COLLEGE OF HEALTH SCIENCE
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Assessment of magnitude of Practice of essential newborn care and associated factors among health care workers in North shoa zone health facilities, Debre Berhan, Ethiopia, 2019

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To be approved by the examining board of college of health Science, Debre Berhan University

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Chairperson, examining committee   Signature   Date

Acknowledgment

List of acronyms and abbreviations

AMWs	Auxiliary Midwives
BEmONC	Basic Emergency Obstetric &Newborn Care
CEOs	Chief Executive officers
DBRH	Debre Berhan Referral Hospital
DBU	Debre Berhan University
EINC	Essential Immediate Newborn Care
ENC	Essential Newborn Care
HPs	Health Professionals
IESO	Integrated Emergency surgery and obstetrics surgeon
PI	Principal Investigator
PPE	Personal Protective Equipment
TTC	Tetracycline eye ointment
WHO	World Health Organization

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Abstract

Background - newborn health have a high stake in global health agenda, however, 7000 newborns die each day in the world. and the fact that the practice of low essential immediate care service contribute to the problem. This research identifies factors which were associated with the practice of essential newborn care.

Objective –The main purpose of this study was to assess essential new born care practice and associated factors among health professionals in North Shoa zone .

Method – A facility based cross sectional study conducted from 25-Feb-2019-25-Mar-2019. A total of 256 health professionals were involved in the study from randomly selected health facilities in North shewa zone. Data was collected by trained nurses using interview and observational checklist by using convenient method. Data were entered into EPi info and it was exported to SPSS version 20 for analysis. Descriptive statistics was generated to determine the practice of essential new born care practice and binary logistic regression was used to identify factors associated with the practice of essential new born care practice.

Result-A total of 256 health professionals were involved in the study. The overall practice of this study was 73.8% : 95% CI=68-79). Overall, 256 health professionals during observation and interview 99.2% of respondents immediately dry baby,99.2% warm the baby by putting baby with the mothers skin,256(100%) initiate breast feeding within one hour, 98% were provide vitamin K, 99.2% apply TTC eye ointment ,99.2% weigh baby.

Interest of health professionals (AOR=2.07:95% CI=1.04,4.118),availability   Vitamin K (AOR=4.457:95% CI=1.015,19.574) ,training on ENC (AOR=2.915:95% CI=1.05,8.097) ,age >39 years old were 89.5%   (AOR=0.105 :95% CI:0.024,0.456) were significantly associated factors of practice of essential newborn care.

Conclusion –Majority of health professionals had a good practice of essential newborn care which was satisfactory . In adjusted odds ratio, interest of health professionals, availability of vitamin k injection, training and age were significantly associated with practice of essential newborn care, so all necessary drugs and supplies for ENC should be fulfilled in hospitals and health centers to implement all of the WHO standards of essential newborn care.

 Key words:- practice , essential newborn care , health care workers, Ethiopia.

1.Introduction

1.1 Background

Immediate Newborn Care given by skilled health professionals to the neonate within the first four hour after birth prevents complications and ensuring survival delivery room. [1, 2, 3].

The Essential newborn(ENC) Protocol is a series of time bound and chronologically-ordered that a baby receives at birth and it has standardized effective procedural steps: drying baby within the 1st 30 seconds of delivery, evaluate breathing, cord care(after 1 to 3 minutes), keep the newborn warm (Prevent hypothermia), initiate breastfeeding within the first one hour, administer eye drops/eye ointment, administer vitamin k intramuscularly, place the newborn's identification bands, weigh the newborn when it is stable and warm, record all observations and treatment provided, delay bathing of the baby for 24 hours [4,5].

World Health Organization (WHO) recommends Essential New born Care (ENC); is designed to improve the health of newborns through interventions before conception, during pregnancy, at and soon after birth and in the postnatal period to reduce maternal deaths and disability, intrapartum stillbirths and term intrapartum-related neonatal deaths as well as the long-term burden of impairment [6,7].

Provision of immediate newborn care alone can prevent 50% of complications, 45% of neonatal deaths occur during birth and 75% of neonatal death by providing both immediate newborn and postnatal care [8].

Based on the WHO 2015 report globally every year, 2.7 million neonates die during the neonatal period, from this 98% of neonatal death developing region (33 neonatal death per 1000 live births) which is six times higher and eight times higher in least developed countries (42 death per 1000 live births) and developed countries (5 neonatal death per 1000 live births [9,10].

Ethiopia is one of the ten countries with the highest number of neonatal deaths globally and neonatal mortality has remained stable at around 37 deaths per 1000 live births. Evidence in Ethiopia showed that neonatal mortality is associated with poor immediate neonatal care practices .practice of health professionals to essential newborn care was relatively low and suggests that lack of knowledge may leads low provision of ENC. (11-13] The health of newborn is affected by the magnitude of problems and quality of care. The risk of mortality is high during birth and in the

early period of life. Clearly good essential care of the newborn will prevent many newborn emergences, like neonatal sepsis and tetanus infection by maintaining clean chain [14].

In Ethiopia according to the national BEmONC baseline assessment, 2007_2008, the use of specific evidence based intervention is low; use of parental antibiotics for newborn is 24% and provision of extra care to premature or low birth weight is 24% [15].

Immediate proper care of newborn is vitally important for survival, growth and development of a newborn. Evidence indicates that little is known about factors that determine problems related to immediate care of newborn. Some professionals may not compliance the standards of immediate newborn care.[16]. But, in Ethiopia hospitals and health centers in addition to this gap, midwives and nurses are providing ENC

Therefore, the main purpose of this study is to identify factor that affect the practice of health care providers towards immediate newborn care and to assess the practice of obstetricians to the established time-bound interventions during the 1st hour postpartum and to quantify correct performance of various interventions in health facilities.

1.2 Statement of the problem

Birth and the first day of life is the time of greatest risk for both the mother and the baby, resulting in nearly half of all newborn deaths and stillbirths. For live born babies, the risk of death is greatest on the day of birth. Even though remarkable progress has been made in recent decades to reduce the number of child deaths worldwide, neonatal mortality rate declined at a slower speed. Yet a large proportion of newborn deaths are preventable. Neonatal death accounts for 44% of under-five mortality [17].

As the worldwide data shows that the neonatal mortality is reducing, but more slowly than mortality among children aged 1–59 months. The global neonatal mortality rate fell from 37 deaths per 1,000 live births in 1990 to 19 in 2016.The relative decline in neonatal mortality 40 per cent was slower in sub-Saharan Africa than in the other regions. Most of newborn die in each year (62,000 newborn deaths per year) were due to preventable or treatable causes, and up to two-thirds could be saved by providing essential care to newborns which is occur due to poor ENC and stressful events surrounding delivery[18,19].

The risk of neonatal death is highest in Africa (41 deaths per 1000 live births. The sub-Saharan regions of Eastern, Western and Central Africa have between 42 and 49 neonatal deaths per 1000 live births. Ethiopia is the ranked at the sixth next to Congo among ten countries that account 76% of neonatal death in Africa . [20,21]

Ethiopia had one of the world's highest neonatal mortality rate (NMR) (28 per 1000 live births) in 2016 EDHS. The NMR was higher than that of Africa continent (27 deaths per 1,000 live births) and nine times higher than the developed countries (3 deaths per 1,000 live births), yet similar to the Sub Sahara African countries (29 deaths per 1000 live births[22, 23].

Since Ethiopia have multiple maternal and newborn health related problems like other developing countries. The neonatal health is not improving unlike health of less than five years old. Neonatal death account for more than 50% of the infant mortality and about 31% of under-five morality. The survey conducted on the trends of neonatal death from 1990-2016 shows there was some reduction as shown 54 neonatal death per 10000 live births in 1990, 49 neonatal death per 10000 live births in 2000, 39 neonatal death per 10000 live births in 2005, 29 neonatal death and post neonatal mortality rate was 19 deaths per 10000 live births in 2016 [24, 25,26].

The practice of ENC can be positively or negatively affected by level of education, work load, work experience, type of health institution they work, age, field of study, knowledge on ENC, availability of supplies ,interest to work at delivery room, monthly salary. The federal ministry health tries to give capacity and skill building training to midwifes to ensure essential newborn care practice in order to reduce neonatal mortality but still now there is no significant reduction of the neonatal death in Ethiopia, including the study area so this study will identify the factors associated with practice of essential newborn cares provided by the health professionals.

The study on the practice of essential newborn care in Ethiopia including the study area is very limited and this research may help to identify the main gaps of health professionals on the practice of WHO recommended essential newborn care.

1.3. Significance of the study

Different studies at different time was conducted to assess the neonatal mortality, which was decreasing but not significant. EDHS 2011 shows from a total death 71% was occurred during in the first week of life, the study conducted at Addis Ababa health facilities on the neonatal death shows that a 71.9 per 1000 live birth with early and late neonatal mortality rates of 50.9 1000 live berth from a total of 1334 singleton newborns which was associated with poor practice of essential newborn care. [27,28].

The study conducted in North shoa zone on the determinants of neonatal death shows not initiating breast feeding within one hour, no intake of colostrum, were significantly associated with neonatal death[29]. In order to reduce the neonatal death providing a good immediate newborn care is mandatory.

Still now neonatal mortality in Ethiopia and in the study area was not significantly reduced, still it is one of the major agendas of the government. One of the leading cause of neonatal hospital admission and neonatal death was poor practice of essential newborn care, there is a gap of practice of ENC, so this study identifies the gaps and major factors associated with practice of essential newborn care .

It helps to know the prevalence of the good practice of essential new born care and magnitude of poor practice of newborn care. It also determine factor that affect the practice of health care providers on immediate newborn care so as to recommend possible action.

 It also helps ensure availability of different resources and drugs

 Will be used as baseline information to plan appropriate interventions towards improving newborn health care services in the North shoa health facilities and other health facilities out of North shoa zone helps the policy makers and NGOs which work on neonates to plan to take measurements or actions.

2. Literature review

2.1 Practice of immediate essential newborn care.

A survey conducted in Myanmar, Australia only 31% of Auxiliary Midwives (AMWs), followed all four immediate newborn care practices for a normal birth. All six practices of safe childbirth and immediate newborn care were conducted by only 28% of AMWs [30].

A study conducted in Khartoum revealed that the overall practice of the ENC was 58.9%. During observation 89(92.7%) had perform dries the baby ,3(3.1%) wipes the eyes and face when the head is delivered,63 (65.6%) Cuts the cord with sterile scissors between the 2 sterile clamps,76(79.2%) ties the cord firmly about 2 fingers (3 - 4cm) from the baby's abdomen and cuts and 2 (2.1%) Put the identification bands before cutting the cord [31].

The overall newborn care practice conducted in Addis Ababa shows that from a total of 18 cases observed during procedure 16(88.8%) were practice correctly the WHO standards of newborn care. During observation 97.2% of health professionals dry and wrap baby, keeping the baby on the mother's abdomen (95.4%), early initiation of breast feeding (27.8%),proper cord and skin care(66.7%) provision of Vitamin K(83.3%), immunization(94.4%) [32].

The overall immediate newborn care practice in Bahir Dar City, was 59.7%. During observation 86.6% of respondents immediately dry baby,83(61.9%) warm the baby by putting baby with the mothers skin,113(84.3%) initiate breast feeding within one hour,131(97.8%) were provide vitamin K,103(76.9%) , apply TTC eye ointment 94.8% [33]

A study conducted in Tigray eastern zone shows that 72.8% of respondents have good newborn care practice; specifically 84.5%) of the participants have properly practice putting a baby on to mother's abdomen immediately after delivery, 184 (86.4%) of the participants place the baby in skin-to-skin contact and on the breast to initiate breastfeeding, 156 (73.2%) of participants apply Tetracycline eye ointment and 141 (66.2%) give Vitamin K IM on anterior mid-thigh but only 18 (8.5%) of participants apply chlorhexidine to cord after cord cutting [34].

A study conducted in Jimma zone shows that 51.1% had good level of practice. Among those 28 (10.3%) clean eyes immediately after birth from medial to lateral side with swab soaked in sterile water , 149 (54.8%) were giving eye ointment,238 (87.5%) Weigh and record the baby's weight. [35]

2.2 Factor associated with practice of immediate ENC among health care workers

A study conducted in Australia showed that having high knowledge on essential newborn care ,adequate supervision , and level of education were associated with good practice of ENC [30]

A Study conducted in Addis Ababa shows that service year, $\geq$10 years was associated with practice of essential newborn care . [32]

A study conducted in Tigray shows that availability of adequate materials for newborn care , having a national guideline about newborn care. training working in health centers were associated with practice of ENC [34].

A study conducted in Jimma shows that field of study being midwife , educational qualification, interest of participant to work in delivery room, training on ENC, good knowledge had significant association with practice of ENC among health professionals [35].

2.3 Conceptual frame work

The conceptual frame work is developed from the literatures review that incorporates the variables that had a significant statistical association with newborn care practice of health professionals. The arrows in the diagram show the relationship between the variables. As shown in the diagram, knowledge and essential newborn care practice can be affected by socio-demographic characteristics and Personal and institutional factors. On the other hand, knowledge can affect practice of essential newborn care.

Knowledge of health professionals towards steps of essential newborn care

Socio-demographic factors

✓ Marital status
✓ Educational level
✓ Qualification
✓ Field of study
✓ Monthly salary

newborn care practice

Personal and institutional factors:

✓ Interest to work in delivery room
✓ Work Experience
✓ In-service training
✓ availability of equipment and drugs
✓ supervision
✓ working in hospitals

Figure 1:-Schematic representation of conceptual framework developed from different literatures on the assessment of ENC practice among health care workers,2019 (30,32,34,35).

3. Objectives of the study

3.1 General objective

- ✓ To assess the magnitude of practice of essential newborn care and associated factors among health care workers in North Shoa zone, Debre Berhan, Ethiopia, 2019

3.2 Specific objective

- ✓ To assess magnitude of practice of essential newborn care among health care workers in North Shoa zone, Debre Berhan, Ethiopia, 2019 .
- ✓ To identify factors associated with practice of essential newborn care among health care workers in North Shoa zone, Debre Berhan, Ethiopia, 2019

4. Methodology

4.1 Study Area and Study Period

North Shoa zone is one of the administrative zones found in Eastern part of Amhara region at 130 km away from Addis Ababa, capital city of Ethiopia and 695 km away from the Bahir Dar capital city of Amhara region. Generally there are 24 woreda found in the North Shoa zone. There are 7 district hospitals and one referral hospital in the zone additionally two private hospitals are found in the zone. The capital city of North Shoa zone Debre Berhan town is located in North Shoa Administrative Zone, Amhara National Regional State, Ethiopia.

In North shoa zone a total of 9 government hospitals ,two private hospitals and 24 health centers at woreda main city and 55 health centers at kebele level in 24 woredas found in the zone.

The data was collected from 25-Feb-2019-25-Mar-2019

4.2 Study Design

Facility based cross sectional study design was employed to assess the immediate essential newborn care practice and associated factors among health professionals working in selected hospitals and health centers in North Shoa administrative zone, 2019.

4.3 Populations

4.3.1 Source population

All health professionals who working in North Shoa zone health facilities.

4.3.2 Study populations

All midwifes, Nurses, doctors, health officers and emergency surgery and obstetric surgery professionals who were currently or potentially assigned in delivery room in the selected health facilities in North Shoa zone.

4.4 Inclusion and exclusion criteria

4.4.1 Inclusion criteria

All midwifes, Nurses, doctors, health officers and emergency surgery and obstetric surgery professionals who were available during data collection in the selected health facilities .

4.4.2 Exclusion criteria

The study excludes those health professionals who are forbidden not potentially assigned in labor room due to punishment or other reasons like past poor experience, poor skills of ENC

4.5   Sample size determination and sampling procedure

A total of six hospital and fourteen health center were randomly selected and included to the study. From all health facilities found in N/Shoa zone six hospitals, Ataye hospital, Mehal meda hospital, Shewarobit hospital, Debre Berhan referral hospital and Debresina hospital , Arerti hospital and 14 health centers(Lemi health center, Shewa robit HC, Debre Berhan 04 HC ,Debre Berhan 07 HC , Debre Berhan o8 HC,Keyit HC, Ataye Hc, Debresina HC, Deneba HC, Mehal meda HC,Molale HC, Arerti and Aremania HC) were randomly selected health facilities. From the selected health facility, all health professional who currently and potentially assigned at delivery room were small in number , so all of them were included in the study; this yielded a total sample of 256 health profession as presented below

```
┌─────────────────────────────┐
│ Total 79 health facilities in│
│ North shoa zone             │
└─────────────────────────────┘
              │
              ▼
┌─────────────────────────────────┐
│ 20 randomly selected health facilities│
└─────────────────────────────────┘
        │                    │
        ▼                    ▼
┌──────────────────┐   ┌──────────────────┐
│ Total health     │   │ Total health     │
│ workers in 6     │   │ workers in  14   │
│ selected hospitals=80│ │ selected health  │
│                  │   │ centers=176      │
└──────────────────┘   └──────────────────┘
          │                │
          ▼                ▼
      ┌─────────────────────────┐
      │ Total sample size=256   │
      └─────────────────────────┘
```
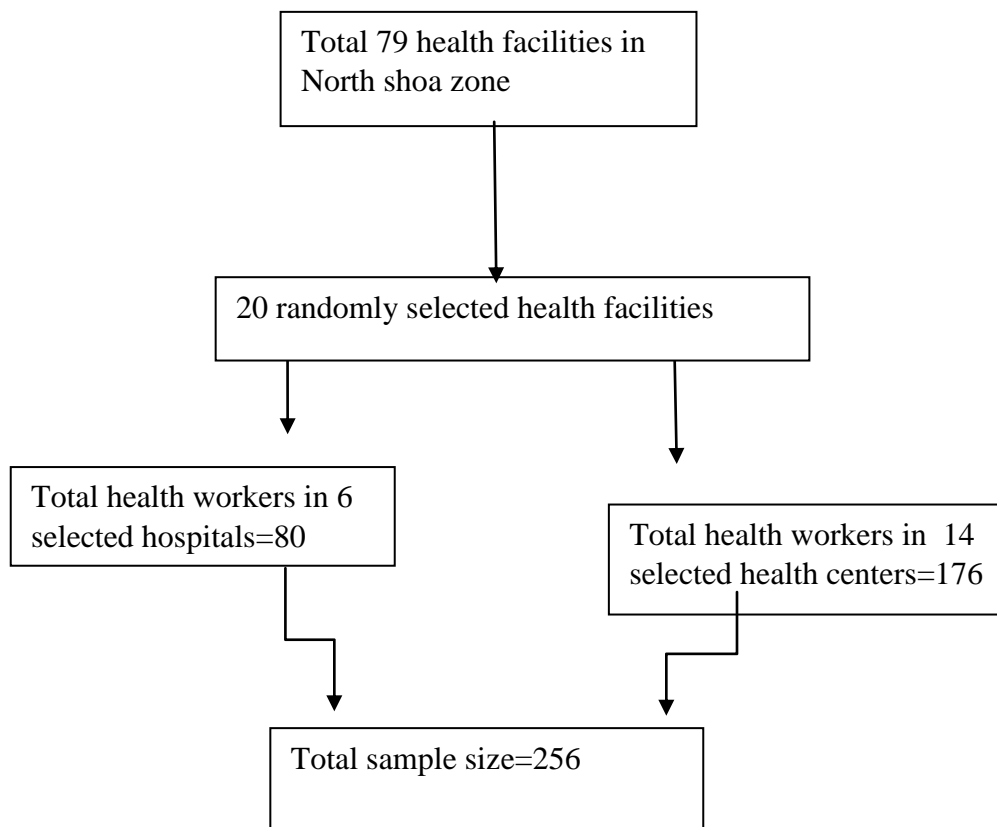
Figure 2:-schematic representation of sampling procedure to assess practice of ENC among health care workers in N/shoa zone, 2019.

4.6   Variables

4.6.1 Dependent variables

✓ Practice of essential newborn care

4.6.2 Independent variables

✓ Sociodemographic factors:-sex, age, religion, ethnicity, marital status, educational level, qualification, field of study and monthly salary.

✓ Knowledge of health professionals towards essential newborn care

✓ Personal and institutional factors: -interest to work in delivery room, work Experience, workload, in-service training and availability of equipment and drugs.

4.7 Operational definition

Good knowledge: - Participant who scored mean and above mean from 16 knowledge questions.

Poor knowledge: - Participant who scored below mean from 16 knowledge questions.[32,33].

Good practice: - Participants those scored mean and above mean from 10 observational checklist

Poor practice: - Participants those scored below mean from 10 observational checklist [32,33].

4.8 Data collection methods and tools

A structured questionnaire was developed by English version adopted from a research conducted at Addis Ababa and Bahir Dar city governmental health organizations that incorporates the Sociodemographic characteristics of the study subjects and knowledge[32,33]

Observational checklists for practice of neonatal care was adapted from WHO minimum neonatal care package and B E M O N C Training Manual FMOH 2013 and 2016[36]

Data about Sociodemographic ,knowledge and practice of newborn care was collected by nurses through interview technique and via clinical observational checklist. Data collectors were instructed to observe only being free from any bias, without commenting midwifes or nurse who provide delivery service . From each of the randomly selected hospitals and health centers two clinical nurse health professionals were be recruited from each of health facility for data collection and one Bsc nurse was also recruited from each health facilities for field supervisor and one day training was given 2 weeks before the actual data collection on how to administer the questionnaire, including skills of communication and to familiarize them with the data collection tool.

4.9 Data quality assurance

In order to maintain the quality of the data training was given for the data collectors and supervisors, data was checked on spot before the study participants leave out the room, close supervision of the data collectors, day to day communication of the field supervisors with complete forms and identified problems in the field. After data collection unique code was given to each questionnaire and it was cleaned and entered in to epi info.

4.10 Data processing and analysis plan

The collected data was checked for its completeness, consistency and accuracy before analysis. Data was coded and entered using Epi-Data version 7.2.0.1 and then the data was exported and analyzed by using statistical package for social science (SPSS) version 20. Descriptive statistics and logistic regression was computed.

Bivariate and multivariable logistic regression with unadjusted and adjusted odd ratio was used to identify factors associated with practice of new born care among health professionals. Crude odds ratio and adjusted odds ratio (AOR) was analyzed with a 95% confidence interval (CI) and p-value <0.05 was considered a statistically significant association. After bi-variable analysis all variables with P<0.2 was entered in to a multivariate logistic model to control the effect of confounders. Graphs, charts and tables were used to summarize and present major findings. Descriptive statistics like number and percent was used to illustrate socio demographic characteristics of the study population and other variables.

4.11 Ethical clearance

To conduct this research a written permission letter from Debre Berhan University, College of health science research committee was obtained .Verbal consent was obtained from the health professionals to confirm whether they are willing to participate or not. Confidentiality of the responses was ensured throughout the research process.

4.12 Result writing and dissemination plan

The major finding of the result was reported by using charts, tables and by report forms (narrations). Finally the finding of the result was submitted to department of public health, College of health science, DBU, and will be submitted to Ataye district hospital, Mehal meda district hospital, DBRH, Shoa Robit district hospital, North Shewa Zonal health Department, for different NGOs, for health centers and the paper will be sent for publication to available Journals.

5. Results

5.1 Sociodemographic characteristics of the study participants

Overall, 256 health care providers were included in the study. One hundred fifty six (59.8%) of health care providers were males. One hundred twenty three123(48%) of health care providers were 25-29 years of old with a mean age of 29 and standard deviation of 5.3.The majority of involved health professionals were midwifes, 104(40.6%), followed by nurses 97(37.9%). The majority of health professionals were diploma, 126(49.2%), followed by degree holders, 116(45.3%). Majority of health professionals were married,130(50.8%) ,followed by single,116(45.3%) , majority of the health professionals were orthodox religion followers ,229(89.5%),followed by protestant,14(5.5%). Majority of health professionals have 5-10 years, 132(51.6%) of work experience with a mean of 2.5 years of work experience with (0.929 standard deviation). (Table (1)

Table 1:-Sociodemographic characteristics of the study participants of on the Practice of essential newborn care at Northshoa zone, Ethiopia ,2019(N=256).

Variables		Frequency	Percentage
Age	<25years	46	18%
	25-29 years	123	48%
	30-34 years	52	20.3%
	35-39 years	19	7.4%
	>39 years	16	6.3%
Marital status	Married	130	50.8%
	Single	116	45.3%
	Divorced	10	3.9%
Religion	1-Orthodox	229	89.5%
	2-Muslim	13	5.1%
	3-Protestant	14	5.5%
Ethnicity	Amhara	215	84%
	Oromo	27	10.5%
	Others	14	5.5%
Level of education	Diploma	126	49.2%
	Degree	116	45.3%
	Master	14	5.5%
Profession	Midwife	104	40.6%
	Nurse	97	37.9%
	Doctor	7	2.7%
	Emergency surgeon	14	5.5%
	Health officer	34	13.3%
Work experience	< 5 years	26	10.2%
	5-10 years	132	51.6%
	11-15 years	46	18.0%
	> 15 years	52	20.3%
Monthly income	<3105 birr	45	17.6%
	3105-3825 birr	64	25.0%
	3826-4545 birr	53	20.7%
	4546-5267 birr	10	3.9%
	>5267 birr	84	32.8%
Sex	Male	153	59.8%
	Female	103	40.2%

Key note--N=sample size

5.2 Assessment of personal and institutional factors

Majority of health professionals said that different supplies and drugs were available ,240(93.8%%) to provide ENC services and had internal/external supervision ,157(61.3%) to enhance practice of ENC .From those 10(3.9%) had supervised every month,38(14.9%) had supervised at 1-6 months interval,10(3.9%) had supervised at 7-12 months interval other 99(38.7%) of the health professionals were said supervision was given as needed.

Majority of the health professionals were not trained, 200(78.1%) on basic essential newborn care but majority of health professionals had training guideline, 216(84.4%) .(Table 2)

Table 2:-Assessment of different supplies and drugs available in the health facility for practice ENC, at North shoa zone, Ethiopia, 2019(N=256).

Variables	Yes	NO
Is there different supplies and drugs are available in this health facility to provide ENC	240(93.8%)	16(6.3%)
Is there any internal or external supportive supervision regarding to ENC	157(61.3%)	99(38.7%
Is there clean delivery room	248(96.9%)	8(3.1%)
Availability of prepared cord tie	255(99.6%)	1(0.1%)
Is baby identification material prepared and available	242(94.5%)	14(5.5%)
Is suction device available in the health facility	252(98.4%)	4(1.6%)
Is training guideline is available	216(84.4%)	40(15.6%)
Vitamin K injection	245(95.7%)	11(4.3%)
TTC eye ointment	231(90.2%)	25(9.8%)
Have you trained on ENC	56(21.9%)	200(78.1%)

Overall, 256 health professionals who were interviewed on essential new born care majority of health professionals were interested, 144(56.2%) to work in delivery room (fig, 3).

Have no interst to
work at delivery
room
43.8%

Intersted to work at
delivery room
56.2%%
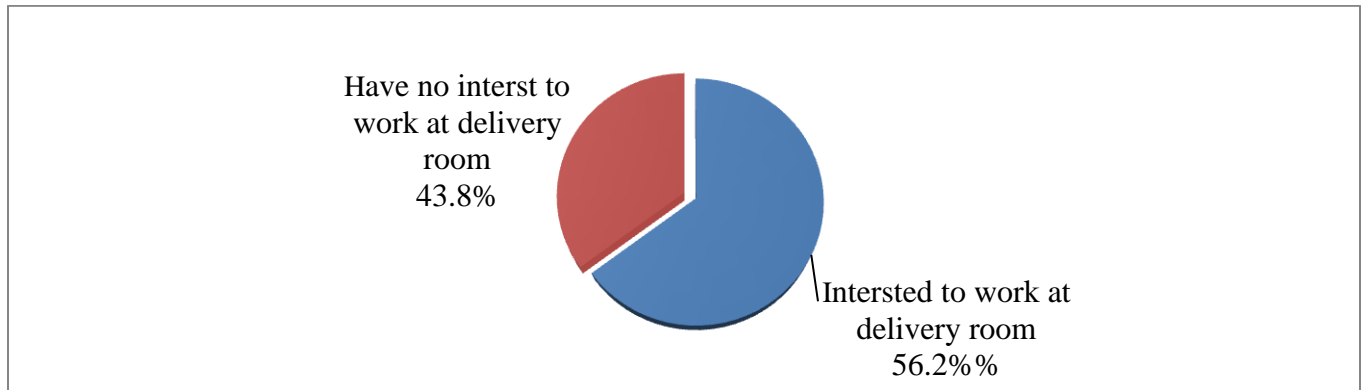
Figure 3:-Interest of health professionals to work at delivery room to provide ENC services during delivery at North shoa zone, Amhara region, Ethiopia, 2019(N=256).

In this study majority of health professionals were included from health centers, 176(68.8% ,followed by district hospitals(58) and Debre Berhan referral hospital(22) (fig ,4.)

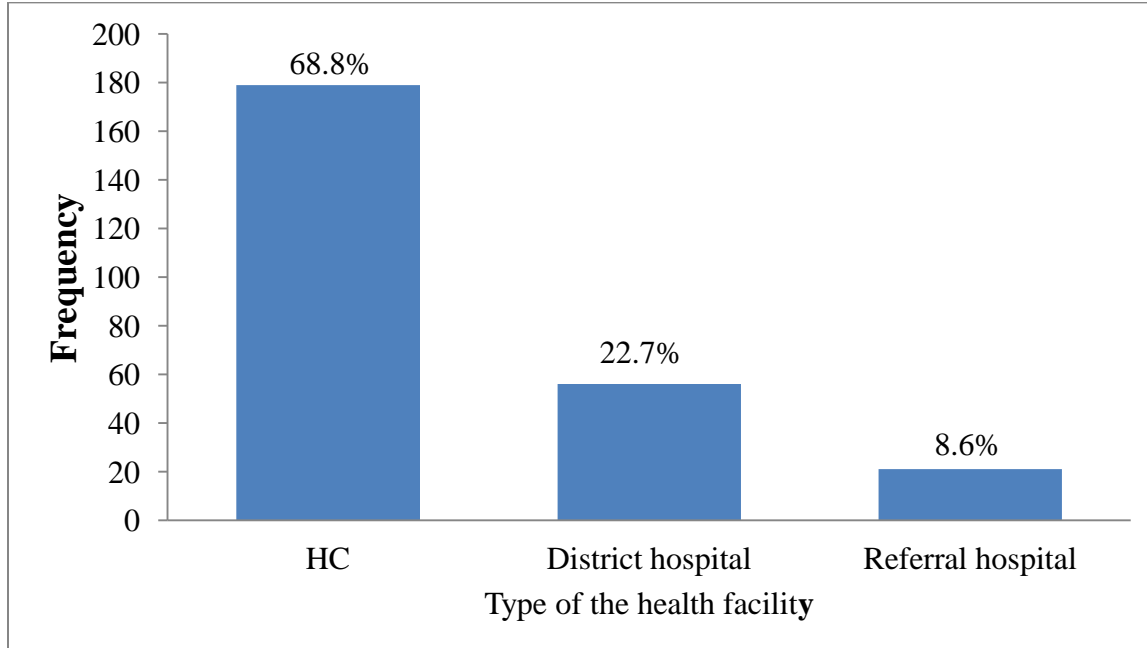Figure 4:-Assessment of the type of health facilities that the health professionals work to provide ENC at North shoa zone Amhara region, Ethiopia, 2019(N=256)

5.3 Assessment of the health professionals knowledge regarding ENC

Overall,256 health professionals involved in the study majority of health professionals regarding on the knowledge of interventions of ENC stated that , TTC eye ointment should be applied within one hour(92.6%) ,breast feeding should be initiated within one hour(98.4%), colostrums helps to prevent infection and different nutrients to baby(98%) , skin to skin contact of immediate newborn child with mothers helps to prevent hypothermia stay baby with warm (98.8%) ,immediate newborn baby should not based before 24 hours even if the baby has stained meconium(82%), baby with stained meconium could be bathed before 24 hours (18%) , and newborn child be always weighed after birth(98.8%) . (table 3)

Table 3:- Knowledge of health professionals towards steps of immediate newborn care at different health facilities in North shoa zone, Amhara region ,Ethiopia , 2019(N=256)

Variables	Yes	No
Did the TTC eye ointment should be applied within one hour	237(92.6%	19(7.4%)
Did the neonate should not bathed immediately if blood or meconium is stained on the skin	210(82%)	46(18%)
Is initiating breast feeding important for child if started within one hour	252(98.4%)	4(1.6%)
Did you refer the infant when develop complications immediately after birth	243(94.9%)	13(5.1%)
Is skin-to-skin contact of newborn neonate with mother Prevent hypothermia and help baby stay warm	253(98.8%)	3(1.2%)
Is the newborn child should placed on the mothers abdomen	244(95.3%)	12(4.7%)
Is administering Vit K is important to prevent bleeding	243(94.9%	13(5.1%)
Is it unable suck or cry is newborn danger sign	242(94.5%)	14(5.5%)
All baby should be assessed after birth	248(96.9%)	8(3.1%)
Should you clean the face and eye of baby after the head is delivered	249(97.3%)	7(2.7%)
Do assess mothers after the delivery immediately on while she is on delivery coach	245(95.7%)	11(4.3%)
Is the colostrum Prevents from infection and gives important nutrient	251(98%)	5(2%)
Is it placing identification bands on wrist or ankles is mandatory	226(88.3%)	30(11.7%)
An newborn child should be bathed after 24 hrs even if the neonate has stained meconium	239(93.4%)	17(6.6%)
Always you dry the baby after birth	247(96.5%)	9(3.5%)
Always weigh newborn neonate after birth	253(98.8%)	3(1.2%)

5.3..Assessment of the health professionals knowledge regarding ENC

Regarding on the advantages of skin to skin contact of immediate new born with mother said that ,helps to prevent hypothermia(29%) ,baby stay warm(28.1%) ,to expel placenta (7.1%) and early breast feeding enhance boding (16.6%) .On knowledge related to the measures or actions taken if the baby is unable cry or feed, majority said that call helper and start resuscitation,235%35.7% ,suck the baby 212(32,2%) . From health professionals interviewed on the dose of Vit K, 205(80.1%) said 1mg is the right dose administered as prophylaxis to prevent bleeding and 45(16.6%) said 0.5 mg is given as prophylaxis.(table 4).

Table 4: Specific Knowledge of health professionals towards on the advantages of immediate newborn care at different health facilities in North shoa zone, Amhara region ,Ethiopia , 2019(N=256)

Variables	Specific tasks	Yes	percentage
Knowledge of health professionals on advantage of skin-to-skin contact N=859	Prevent hypothermia	249	29%
	Help baby stay warm	241	28.1%
	Both (prevent hypothermia and help to stay warm	165	19.2%
	Help expel placenta	61	7.1%
	Enhance early breast feeding and bonding	143	16.6%
Knowledge of health professionals on measures to be taken for baby unable to cry after delivery N=658	Suck the baby	212	32.2%
	Call a help and start resuscitation	235	35.7%
	Start cardio-pulmonary resuscitation	93	14.1%
	Stimulation	118	17.9%
Knowledge on time of bathing for immediately born baby N=256	Before 24 h of delivery	37	14.5%
	After 24 h of delivery	219	85.5%
Knowledge on the importance of Providing eye ointment N=450	Prevent ophthalmic neonatrom	171	38.0%
	Prevent breast tingling	13	2.9%
	Prevent hypothermia	13	2.9%
	Prevent neonatal conjunctivitis	244	54.2%
	Prevent cord bleeding	9	2.0%
Initiation of breastfeeding after birth N=255	Within the first hour	235	92.2%
	1–6 h after birth	19	7.5%
	6–12 h	2	0.8%
	More than 12 h after birth		
Knowledge on advantage of early initiation of breast feeding N=951	Enhances bonding of mother and baby	225	23.7%
	Prevents from hypoglycemia	236	24.8%
	Prevents from hypothermia	167	17.6%
	Prevents from infection	164	17.2%
	Development and growth	159	16.7%

5.3. Knowledge of health professionals to advantages of ENC interventions

Majority of health professionals on the advantages of the colostrum said that, colostrum is used to give nutrient(36.3%),prevent infection(33%). Regarding on the recommended breath of neonate per minute ,65.6% stated the recommended breath was 60 breath per minute, 28.1% stated that 40 breath per minute was recommended normal breath of neonate. Knowledge of health professionals on the intervention options of not immediately crying baby , 64.2% stated that call a helper and start resuscitation, 23% stated that neonates should be cover by cloth and allow skin to skin contact with mothers abdomen.(table,5.)

Table 5:-Specific Knowledge of health professionals towards on the intervention of immediate newborn care at different health facilities in North shoa zone, Amhara region ,Ethiopia , 2019(N=256).

Variables		Yes	Percentage
Knowledge on advantage of colostrum N=548	Prevents from infection	181	33.0%
	Gives important nutrient	199	36.3%
	Both	168	30.7%
Measures to be taken if the baby not cries immediately after delivery N=369	Call a help and start resuscitation	237	64.2%
	Put baby on new born table and give mother care	47	12.7%
	Cover the baby and allow skin to skin contact	85	23.0%
The recommended breath per minutes for new born N=256	30 breaths per minute	13	5.1%
	40 breaths per minutes	72	28.1%
	60 breaths per minute	168	65.6%
Prevent newborn children from bleeding	Give Vitamin	256	100%
Dose of Vitamin K to give to a term newborn baby N=256	0.5 mg	45	17.6%
	2 mg	1	0.4%
	1 mg	205	80.1%
Which care of the umbilical cord of newborn after delivery is important N=291	Cut the cord with a clean instrument (for example, a razor, blade)	248	85.2%
	Use any sharp instrument for cutting the cord	19	6.5%
	After cutting the cord, apply for traditional herbs/medicines	1	0.3%
	Always put a bandage on the cord,	23	7.9%

The overall knowledge of the health professionals regarding ENC steps and intervention was 161(62.9%) who had good knowledge about ENC (fig ,5)
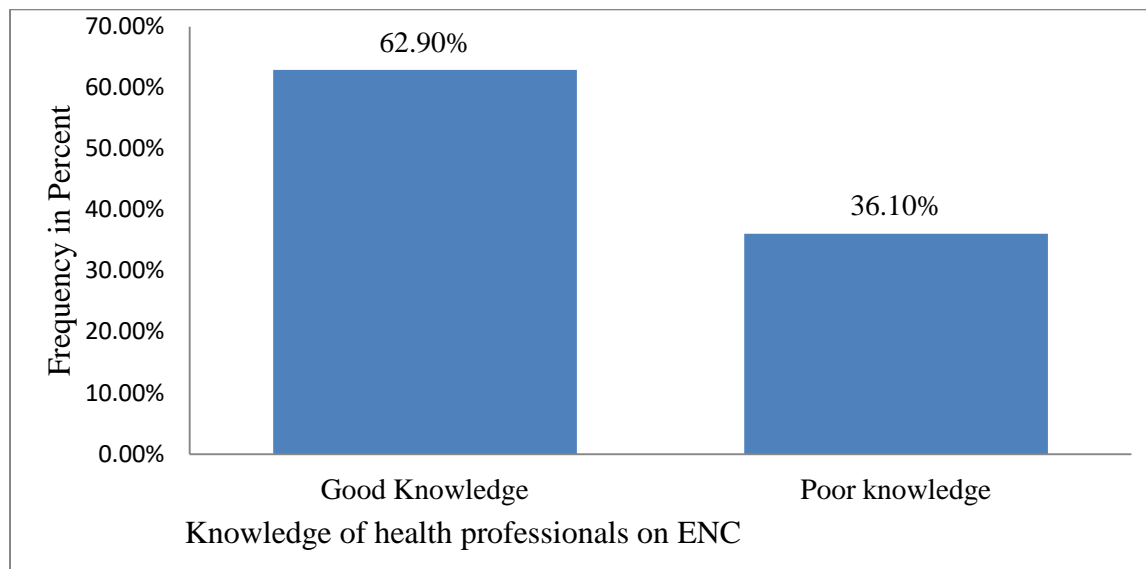
Figure 5:-Over all knowledge of health professionals regarding to provision of immediate newborn care at different health facilities in Northshoa zone, Amhara region, Ethiopia, 2019.

5.4 Assessment of the practice of essential newborn care

Overall, 256 health professionals during observation and interview 99.2% of respondents immediately dry baby,99.2% warm the baby by putting baby with the mothers skin,256(100%) initiate breast feeding within one hour, 98% were provide vitamin K, 99.2% apply TTC eye ointment ,99.2% weigh baby. Majority of health professionals,210(82%) were not apply chlorhexidine on umbilicus after cut this due to unavailability of chlorhexidine in the health facility, place baby identification band on baby's ankle or wrist and 254(99.2%) weigh baby.(table 5)

Table 6:-Practice of health professionals on immediate newborn care at different health facilities in North shoa zone, Ethiopia, 2019.(N=256)

Variable	Tasks performed	Tasks not performed
Placing immediately on the mother's abdomen after a vaginal delivery Dry and Stimulate neonate within 30 seconds	254(99.2%)	2
Assess Breathing and color after 30 seconds up to 1 minute	236(92.2%)	20(7.8%)
If the baby does cry or breaths well clamp/tie and cut the cord within 1-3 minutes. If < 30 breaths per minute, blue tongue, lips or trunk or if gasping then start resuscitating	256(100%%)	
Apply Chlorhexidine gel (4%) on the cord within 30min of delivery	46(18%)	210(82%)
Place the infant in skin-to-skin contact on the mother's chest and cover both with clean linen and blanket as required.	256(100%)	
Initiate breastfeeding immediately within 1 hour	256(100%)	
Eye care-Apply Tetracycline eye ointment within 90 min of delivery	254(99.2%)	2
Give Vitamin K, 1mg IM on anterior mid-lateral thigh (within 90min)	251(98%)	5
Place the baby identification bands on the wrist and ankle (within 90 min)	188(73.4%)	68(26.6%)
Weigh the Newborn within 90 min & when baby is stable and record all care given	254(99.2%)	2

The overall practice of essential newborn care who had good practice was 73.8% (189) with 95% CI (68-79) (fig 6)
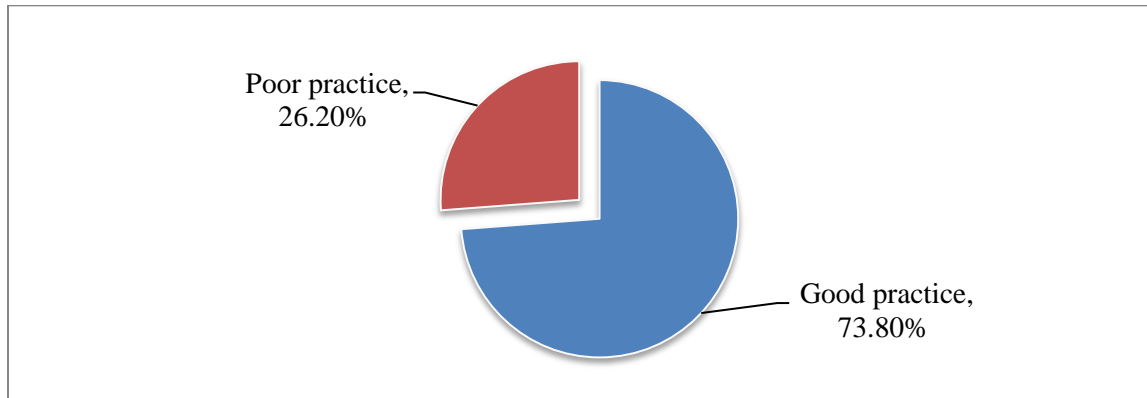
Figure 6:-Assessment of practice of essential newborn care among health professionals in different health facilities at North shoa zone, Amhara region, Ethiopia,2019(N=256)

5.5 Factors associated with practice of essential newborn care

5.1.1 Bivariate analysis

Health professionals whose age >39 years old were less likely practice ENC as compared with health professionals whose age was < 25 years old, (COR=0.07 : 95% CI=018,0.275) .

Being nurses and health officers were 48.6% (COR=0.514:95% CI=0.271,0.974) and 59.1% (COR=0.409:95% CI=0.176,0.948) less likely practice ENC respectively as compared with midwifes professions.

The odds of practice of ENC who were interested to work at delivery room was 2.407 times likely to practice ENC than those hadn't interest, (COR=2.407:95% CI=1.362,4.255)

The odds of practice of ENC who had supportive supervision was 2.323 times (COR=2.323:95% CI=1.317,4.097) than who hadn't.

Availability of Vitamin K injection was 8.407t times (COR=8.407: 95% CI=2.16,32.716) likely to practice ENC than those health professionals who had no Vitamin K injection

The odds of practice of ENC who were trained on ENC was 3.657 times(COR=3.657: 95% CI=1.489,8.983) likely practice ENC than those health professionals who were not trained on ENC .(table 7)

Table 7:-Bivariate analysis to identify factors associated with practice of ENC among health professionals at health facilities in North shoa zone, Amhara region, Ethiopia, 2019(n=256)

Variable		Practice		P.value	COR(CI=95%)
		Good practice	Poor practice		
Age	<25years	38(20.1%)	8(11.9%)	1	
	25-29 years	84(44.4%)	39(58.2%)	0.069	0.453(0.193,1.063)
	30-34 years	46(24.3%)	6(9%)	0.411	1.614(0.515,5.059)
	35-39 years	17(9.0%)	2(3%)	0.490	1.789(0.343,9.333)
	>39 years	4(2.1%)	12(17.9%)	0.000	0.070(.018,0.275)***
Knowledge	Poor knowledge	71(37.6%)	24(35.8%)	1	
	Good knowledge	118(62.4%)	43(64.2%)	0.799	0.928(0.520,1.656)
Profession	Midwife	83(43..9%)	21(31.3%)	1	
	Nurse	65(34.4%)	32(47.8%)	0.041	0.514(0.271,0.974)*
	Doctor/IESO	20(10.6%)	1(1.5%)	0.124	5.06(0.642,39.887)
	Health officer	21(11.1%)	13(19.4%)	0.037	0.409(0.176,0.948)*
Interest of health professionals	Not interested	72(38.1%)	40(59.7%)	1	
	Interested	117(61.9%)	27(40.3%)	0.003	2.407(1.362,4.255)**
Type of health facility	Referral hospital	17(9.0%)	4(6.0%)	1	
	District hospital	51(27.0%)	5(7.5%)	0.228	2.4(0.577,9.976)
	Health center	121(64.0%)	58(86.6%)	0.218	0.491(0.158,1.525)
Availability of supplies or drugs	NO	10(5.3%)	6(9%	1	
	Yes	179(94.7%)	61(91%)	0.292	1.761(0.614,5.046)
Internal/external supervision	No	63(33.9%)	36(53.7%	1	
	Yes	126(66.7%)	31(46.3%)	0.004	2.323(1.317,4.097)**
Availability of Vitamin K injection	No	3(1.6%)	8(11.9%)	1	
	Yes	186(98.4%)	59(88.1%)	0.002	8.407(2.16,32.716)**
Availability of TTC eye ointment	No	20(10.6%	5(7.5%)	1	
	Yes	169(89.4%)	62(92.5%)	0.0.462	0.681(0.245,1.894)
Availability of suction device	No	2(3.0)	2(3.0%)	1	
	Yes	187(98.9%)	65(97.0%)	0.296	2.877(0.397,20.841)
Availability of training guideline	No	28(14.8%)	12(17.9%)	1	
	Yes	161(85.2%)	55(82.1%)	0.549	1.255(0.597,2.636)
Training on ENC	Not trained	139(73.5%)	61(91.9%)	1	
	Trained	50(26.5%)	6(9.0%)	0.005	3.657(1.489,8.983)**

N=sample size, * p.Value <0.05, p.value <0.01 , *** P.value <0.001**

5.5.2 Multi-variate analysis

All variables with p. value <0.2 in bi variable analysis were entered in to multi-variate analysis to adjust the effect of cofounders. Model fitness was checked by Hosmer-lemeshow.

The odds of practice of ENC who were interested to work at delivery room were 2 times more(AOR=2.07 :95% CI=1.04,4.118) likely to practice ENC than those who hadn't interst.

Availability Vitamin K in the health facility makes health professionals to had a good practice of ENC near to 5 times (AOR=4.457 : 95% CI=1.015,19.574) likely to have good practice of essential newborn care than those who had no vitamin K injection .

Health professionals who were trained on ENC were nearly three times (AOR=2.915: 95% CI=1.05,8.097) more likely to practice ENC than those who were not trained ENC.

Health professionals whose age >39 years old were 89.5% less likely practice the ENC as compared with whose age of <25 years (AOR=0.105: 95% CI:0.024,0.456).(table ,8)

Table 8:-Multivariate analysis to identify factors associated with practice of newborn care among health professionals at different health facilities in North shoa zone, Amhara region ,2019.(N=256)

Variable		Practice			AOR(CI=95%)
		Good practice	Poor practice	P.value	
Age	<25years	38(20.1%)	8(11.9%)	1	
	25-29 years	84(44.4%)	39(58.2%)	0.171	0.453(0.214,1.313)
	30-34 years	46(24.3%)	6(9%)	0.312	1.901(0.547,6.613)
	35-39 years	17(9.0%)	2(3%)	0.454	1.937(0.342,10.957)
	>39 years	4(2.1%)	12(17.9%)	0.003	0.105(0.024,0.456)**
Profession	Midwife	83(43..9%)	21(31.3%)	1	
	Nurse	65(34.4%)	32(47.8%)	0.816	1.098(0.499,2.419)
	Doctor/IESO	20(10.6%)	1(1.5%)	0.242	3.754(0.409,34.444)
	Health officer	21(11.1%)	13(19.4%)	0.921	0.948(0.329,2.731)
Interest of health professionals	Not interested	72(38.1%)	40(59.7%)	1	
	Interested	117(61.9%)	27(40.3%)	0.038	2.07(1.04,4.118)*
Internal/external supervision	No	63(33.9%)	36(53.7%	1	
	Yes	126(66.7%)	31(46.3%)	0.054	1.885(0.988,3.594)
Availability of Vitamin K injection	No	3(1.6%)	8(11.9%)	1	
	Yes	186(98.4%)	59(88.1%)	0.048	4.457(1.015,19.574)*
Training on ENC	Not trained	139(73.5%)	61(91.9%)	1	
	Trained	50(26.5%)	6(9.0%)	0.04	2.915(1.05,8.097)*
Key note (N=sample size, * p.value <0.05 , ** P.value <0.01 ***, P.value <0.001					

5.6 Discussion

The overall good practice of essential newborn care was 73.8% (95% CI=68-79). The finding was almost similar with Tigray region study finding (72.8%), This might be the study in Tigray region was recently conducted in 2016.[34]. This shows that practice of ENC not significantly increased ,which needs revision of ENC services and equipping resources.

However it was higher than   , Australia(31%), Khartoum (58.9%), Bahir Dar city(59.7%), Jimma zone(51.1%). [30,31,33,35) . This might be most likely due to , supportive supervision given for health professionals to enhance their skills on ENC, availability of training guidelines, availability of supplies and drugs . This implies that to sustain and to scale up this practice basic supplies and drugs should be sustainably fulfilled, training should be given for all health professionals .

The practice of ENC(73.8%) was lower than Addis Ababa(88.8%) [32]. This might be due to the type of the health facility, variation in the study period, frequency of training on essential newborn care, , low training given for health professionals. This indicates that , training should be given for all health professionals , best practice should be shared from Addis Ababa health facilities.

The availability of drugs especially availability of the vitamin K injection was significantly associated with practice of ENC similarly as Tigray region [34] . This similarity might be Vitamin K injection is mandatory drug must be available and given for immediate newborn neonates. This implies that Vitamin K injection must be available in health facilities .

 In this study interest and training of health professionals were significantly associated with practice of ENC which was similar with the study conducted in Jimma [35]. This similarity might be training is a incentive and it motivates health professionals to provide ENC ,WHO standards of ENC needs skills which can build by training but not level of education . This shows that providing training for health professionals is integral part that enables health professionals knowledgeable, skillful and creates motivation of health workers to work in delivery room. Health professionals should be awarded to have an interest.

5.7 Conclusion

Majority of the health professionals have a good practice of essential newborn care.

In adjusted odds ratio, interest of health professionals to work in delivery room, age of health professions ,availability of Vitamin k injection and training on ENC were had significant association with practice of ENC . In addition to this there was a gap of applying Chlorhexidine gel on the cord within 30min of delivery after cutting cord to prevent umbilical infection.

5.8 Recommendation

To North shoa zonal health department

To sustain and scale up Essential newborn care practice zonal health department should **provide:**-

- ✓ drugs and supplies,
- ✓ in service refreshment training
- ✓ follow up and mentor
- ✓ motivation for health professionals

It is recommend to hospitals and health centers

- ✓ all materials necessary for the implementation of ENC should be fulfilled.
- ✓ Create motivation for health professionals

It is recommended to health professionals

All health professionals who were currently assigned in labor room and potentially assigned health professionals should be:-

- ✓ Provide orientation for their untrained colleagues
- ✓ Provide ENC service for newborn neonates based on WHO ENC guideline.

It is recommended to NGOs and stakeholders working at MCH project

In order to scale up and strengthen ENC service

- ✓ Work co-operatively with governmental organizations
- ✓ Fulfill different supplies and drugs
- ✓ Provide basic training and on site job refreshment training
- ✓ Give supportive supervision for health professionals

5.9 Strength and limitation
Strength

clinical observational checklist was o assess practice of ENC in addition to interview

Limitation

pre-test to check validity of tool was not done due to constraint of budget

more health facilities which were had to reach and not accessible to transport were not included in the study

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7. Annex

Introduction

Information Sheet

My name is_____.This is to give you information regarding a study designed to assess essential newborn care practice among health professionals working at obstetric wards. The aim of the study is to the health professionals newborn care practice provided based on the standard guidelines. The study will have a benefit in the effort to improve the quality service by the stakeholders and can influence decision makers. The study subject will have the right for partial or non-participation for the data collection. There is no risk for participating in the data collection and confidentially of the respondent will be maintained as the name is not required on the questionnaire.

Objective of the study is to assess the practice of ENC based on the recommended standards accordingly based on the setup and to assess availability of some of the basic resources or supplies used for implementing ENC.

Informed Consent (Verbal)

This is to respectful requesting you to participate on this study. You can have full control to take time to understand and decide whether or not to take part on the study. You are also not obliged to answer a question you don't want to and you may end the interview at any time you want to. However, your cooperation and genuine response for the study is highly appreciated. The interview may take up to 30 minute to complete the questionnaire.

Contact detail of the Investigator If you want to know more about the study you can contact the principal investigator of the study G/hana Ashenef through this mobile phone numbers +251-910-68-81-68, e-mail: gashenef@gmail.com .Could I have your permission to continue?

1. If yes, continue to give the questionnaire.

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

If you are volunteer and entitled in study

Code ----------------------------

Name of data collector-----------------------Date--------------------Sign---------------------

Name of the supervisor--------------------- Date---------------------Sign---------------------

Part I -Questions related to Sociodemographic characteristics

Code	Variables	
1	Age	---------
2	Sex	1- Male 2. Female
3	Marital status	1-Married 2- Single - Divorced 4- Widowed
4	Religion	1.Orthodox 2.Muslim 3. Protestant 4.Others
5	Ethnicity	1. Amhara 2. Oromo 3. Others(if specify-----
6	Level of education	1. Diploma 2. Degree 3. Master 4.Doctor
7	Profession	1. Midwife 2. Nurse 3.Doctor 4.Emergency surgeon 5. Health officer
8	Work experience	-------years
9	Monthly salary	--------Et.birr
10	Have an interest to work in delivery room	1.Yes 0.No
11	Type of health facility that you now work	1.Referral hospital 2.District hospital 3.HC
12	Is there different materials or supplies-available in the health facility	1.Yes 0.No
13	Is there any internal/external supportive supervision given for you	1.Yes 0. No
14	If yes frequency of supervision	1-Every month 2- 1-6 months 3- Every 7-12 months 4-As needed

Part II questions related availability of different supplies and cleanness of health facilities

Code	Variables	Yes=1	No=0
001	Delivery room clean		
002	Cord tie prepared		
003	Baby identification material prepared		
004	Suction device prepared		
005	Training guidelines		
006	Vit K injection		
007	TTC eye ointment		
008	Have got ENC training		

Part III Questions related to knowledge of health professionals towards steps of newborn care

Code	Variable		
101	Did the TTC eye ointment should be applied within one hour	1-Yes	0- No
102	Did the neonate should not bathed immediately if blood or meconium is stained on the skin	1=Yes	0- No
103	Is initiating breast feeding important for child if started within one hour	1-Yes	0- No
104	Did you refer the infant when develop complications immediately after birth	1-Yes	0- No
105	Is skin-to-skin contact of newborn neonate with mother Prevent hypothermia and help baby stay warm	1-Yes	0- No
106	Is the newborn child should placed on the mothers abdomen	1-Yes	0- No
107	Is administering Vit K is important to prevent bleeding	1-Yes	0- No
108	Is it unable suck or cry is newborn danger sign	1-Yes	0- No
109	All baby should be assessed after birth	1-Yes	0- No
110	Should you clean the face and eye of baby after the head is delivered	1-Yes	0- No
111	Do assess mothers after the delivery immediately on while she is on delivery coach	1-Yes	0- No
112	Is the colostrum Prevents from infection and gives important nutrient	1-Yes	0- No
113	Is it placing identification bands on wrist or ankles is mandatory	1-Yes	0- No
114	An newborn child should be bathed after 24 hrs even if the neonate has stained meconium	1-Yes	0- No
115	Always you dry the baby after birth	1-Yes	0- No
116	Always weigh newborn neonate after birth	1-Yes	0- No

Part-IV knowledge of health professionals on the specific essential newborn care

s.no	Variables	Specific tasks	Yes	No
1 1	Knowledge of health professionals on advantage of skin-to-skin contact	Prevent hypothermia		
		Help baby stay warm		
		Both (prevent hypothermia and help to stay warm		
		Help expel placenta		
		Enhance early breast feeding and bonding		
	Knowledge of health	Suck the baby		

2	professionals on measures to be taken for baby unable to cry after delivery	Call a help and start resuscitation		
		Start cardio-pulmonary resuscitation		
		Stimulation		
		Nothing		
3	Knowledge on time of bathing for immediately born baby	Before 24 h of delivery		
		After 24 h of delivery		
		I do not know		
4	Knowledge on the importance of Providing eye ointment	Prevent ophthalmic neonatorm		
		Prevent breast tingling		
		Prevent hypothermia		
		Prevent neonatal conjunctivitis		
		Prevent cord bleeding		
5	Initiation of breastfeeding after birth	Within the first hour		
		1–6 h after birth		
		6–12 hour		
		More than 12 hour after birth		
6	Knowledge on advantage of early initiation of breast feeding	Enhances bonding of mother and baby		
		Prevents from hypoglycaemia		
		Prevents from hypothermia		
		Prevents from infection		
		Development and growth		
7	Knowledge on advantage of colostrum	Prevents from infection		
		Gives important nutrient		
		Both		
8	Measures to be taken if the baby not cries immediately after delivery	Call a help and start resuscitation		
		Put baby on new born table and give mother care		
		Cover the baby and allow skin to skin contact		
9	The recommended breath per minutes for new born	30 breaths breath per minute		
		40 breaths per minutes		
		60 breaths per minute		

10	Prevent newborn children from bleeding	Breastfeeding the child		
		Not necessary to give any drugs		
		Give Vitamin K		
		I have no opinion		
11	Dose of Vitamin K to give to a term newborn baby	0.5 mg		
		2 mg		
		5 mg		
		1 mg		
12	Which care of the umbilical cord of newborn after delivery is important	Cut the cord with a sterilized instruments (for example, a razor, blade)		
		Use any sharp instrument for cutting the cord		
		After cutting the cord, apply for traditional herbs/medicines		
		Always put a bandage on the cord		
		I have no opinion		

Part V clinical observational checklist to assess practice of newborn care

Code	Variable	1=Tasks performed	0=Tasks not performed
01	Step 1 -Placing immediately on the mother's abdomen after a vaginal delivery Dry and Stimulate neonate within 30 seconds		
02	Step 2: Assess Breathing and color after 30 seconds up to 1 minute		
03	Step 3: If the baby does cry or breaths well clamp/tie and cut the cord within 1-3 minutes. If < 30 breaths per minute, blue tongue, lips or trunk or if gasping then start resuscitating		
04	Step 4:. Apply Chlorhexidine gel (4%) on the cord within 30min of delivery		
05	Step 5: Place the infant in skin-to-skin contact on the mother's chest and cover both with clean linen and blanket as required.		
06	Step 6: Initiate breastfeeding immediately within 1 hour		

07	Step 7: Eye care-Apply Tetracycline eye ointment within 90 min of delivery		
08	Step 8: Give Vitamin K, 1mg IM on anterior mid-lateral thigh (within 90min)		
09	Step 9: Place the baby identification bands on the wrist and ankle (within 90 min)		
010	Step 10: Weigh the Newborn within 90 min & when baby is stable and record all care given		

Declaration sheet

I, the undersigned, declare that this is my original work and has never been presented in this or any other university and that all sources of materials used for the proposal, thesis and individuals contributed to it have been fully acknowledged.

Name of Principal Investigator: Gebrehana Ashenef

Date of submission: _____

                    Date_____

This paper has been submitted for technical review with my approval as university advisor:

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Examiners name _____

         Signature_____

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