodically and regularly.
- Continue supporting midwives to increase knowledge and practice on care of immediately born baby by providing repeated in-service training and follow up.
- Provide strict observational supervision at each health facilities for each midwife who gives delivery and newborn care.
- Upgrade educational status of midwives.
- Enforce midwives to place baby identification band on the wrist and ankle of baby after delivery.
- Provide motivation to those who have knowledge and practiced well on the care given immediately after delivery.
- The department of midwifery also recommended including all steps of care given to immediately born baby on the curriculum.
- Further detail investigation on knowledge and practice of midwives on immediate newborn care should be recommended.

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ANNEXES

Annex-I A: Participant information sheet English version

How are you? My name is Tesfay Tsegay. I am from Addis Ababa university health Science College, Department of Nursing and Midwifery. I am conducting a study for partial fulfilment of master of paediatrics and Child health Nursing.

I am here to find out midwives knowledge and practice towards immediate newborn care which helps the midwives improve their care to this age group to reduce neonatal mortality. I would very much appreciate your participation in this survey. You are selected to participate in this study conveniently. The following are some general information about the study.

Objectives of the study: The objective of this study is to assess Knowledge and practice of immediate newborn care among Midwives in governmental health facilities of central zone Tigray Regional State, North Ethiopia, from January- June, 2015.

Participants to be included: Participants to be included in this study are midwives recruited by government who give immediate newborn care on delivery and postnatal care in central zone Tigray regional sate health facilities.

Confidentiality: All information you give will be kept confidential and won't be accessible to any third party; your name won't be registered on the question sheet so that you will not be identified for any reason.

Benefits of the study: For your participation in the study no payment will be granted or has no any special privilege to you, but participating in the study and giving your genuine information will provide great input to bring change in quality of health service to newborns.

Risks of the study: The procedure does not bear any physical or psychological trauma. Furthermore you will not be forced to respond to information you do not know.

Consent: Your participation in the study will be totally based on **your willingness**. You have the right not to participate from the beginning, or you may stop participating at any time after starting the participation. You won't be forced to give information that you do not know.

Rights as a participant: 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. However, I hope that you will participate in this survey since your views are important.

Annex- I B: Participant consent form English version

I have read this form or it has been read to me in the language I understand all conditions stated above. Therefore, I am willing to participate in this study.

Signature _____

Name of **PI**: Tesfay Tsegay

Address: Tell 09 25 44 22 48

E-mail tesfaytsegay4@gmail.com

Name of witness _____

Signature _____

Date of interview----------Time started---------- Time completed----------

Result of interview:

1. Completed 2. Refused 3. Partially completed

Checked by:

Supervisor Name----------signature----------Date---------

If no, skip to the next participant by writing reasons for his/her refusal ----------

Annex-I C. English version Questionnaire

Part I- Socio-demographic information among midwives in central zone Tigray, 2015

Ser. No	Question	Possible response
101	Sex	1. Male 2. Female
102	Age	----------in year
103	Religion	1. Orthodox 2. Muslim 3. Protestant 4. Catholic 5. Others (specify)----------
104	Marital status	1. Single 2. Married 3. Divorced 4. Widowed 5. Separated
105	Ethnicity	1. Tigray 2. Amhara 3. Oromo 4. Others(specify)_____
106	Educational level	1. Diploma 2. Degree 3. Master
107	Monthly Salary	----------

108	Work Environment	1. Hospital 2. Health Center
109	Work experience	----------years

Part- II: questionnaire on knowledge of immediate newborn care among midwives in central zone Tigray regional state, 2015.

Ser. No	**Question**	**Possible response**
201	Do you receive in-service training on immediate newborn care?	1. Yes **2.** No
202	If yes, how many times have you got in-service training?	1. One 2. Two **3.** >Two
203A	Do you have knowledge on care given to immediately born baby?	1. Yes 2. No
203 B	Do you know the immediate newborn care? If possible mention all the steps	**1.** Deliver baby onto mother's abdomen **2.** Dry baby and eye care **3.** Assessing breathing **4.** Cord cutting and care **5.** Early initiation of breast feeding **6.** skin-to-skin contact with mother **7.** Apply Tetracycline eye ointment **8.** Giving Vitamin K **9.** Weigh baby **10.** Others specify--------
204	Do you know the complication of immediately born baby?	1. Yes 2. No
205	If yes, what are the complications/problems?	1. Hypothermia 2. Asphyxia 3. Infection 4. Others (specify)--------
206	How do you prevent the above mentioned complications/problems?	**1.** Deliver baby onto mother's abdomen **2.** Dry baby and eye care **3.** Assessing breathing **4.** Cord cutting and care **5.** Early initiation of breast feeding **6.** skin-to-skin contact with mother **7.** Apply Tetracycline eye ointment **8.** Giving Vitamin K **9.** Weigh baby **10.** Others specify--------
207	Where do you keep the baby immediately after delivery?	1. Mothers abdomen 2. Clean and separate place/table

		3. Put simply on any place 4. Others specify--------
208	Do you know skin-to- skin contact?	1. Yes 2. No
209	If yes, what is the advantage of skin-to- skin contact?	1. Prevent from hypothermia 2. Help baby to stay warm 3. Others specify--------
210	What do you do if the baby not cries after delivery?	1. Suck the baby 2. Call a help and start resuscitation 3. Start cardio-pulmonary resuscitation 4. Nothing 5. Others specify--------
211	What do you use to cut the cord after tied?	1. New Surgical blade 2. Sterile Scissor 3. Previously used blades 4. Previously used Scissor without sterilizing 5. Nothing 6. Others specify--------
212	What do you apply after cutting to the cord?	1. Butter 2. Dung 3. Others specify-------- 4. Nothing
213	Do you know the advantage of early initiation of breast feeding?	1. Yes **2.** No
214	If yes, What are the advantages of early initiation of breast feeding?	1. Enhances bonding of mother and baby 2. Prevents from hypoglycaemia 3. Prevents from hypothermia 4. Prevents infection 5. Others (specify)----------
215	When do you initiate breast feeding for immediately born baby?	1. Within one hour of delivery 2. After one hour of delivery 3. I do not know
216	Do you Squeezed out the colostrums before Breastfeeding the newborn.	1. Yes 2. No
217	Do you know the advantage of first milk/colostrums?	1. Yes 2. No
218	If yes, What are the advantages of colostrums?	1. Protection from infection 2. Gives important nutrients to the baby 3. Others (specify)----------
219	Do you give Vitamin k to immediately born baby?	1. Yes **2.** No
220	If yes, what is the importance of	

	giving Vitamin k	----------
221	When do you bath the newborn?	1. Before 24 hour delivery 2. After 24 hour of delivery 3. I do not know
222	Do you provide eye ointment to immediately born baby?	1. Yes 2. No
223	If yes, what is the importance of eye ointment?	-------
224	Do you weigh immediately born baby?	1. Yes 2. No
25	If No, why not?	----------

Part-III: Observational checklist for practice of midwives on immediate newborn care at central zone Tigray regional state, 2015.

Directions:

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

1 = Performs the step or task completely and correctly.

0 = **Is unable to perform the step or task completely or correctly or the step/task was not observed**.

Ser. No	Question/Checklist	SCORES	
		0	1
	Part-I Preparation of equipment to receive the newborn		
301	delivery room clean		
302	Cord tie and clamp prepared		
303	Baby identification material prepared		
304	Suction device prepared		
305	Neonatal ambu bag and mask prepared		
	Part-II immediate care of newborn		
306	Washes hands with soap and water, dries them with a clean dry cloth or air-dries them before and after care.		
307	Puts on sterile glove		
308	Wipes the eyes and face when the head is delivered		
309	Clean eyes immediately after birth with swab soaked in sterile water, using separate swab for each eye.		
310	Immediately dry the whole body including the head and limbs		

	with a cloth/towel while assessing the baby's breathing		
311	Delivery surface covered with sterile dry towel		
312	Removes wet cloth used to dry the baby.		
313	Keeps warm by putting the baby skin-to-skin contact with the mother putting a cap on the baby's head and covering mother and baby together with a blanket?		
314	Cover the baby's body and head with clean cloth.		
315	Check if the baby is crying while drying it.		
316	**S**ucks the air way after delivery		
317	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		
318	Use appropriate size of mask if there is neonatal resuscitation		
319	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.		
320	Cuts the cord after 2-3 minutes with sterile scissors or surgical blade, under a piece of gauze in order to avoid splashing of blood.		
321	Explains to mother not to put anything on cord stump.		
322	Take Apgar Score within 1^{st} and 5^{th} minutes		
323	Place newborn's identification bands on the wrist and ankle		
324	Provide prelactal feeding		
325	Squeezed out colostrums before breastfeeding the newborn		
326	Helps mother and baby to start breastfeeding before separating them to give any other newborn care		
327	Initiates breast feeding within one hour after delivery		
328	Helps mother and baby get into a good position and attaches for breastfeeding.		
329	Mother and baby kept together in labour room		
330	Applies one drop Tetracycline 1% ointment to each eye		
331	The tip of the tube does not touch the eye of the baby		
332	Weighs the baby		

333	Washes baby within 24 hours		
334	Not washed the baby until discharge		
335	Counsels mother how to bath baby		
336	Give Vit K		
337	Head-to-toe examination		
338	Responds to mothers question		
339	Counsels mother newborns danger sign before discharge.		
340	Records all care given on the birth record		

Annex- II A: Participant information sheet Tigrigna version

1. <u>ናይ ሓበሬታ ወረቐት</u>

ጥዕና ይሃበለይ? ስመይ ተስፋይ ፀጋይ ይበሃል። ካብ ኣዲስ ኣበባ ዩኒቨርሲቲ ጥዕና ሳይንስ ኮለጅ ነርሲንግ ትምህርት ክፍሊ እየ መሚአ። ዝመላእኩሉ ዋና ምክንያት ብናይ ህፃናት ህክምና ማስተር ብነርሲንግ መመረቂ ፅሑፍ ንምስራሕ እንትከውን ሚድዋይፍ ንዕሽል ህፃናት ዝወሃቡ ክንክን ዘለዎም ፍልጠትን ተግባርን ንምጋምጋም እዩ። ኣብዚ መዕናዕቲ ንክትሳተፉ ዝተመረፅኩምሉ ምክንት ባኢጋጣሚ ኩይኑ ኣቀዲመ ንእትገብርዎ ተሳትፎ የመስግን። ኣጠቃላይ ናይ መፅናዕቱ ሓበረታ ከም ዝስዕቡ ይመስል።

<u>ናይ መፅናዕቱ ዓላማ:-</u> ኣብ ትግራይ ክልል ዞባ ማእከል ናይ መንግስቲ ጢዕና ተቃማት ዝርከቡ ሚድዋይፍ ንዕሽል ህፃናት ዝወሃቡ ክንክን ዘለዎም ፍልጠት እና ተግባር ንምጋምጋም እዩ።

<u>ኣብዚ መዕናዕቲ ዝሳተፉ በዓል ሙያታት:-</u> ናይዚ መፅናዕቲ ተሳተፍቲ ኣብ ትግራይ ክልል ዞባ ማእከል ናይ መንግስቲ ጢዕና ተቃማት ዝርከቡ ብመንግስቲ ዝተቆፀሩ ሚድዋይፍ ኮይኖም ንዕሽል ህፃናት ክንክን ዝህቡ እና ዘዋልዱ እዮም።

<u>ሚስጢር</u>:- ተሳተፍቲ ንዝህብዎም ሓበረታ ሚስጢሩ ዝተሓለወ እዩ።እዙይ ንምርግጋ ስሞም ምንጋር እና ምምዝጋብ ኣየድልን። ካብዙይ ብተወሳኪ ዝህብዎ ሓበሬታ ንማንም ሳልሳይ ወገን ኣሕሊፍካ ኣይወሃብን።

<u>ናይ መፅናዕቱ ጥቅሚ:-</u> ኣብዚ መፅናዕቲ ብምስታፍም ዝረክብዎ ጥቅሚ የለን ይኹን እምበር ዝህብዎ ሓበሬታ ንዕሽል ህፃናት ዝግበር ክንክን ዝበለፀ ንክከውን ዘለዎ ኣስተዋፆ ዝለዓለ ስለዝኾነ ተሳትፎኣም ኣድላይ ምካኑ ንዝገብርዎ ምትሕብባር ኣቀዲመ የመስግን።

<u>ናይ መፅናዕቱ ጉድኣት:-</u> ብዝገብርዎ ተሳትፎ ምንም ዓይነት ጉድኣት ዘይበፅሖም እንትከውን ሓበሬታ ንዘይምሃብ ኣብ ዝደልዩሉ ግዜ ኣይግደዱን።

<u>ፍቃድ</u>:- ተሳትፎኣም ብፍቃዶም ዝተመስረተ እንትከውን ካብ መጀመሪያ ወይ ኣብ ደስ ዝበሎም ግዜ ሓሳብ ካብ ምሁብ ምዕቃብ መሰሎም እዩ። ሓበሬታ ብዘይ ምሃቦም ዝመፆም ምንም ስግኣት የለን።

ናይ ተሳታፊ መሰል:- ምንም ዓይነት ሕቶ እንተሃሊዩዎም ብማንኛው ሰዓት ምጥያቅ ዝከኣል እንትከውን ተሳትፎኦም ሙሉእ ብሙሉእ ኣብ ፍቃዶም ዝተመሰረተ እዩ። ስለዝኾነ ደስ ኣብ ዘይበሎም ግዜ እና ደስ ዘይበሎም ሕቶ ዘይምምላስ መሰሎም እዩ። ይኹን እንበር ዝህብዎ ሓሳብ ንዘካይዶ መፅናዕቲ ጠቃሚ ስለዝኾነ ሙሉእ ብሙሉእ ንክሳተፉ ተስፋ ይገብር።

Annex-II B: Participant consent form Tigrigna version

2. **ፍቃድ መግለፂ ወረቀት**

ኣብ ላዕሊ ብዛዕባ መፅናዕቱ ዝተፅሓፈ ፅሑፍ ብዝርደአኒ ቋንቋ አንቢበ ወይ ተነቢቡለይ ብምርደአይ ኣብመፅናዕቱ ብፍቃደይ ንምስታፍ ብፊርማይ የረጋግፅ።

ፊርማ_____

ናይ ሓታቲ ስም_____ ፊርማ_____
ቃለ-መጠይቁ ዝተጀመረሉ ቀን_____ ዝተጀመረሉ ሰዓት_____ ዝተወደአሉ ሰዓት_____

ናይ ቃለ-መጠይቁ ውፅኢት
1. ሙሉእ ብሙሉእ ተዛዚመ 2. ሙሉእ ብሙሉእ ኣይተሳተፈን 4. ብከፊል ተሳቲፉ
ናይ መተሓባበሪ ስም----------ፊርማ----------ዕለት---------

ኣይሳተፍን እንተይሎም ናብ ዝቅፅል ተሳታፊ ተሻገር።

Annex-II C: Tigrigna version Questionnaire.

ናይ ትግርኛ ቃለ-መጠይቅ

ክፍል 1- ማሕበራዊ እና ስነ-ህዝባዊ ገፅታ ዝምልከት ኣብ ዞባ ማእከል ትግራይ ናይ ዝርከባ መዋልዳን 2015.

ተ.ቁ	ሕቶ	መልሲ
101	ፆታ	1. ተባዕታይ 2. ኣንስታይ
102	ዕድመ ብዓመት	----------
103	ሃይማኖት	1. ኦርቶዶክስ 2. መስሊም 3. ፕሮቴስታንት 4. ካቶሊክ 5. ካሊእ ጥቀስ----------
104	ናይ ሓዳር ኩነታት	1. ሓዳር ዘይብላ/ሉ 2. ሓዳር ዘለዋ/ዎ 3. ዝተፋተሐት/ሐ 4. ሰብኣያ ዝሞታ/ሰበይቱ ዝመተቶ 5. ተረሓሒቆም ዝነብሩ

105	ብሄር	1. ትግራይ 2. ኣማራ 3. ኦሮሞ 4. ካሊእ ጥቀሲ/ስ_____
106	ናይ ትምህርቲ ደረጃ	1. ዲፕሎማ 2. ዲግሪ 3. ማስተር
107	ወርሓዊ ደመወዝ	.....
108	ናይ ስራሕ ቦታ	1. ሆስፒታል 2. ጥዕና ጣብያ
109	ስራሕ ልምዲ ብዓመት	----------

ክፍል II: ንዕሽል ህፃናት ዝወሃቡ ክንክን ዘለዎም ፍልጠት ዝምልከት **ቃለ-መጠይቅ** ኣብ ዞባማእከል ትግራይ ናይ ዝርከባ መዋልዳን 2015

ተ.ቁ	ሕቶ	መልሲ
201	ንዕሽል ህፃናት ዝወሃቡ ክንክን ዝተመለከተ ስልጠና ወሲድኪ/ካ ትፈልጢ/ጥ ዶ?	1. እወ 2. ኣይፈልጥን
202	መልሲኪ/ካ እወ እንተኾይኑ ክንደይ ግዜ ሰልጢንኪ/ካ?	1. ሓደ ግዜ 2. ክልተ ግዜ 3. ካብ ክልተ ንላዕሊ
203 A	ዕሽል ንዕሽል ህፃናት ዝወሃቡ ክንክንትፈልጢዮም/ጦም ዶ?	1. እወ 2. ኣይፈልጥን
203 B	መልሲኪ/ካ እወ እንተኾይኑ ዝርዝሮም ግለፂ/ፅ;	1. ህፃኑ ናብ ኣዲኡ ከብዲ ምውላድ 2. ህፃኑ ምድራቅን ዓይኑ ምክንካንን 3. እስትንፋሱ ምፍታሽ 4. ዕትብቲ ምቁራፅን ምክንካንን 5. ተሎ ናይ ኣዶ ጡብ ምጅማር 6. ናይ ህፃን ሰውነት ምስ ኣዶ ሰውነት ምንክካእ 7. ተትራሳይክሊንዱማታናብ ህፃኑ ዓይኒ ምግባር 8. ቫይታሚን k ምሃብ 9. ህፃን ምምዛን 10.ካሊእ ጥቀስ-----
204	ዕሽል ህፃናት ከጋጥሙዎም ዝክእሉ ሽግራት ትፈልጢዮም/ጦም ዶ?	1. እወ 2. ኣይፈልጥን
205	መልሲኪ/ካ እወ እንተኾይኑ ዘጋጥሙ ሽግራት እንታይ እንታይ እዮም?	1. ሰውነት ምዝላል 2. ናይ ምትንፋስ ሽግር 3. ሕማም 4. ካሊእ ጥቀሲ/ስ--------
206	ኣብ ላዕላይ ዝተዘርዘሩ ሽግራት	1. ህፃኑ ናብ ኣዲኡ ከብዲ ምውላድ

	ከይፍጠሩ ብከመይ ክትከላከሊዮም/ሎም ትክእሊ/ል?	2. ህፃኑ ምድራቅን ዓይኑ ምክንካንን 3. እስትንፋሱ ምፍታሽ 4. ዕትብቲ ምቁራፅን ምክንካንን 5. ተሎ ናይ ኣዶ ጡብ ምጅማር 6. ናይ ህፃን ሰውነት ምስ ኣዶ ሰውነት ምንክካእ 7. ተትራሳይክሊንዱማታናብ ህፃኑ ዓይኒ ምግባር 8. ቫይታሚን k ምሃብ 9. ህፃን ምምዛን 10. ካሊእ ጥቀስ-----
207	ወዲያውኑ ዕሸሉ ምስተወለደ ኣብምንታይ ተቀምጥዮ/ጦ?	1. ኣብ ኣዲኡ ከብዲ 2. ንፁህን ዝተፈለየን ቦታ ወይ ጠረጴዛ 3. ኣብ ዝኾነ ቦታ 4. ካሊእ ጥቀስ-----
208	ዕሸል ህፃናት ምስ ኣዲኦም ቐርበት ንቐርበት ምንክካእ ጥቅሙ ትፈልጢዮ/ጦ ዶ?	1. እወ 2. ኣይፈልጦን
209	መልሲኪ/ካ እወ እንተኮይኑ ጥቅሙ እንታይ እዩ?	1. ካብ ሰውነት ምዝሓል ይከላከል 2. ሙውቅ ኮይኑ ንክፀንሕ ይገብር 3. ካሊእ ጥቀስ-----
210	ዕሸል ህፃን ምስተወለደ እንተዘይበክዩ እንታይ ትገብሪ/ር?	1. ናይ ህፃኑ ኣፍ ምዕራግ 2. ሓጋዚ ብምዕዋዕ ህፃኑ ሪሳሲቴት ምግባር 3. ካርዲዮ ፑልመናሪ ሪሳሲቴት ምጅማር 4. ኣይፈልጦን 5. ካሊእ ጥቀስ-----
211	ዕትብቱ ምስ ኣሰርኪዮ/ካዮ ብምንታይ ትቐርፂዮ/ዮ?	1. ሓዱሽ ናይ ሰርጀሪ ላማ 2. ንፁህ መቀስ 3. ቅድሚ ህዚ ዝተጠቀምሉ ላማ 4. ቅድሚህዚ ዝተጠቀምሉ መቀስ በዘይ ምምካን 6. ኣይፈልጦን 5. ካሊእ ጥቀስ-----
212	ዕትብቱ ምስ ተቐረፀ እንታይ ትገብርሉ/ረሉ?	1. ጠስሚ 2. ዒባ 3. ካሊእ ጥቀስ-----
213	ዕሸል ህፃን ምስተወለደ ተሎ ናይ ኣዶ ጡብ ምጥባዎ ጥቅሙ ትፈልጢዮ/ጦ ዶ?	1. እወ 2. ኣይፈልጦን

214	መልሲኪ/ካ እወ እንተኮይኑ ጥቅሙ እንታይ እዩ?	1. ኣዶ ምስ ህፃን ዘለዎም ርክብ የጠናክር 2. ናይ ህፃኑ ግሉኮዝ መጠን ንክይቅንስ ይገብር 3. ካብ ሰውነት ምዝሓል ይከላከል ካብ ሕማም ይከላከል 4. ካሊእ ጥቀሲ/ስ--------
215	ወዲያውኑ ንዝተወለደ ህፃን መዓዝ ናይ ኣዶ ጡብ ትጅምርሉ/ረሉ?	1. ምስተወለደ ኣብ ውሽጢ ሓደ ሰዓት 2. ምስተወለደ ድሕሪ ሓደ ሰዓት 3. ኣይፈልጦን
216	ልግዐ ሓሊብኪ/ካ ተፍስዮ/ሶ ዶ?	1. እወ 2. ኣየፍሶን
217	ናይ ልግዐ ጥቅሚ ትፈልጢዮ/ጦዶ?	1. እወ 2. ኣይፈልጦን
218	መልሲኪ/ካ እወ እንተኮይኑ ጥቅሙ እንታይ እዩ?	1. ካብ ሕማም ይከላከል 2. ጠቀምቲ ንጥረ-ነገራት ህፃኑ ንክግኒ ይሕግዝ 3. ካሊእ ጥቀስ--------
219	ቨይታሚን K ወዲያውኑ ንዝተወለደ ህፃን ትህቢ/ብ ዶ?	1. እወ 2. ኣይህብን
220	መልሲኪ/ካ እወ እንተኮይኑ ጥቅሙ እንታይ እዩ?	----------
221	ህፃኑ መዓዝ እኪ/ካ ትሓፅብዮ/ቦ?	1. ምስተወለደ ኣብ ውሽጢ 24 ሰዓት 2. ምስተወለደ ድሕሪ 24 ሰዓት 3. ኣይፈልጦን
222	ህፃኑ ምስተወለደ ዶማታ ናብ ዓይኑ ትገብርሉ ረሉ ዶ?	1. እወ 2. ኣይገብረሉን
223	መልሲኪ/ካ እወ እንተኮይኑ ጥቅሙ እንታይ እዩ?	-------
224	ህፃኑ ምስተወለደ ትመዝኒዮ/ኖ ዶ?	1. እወ 2. ኣይመዝኖን
25	መልሲኪ/ካ ኣይመዝኖን እንተኮይኑ ንምንታይ?	_____

ክፍል III: ንዕሽል ህፃናት ዝወሀብ ክንክን ናይ ትዕዝብቲ ቸክሊስት ኣብ ዞባ ማእከል ትግራይ ናይ ዝርከባ መዋልዳን 2015.

መምርሒ:

ሕድሕድ ሚድዋይፍ ንዕሽል ህፃናት ዝህብዎ ክንክን ኣብ ዝስዕብ ብዝተቀመጡ ቸክሊስት ብምዕዛብ ከም ዝቅዕል ደረጃ ሃብዮም/ቦም፡

1 = ሙሉእ ብሙሉእ እና ብትክክል ፍፂሞምዎ።

0 = ሙሉእ ብሙሉእ እና ብትክክል ኣይፈፀሙዎን ወይ ደግሞ ኣይሞከርዎን።

ተ. ቁ	ቸክሊስት	ውጤት	
		0	1
	ንምውላድ ዝግበር ቅድመ ዝግጅት		
301	መዋለዲ ክፍሉ ንፅህና		
302	ዕትብቲ መእሰሪ እና መቁረዊ ተቀሪቡ		
303	ዕሸል ህፃኑ መፍለዩ ማተርያል ተቀሪቡ		
304	ሳክሸን ማተርያል ተቀሪቡ		
305	የህፃናት ኣምቡላን እና ማስክ ተቀሪቡ		
	ዕሸል ህፃን ምስተወለደ ዝወሃቦ ክንክን		
306	ኢዶም ቅድሚ እና ድሕሪ ክንክን ብማይን ሳሙናን ተሓዊቦምብንፁህ ጨርቂ ኣድሪቀምዎ		
307	ሰርጂካል ግላብ ገይሮም		
308	ዕሸል ህፃኑ ርእሱ ምስወፀ ዓይኑ እና ገፁ ፀሪገምዎ		
309	ዕሸል ህፃኑ ሙሉእ ብሙሉእ ምስተወለደ ኣይኑ ብንፁህ ማይ ዝተርከሰ ጡጥ ፀሪገምዎ። ሓደ ብንፁህ ማይ ዝተርከሰ ጡጥ ንሓደ ዓይኒ ጥራሕ።		
310	ዕሸል ህፃኑ ወዲያውኑ ምስተወለደ ሙሉእ ሰውነቱ ርእሱ እና እድሩ ሓዊሱ ብኑፁህ ጨርቂ እናድረቁ ብትክክል ምትንፋሱ ኣረጋጊያም		
311	ዝውለደሉ ቦታ ብኑፁህ ጨርቂ ተሸፊኑ		
312	ዕሸል ህፃኑ ንምድራቅ ዝተጠቀምሉ ዝረሓሰ ጨርቂ ኣወጊዶምዎ		
313	ዕሸል ህፃኑ ምስኣዲኡ ሰውነት ንሰውነት ብምንክካእ፤ቐቢዕ ኣብ ርእሲ ህፃኑ ምግባር እና ህፃኑ ምስኣሪኡ ቆርበት ንቆርበት ብምንክካእ ብኮበረርታ ምሸፋን		
314	ዕሸል ህፃኑ ሙሉእ ኣካሉ ብኑፁህ ክዳን ምሸፋን		
315	ህፃኑ እናድረቀት/ቀ ምብካዩ ምርግጋፅ		
316	ህፃኑ ምስተወለደ መተንፈሲ ኣካሉ ምዕራግ		
317	ህፃኑ ምስተወለደ እንተዘይበክዩ ወይ ብ30 ደቂቃ ውሽጢ እንተዘይተንፊሱ ሓጋዚ ፀዊዑ ዕቱብቱ ብምእሳር እና ብምቁራፅ ሪሳሲተሽን ሂበምዎ		
318	ሪሳሲተሽን ክህቡ ከለዉ መጠኑ ምስህፃኑ ዝስማዕማዕ ተጠቂሞም		
319	ዕቱብቱ ክልተ ኣፃብዕቲ ካብ ህፃኑ ከብዲ እና ብምሕላብ ክልተ ኣፃብዕቲ ካፍቲ ናይመጀመሪያ እሳር ደጊሞም ኣሲሮም		
320	ዕቱብቱ ድሕሪ 2-3 ደቂቃ ብንፁህ መቀስ ወይ ሰርጂካል ላማ ምቁራፅ		
321	ንወላዲት ኣብ ዕትብቱ ምንም ነገር ንከይትገብር መኪሮም		
322	Apgar Score ብሓደ እና ብሓሙሽተ ደቂቃ ወሲዶም		

323	ንህፃኑ መፍለዩ ኣብ ኢዱ ወይ ኣብ እግሩ ኣቀሚጦም		
324	ቅድሚ ናይ ኣዶ ጡብ ካሊእ ነገር ሂቦምዎ/ዋ		
325	ልግዐ ሓሊቦም ኣፍሲሶምዎ		
326	ቅድሚ ካሊእ ክንክን ምሃብ ኣዶ ንህፃና ንክተጥቦ ሓጊዞም		
327	ምስተወለደ ኣብ ውሽጢ ሓደ ሰዓት ናይ ኣዶ ጡብ ኣጀሚሮም		
328	ኣዶ ህፃኑ ኣብ እተጥበሉ ግዜ ህፃኑ ብደንቢ ንክጠቡ ዝገብር ኣቀማምጣ እና ኣተሓሕዛ ንክህሉ ገይሮም		
329	እኖ እና ህፃኑ ብሓደ ኣብ መውለዲ ክፍሊ ተቀሚጦም		
330	ሓደ ጠብታ Tetracycline 1% ንሕድሕድ ዓይኒ ገይሮም		
331	ጠብታ ክገብሩ ከለው ናይቲ ቱቦ ጫፍ ዓይኑ ኣይነክአን		
332	ህፃኑ ምስተወለደ መዚኖምዎ		
333	ህፃኑ ምስተወለደ ኣብ ውሽጢ 24 ሰዓት ሓሚበምዎ		
334	ህፃኑ ካብ ጥዕና ተቐም ክሳብ ዝወፅእ ኣይተሓፀበን		
335	ንኣዶ ህፃኑ መዓዝ እና ከመይ ክትሓፅቦ ከምዘለዋ ምክሪ ሂቦም		
336	ቫይታሚን ከ ንህፃኑ ሂቦም		
337	ንህፃን ካብ ርእሱ ክሳብ ፅፍሪ እግሩ መርሚረምዎ		
338	ኣዶ ንእትሓቶ ሕቶ መልሲ ሂቦም		
339	ካብ ጥዕና ተቐም ቅድሚ ምውፃኦም ኣዶ ብዛዕባ ናይ ዕሸል ህፃን ሓደገኛ ምልክታት ምክሪ ሂቦም		
340	ዝሰርሕዎ ስራሕቲ ኩሉ መዝጊቦም		

DECLARATION OF THE PRINCIPAL INVESTIGATOR

I, the undersigned, declare that, this thesis is my original work, has never been presented in this or other university, and all resources and materials used herein have been duly acknowledged.

Name: TESFAY TSEGAY
Signature _____

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

Name: MRS. RAJALAKSHMI MURUGAN (MSC, ASSISTANT PROFESSOR AND PHD FELLOW)

Signature: _____