COLLEGE OF DEVELOPMENT STUDIES

CENTER FOR POPULATION STUDIES

PRACTICE OF ESSENTIAL NEWBORN CARE AND ASSOCIATED FACTORS AMONG POSTNATAL WOMEN AT SELECTED PUBLIC HEALTH CENTERS OF ADDIS ABABA, 2023

By: - Bethel Aberra

ADVISOR:- Dr. Dula Etana

A Thesis submitted to the Center for Population Studies in partial fulfillment of the requirements for the degree of Master of Science in Population studies

August 2023,

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DECLARATION:

I, the undersigned, declare that this academic thesis entitled **"PRACTICE OF ESSENTIAL NEWBORN CARE AND ASSOCIATED FACTORS AMONG POSTNATAL WOMEN AT SELECTED PUBLIC HEALTH CENTERS OF ADDIS ABABA, 2023"**, carried out for my MSc. thesis is entirely original work to me and has not previously been presented as fulfillment of having met the requirements for any Degree at this university or another academic institution of comparable standing. In an equitable manner, all of the materials and literary sources utilized for this academic thesis have been properly acknowledged.

Declared by:

Bethel Aberra _____ _____

(Student Name) **(Signature)** **(Date)**

CONFIRMATION:

In my capacity as an academic thesis advisor, I hereby confirm that this thesis research by **Bethel Aberra** has been submitted for examination under my close follow-up, guidance and supervision.

Confirmed by:

Dula Etana (Ph.D.) _____ _____

(Thesis Advisor) **(Signature)** **(Date)**

ADDIS ABABA UNIVERSITY

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This is a declaration that the academic thesis prepared by **Bethel Aberra**, entitled **"PRACTICE OF ESSENTIAL NEWBORN CARE AND ASSOCIATED FACTORS AMONG POSTNATAL WOMEN AT SELECTED PUBLIC HEALTH CENTERS OF ADDIS ABABA, 2023,"** has been submitted to College of Development Studies of the Addis Ababa University in partial fulfillment of the requirements for the Degree of Master of Science in Population Studies (Reproductive Health). Moreover, this thesis research complies with academic regulatory policies of the Addis Ababa University and adheres to the recognized standards with respect to originality and internal quality.

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External Examiner: **Dr. Gizachew Abdeta** Signature _____ Date_____

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Principal Advisor: **Dr. Dula Etana** Signature _____ Date_____

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Center Head or Chair of Department's Graduate Program Coordinator

Acknowledgements

First and foremost I thank the Almighty God for giving me the grace to carry out this study. I express my sincere gratitude to my advisor, Dr. Dula Etana for his guidance, valuable advice, and supervision in preparing my thesis.

Great thanks to my employment organization, the Ethiopia Statistical Service (ESS) for giving me the opportunity to study and covering all the costs of my study.

My most sincere gratitude also goes to Addis Ababa University, College of Development Studies Center for Population Studies for accepting me and giving me the opportunity to get knowledge in population studies in general and in reproductive health in particular.

Finally, I would like to express my deepest gratitude to all my family and friends for their continuous encouragement and support.

Abstract

Neonatal Mortality is very high in most developing countries including Africa. Many countries are trying to reduce neonatal mortality by institutionalizing essential newborn care. The main aim of this study was to assess-practice of essential new born care and associated factors. Facility based cross-sectional study design was employed among 414 postnatal women. The overall proportion of postnatal women with poor knowledge and poor practice towards essential newborn care was 53.9% and 28.1% respectively. Being age group of 21-25 years, being unable to read and write, traveling greater than 30 minutes to reach health facility, being self-employee. Having female baby, and initiating ANC follow-up after 16 weeks of gestation are significant predictors of having poor knowledge about ENC. While having educational status of unable to read and write, having female baby and having poor knowledge on essential newborn care were significant factors associated with poor practice of ENC. In this study the level of poor knowledge about essential newborn care is high but the level of poor practice of essential newborn care is relatively high as compared to the 19% Study done in Mekelle town (Berhea et al., 2018). Age(blow 25 years), educational status(unable to read write, distance to health facilities(>30 minutes), occupation status(self-employed), sex of baby(female) and ANC initiation time(after 16 weeks) are significant predictors of having poor knowledge about ENC. Therefore addressing universal education, availing health facilities and health education about the importance of keeping baby warmth play significant.

***Keywords**: essential newborn care, knowledge, practice, newborn*

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Acronyms

BCG---------- Bacilli Calmette-Guerin

DTP---------- Diphtheria-Tetanus-Pertussis

EDHS---------- Ethiopia Demographic and Health Survey

ENC---------- Essential New born Care

KAP---------- Knowledge, Attitude and Practices

MOH ---------- Ministry Of Health

NMR ---------- Neonatal Mortality Rate

SDG---------- Sustainable Development Goal

SNNPR---------- Southern Nations, Nationalities and Peoples Region

TB---------- Tuberculosis

UN ---------- United Nation

WHO---------- World Health Organization

1. Introduction

1.1. Background

Essential newborn care (ENC) is a set of standard recommendations intended to improve the newborn's health through interventions during pre-conception, pregnancy, and the postnatal period(Berhea, Belachew, & Abreha, 2018). The care given immediately after birth for the child play a substantial role in preventing and reducing neonatal morbidity and mortality(Kabwijamu et al., 2016). For the survival of newborns, the first 28 days of life are crucial and vulnerable periods (Wardlaw, You, Hug, Amouzou, & Newby, 2014). Neonatal care is serious to the health and wellbeing of newborns. There is a global consensus to promote the health of infants (Darmstadt et al., 2014). Maternal and newborn health care services are strongly influenced by the health facility and home care practices instituted by mothers and maternal social and health status (WHO, 2014). To decrease high morbidity and mortality of the neonates World Health Organization (WHO) introduced ENC practices (WHO, 2018, 2022).

Neonatal mortality remains a significant public health problem leading to an estimated neonatal death of 18 per 1,000 live births globally(Hug, Alexander, You, & Alkema, 2019) and Africa contributes 26.7 deaths per 1,000 live births(Mersha, Bante, & Shibiru, 2019). According to the 2017 report, in Sub Saharan Africa (SSA), Neonatal Mortality Rate (NMR) was at 27.2 deaths per 1000 live births. West and Central Africa had the world's highest estimates of Neonatal Mortality Rate of 30.2 deaths per 1000 live births(Hug et al., 2019). WHO estimated NMR between 24-32 per 1,000 live births in East Africa(WHO, 2022). Despite many good policies in place regarding health education and integrated care of newborns, NMR is decreasing at a slow pace, still high at 29 per 1000 live births(Waiswa, Peterson, Tomson, & Pariyo, 2010). According to the 2016 Ethiopian Demographic and Health Survey (EDHS) report, neonatal mortality rate was 29 deaths per 1,000 live births. This implies that in Ethiopia 1 in every 35 children dies within the first month(CSA, 2016).

1.2. STATEMENT OF THE PROBLEM

The wellbeing of the newborn neonates has been dismissed resulting in remarkable number of deaths due to numerous reasons such as: mother's failure to look for gifted care amid transportation, unhygienic delivery practices which result in impurities of the neonatal, washing neonatal immediately after delivery, improper cord care, delaying quick contact between mother and neonatal since of the conviction that the neonatal is grimy and must be cleaned some time recently contact and the reality that most neonatal deaths are inconspicuous and undocumented(UNICEF, 2014)

The neonatal mortality rate (NMR) decreased by 52% in 1990 to 17.5% in 2019. Besides the annual number of global neonatal deaths declined from 5·0 million in 1990, to 2.4 million in 2019, which is a 51% reduction. This indicated that 116 countries have reached the SDG NMR target with 16 on track, leaving 63 at risk of missing the target (WHO, 2019). The hazard of death is most notable within the first 24 hours of life. Therefore, during this period more than half of death's happen and approximately three– quarters of all neonatal deaths happen with in the first week of life. Mediations that have the most remarkable effect on neonatal death are less dependent on innovation and commodities than on individuals with abilities (Central Statistical Agency, 2016). Neonatal mortality is getting to be progressively critical not as it were since the share of under-five deaths happening. Moreover since the health interventions required addressing the major causes of neonatal deaths significantly various from those needed to address other under-five death's, and are closely connected to those that are essential to protect maternal well-being (You D, 2015).

Despite the fact that there have been improvements in child survival, the burden of mortality within the first month of life has remained unaltered and still remain. Neonates are a powerless group and hence need more attention and care. It is well set up that the well-being of a newborn children's and their future are completely subordinate upon the care and consideration given to them some time recently and after birth (Castalino F, et.al, 2014).

ENC practices immediately after birth play a foremost role in causing neonatal morbidities and mortalities. Therefore, to reduce neonatal morbidities and mortalities ENC practices were outlined including clean cord care, thermal care, and initiating breastfeeding immediately within the first one hour after birth. But, in different region of the countries traditionally they apply cow dung on the umbilicus, oil instillation or butter into the nostril and other malpractices resulting in risk of morbidity and mortality of the newborns (Moss, 2002, Darmstadt, 2005). Evidence is mounting that early newborn care practices leads to neonatal mortality and morbidity. Hence, the burden of neonatal morbidity and mortality can be reduced by practicing ENC practices (Seward, 2012). Therefore, the objective of this study is to access knowledge and practice of essential new born care and associated factors among postnatal women in selected health centers of Addis Ababa, 2023.

1.3. OBJECTIVES

1.3.1. General Objective

To assess practice of essential new born care and its associated factors among postnatal women in selected health centers of Akaki and Bole- sub-city of Addis Ababa, 2023.

1.3.2. Specific objectives

1. To assess the level of knowledge of postnatal women about essential new born care in selected health centers of Akaki and Bole- sub-city of Addis Ababa, 2023.
2. To assess the practice of postnatal women regarding essential newborn care in selected health centers of Akaki and Bole- sub-city of Addis Ababa, 2023.
3. To identify factors associated with knowledge of postnatal women about essential newborn care in selected health centers of Akaki and Bole- sub-city of Addis Ababa, 2023.
4. To identify factors associated with the practice of postnatal women regarding essential newborn care in selected health centers of Akaki and Bole- sub-city of Addis Ababa, 2023.

1.4. Significance of the study

The Sustainable Development Goal (SDG) aims by 2030 ending preventable deaths of newborns and under-five children. One of the strategies to achieve this goal is improving maternal knowledge, attitude, and practices towards essential newborn care. Besides, this study will helps to identify the factors associated with knowledge and practice of the mother towards essential newborn care and helps to fill the identified factors.

Consequently, to better inform these strategies of ensuring maternal adherence to good and appropriate newborn care measures, it's imperative to understand their current state towards the WHO essential newborn care. This study, therefore, assessed the practice towards ENC and its determinant factors at selected health centers of Bole and Akaki- sub-city of Addis Ababa.

2. LITERATURE REVIEW

Previous studies have revealed the presence of association between educational status, parity, history of antenatal care follow-up, and postnatal follow-up with knowledge of women towards essential newborn care (Al-Nafeesah, 2022; Ayele, 2022; Berhea, 2018; Getachew, 2022; Leta, 2022). Residence and age of women were also the determinant factors for essential newborn care knowledge level of women during the postnatal period (Amolo, 2017; Getachew, 2022; Leta, 2022; Padiyath, 2010).

On the other hand the level of practice of women towards essential newborn care practice is affected by woman's educational status, residence area, attending meeting, history of antennal care follow-up, receiving advice during pregnancy, history of postnatal care follow-up and knowledge of women(Ayele, 2022; Berhan, 2018).

After birth the umbilical cord which is attached the fetus with the placenta is clamped and cut. Then, it dries and falls off in 5-7 days. Therefore, it is an important source of infection in the first few days of neonatal period if unclean cord care practiced including cord cutting and tying (WHO, 2013) different studies from different countries indicated that various substances like cow dung, ash, oil, and butter are commonly applied on umbilicus believing that it promote healing. Therefore, use sterile instrument during cord care (WHO, 2014). Previous study recommended practicing to keep the cord clean and dry without applying anything on the umbilicus (Dore, 1998). Minimal discharge is expected after the umbilicus is separated. Therefore, keep the area clean and dry to promote healing (WHO, 2014)

One of the biological adjustments that will takes place at birth is thermoregulation. After birth the newborn adjusts body temperature to 36.5-37.5 ^{0}c. Newborn regulates their body temperature much less efficiently than adults. Again loss heat more easily. Hence, low birth weight and preterm neonates are at greater risk of developing hypothermia. WHO defined hyperthermia as axillary temperature greater than 37.5^{0}c and hypothermia less than 36.5^{0}c (WHO, 2014). Study done in Sri Lank on knowledge and practice in thermoregulation of newborn revealed 63% of babies had hypothermia and 65% mothers had knowledge and its preventive method while 35% had very poor practical application (Madhvi, 2014).

Immunization is the process whereby a person is made immune or resistant to infectious disease by administering vaccine. It is the most effective public health intervention that helps to reduce morbidity and mortality from vaccine preventable diseases. Therefore, it plays greater role achieve sustainable development goal (SDG, 2014). The expanded program of immunization was established in 1974 to ensure universal access to routine recommended childhood vaccine like BCG, polio, DTP, measles and others (Keja, 1988).

Breastfeeding is the normal way of providing infants with nutrient needed for healthy growth and development. WHO recommends women to initiate breastfeeding within the first one hour of birth and to continue exclusively for first six months. Then, need to be continued with complementary feeding up to two years (Küçükoğlu, 2014).

Early detection of neonatal illness is an important step towards improving newborn survival. Every year an estimated 3 million children die during their first month of life and about one third of these deaths occur during the first 24 hours of life (Katie Millar writer. Lancet launches every newborn series, where we have been and where we need to go, 2014). Majority of these death occur at home indicating that few families recognize the danger signs of the newborn and majority of the neonates are not taken to health facility when they are sick(Dongre, 2009).

According to the study reported in different district of India 64.6%, 87%.76.5% and 78% of the mothers were knowledgeable on essential newborn care (Mohini, 2017, Rajathi, 2017, Castalino, 2014, & ADAMU-ADEDIPE, 2022). A study conducted in New Delhi India revealed that around 68% of the mothers were knowledgeable on newborn Care. Another study done India reported that 50.3% of the mothers were knowledgeable on essential newborn care (Bansal, 2016). A study done in Iran shows that 91.8% of the mothers were knowledgeable essential newborn care .Another descriptive cross sectional study conducted in Nepal shows that 61.6% of the mothers have knowledgeable regarding newborn care(Sharafi, 2013, & Acharya, 2015). Another study in Nepal shows that 41.3% of the respondents had knowledgeable on newborn care. Similarly, another study done in Nepal revealed that 47.2% of the respondents were knowledgeable on essential newborn care (Bhandari, & Shrestha, 2013).

The study done in Tertiary hospital of South India revealed that Knowledge of mothers was inadequate in areas of umbilical cord care (35%), thermal care (76%) and vaccine preventable

diseases(Padiyath, Bhat, & Maheswari, 2010). (Another study done in Tertiary hospital of Tamil Nadu, India showed that only 16.7% respondents had adequate knowledge about danger signs during neonatal period(Patel et al., 2016). Another study done among Sudanese women indicated that 66.4% of them had good knowledge about ENC(Al-Nafeesah et al., 2022). Another study done in Bangladesh indicated that only a small proportion of respondents had good level of knowledge towards ENC accounting only 37%(Majumder, Najnin, Ahmed, & Bhuiyan, 2018).

Study done at Debre Tabor Hospital revealed that about 81.2% of woman had good knowledge towards ENC. This study revealed that majority of the study participants accounting 81.2% of them is aware of the necessity to keep the neonate warm during birth. Again 66.1% of woman mentioned the neonates first bathing occurs within one day of delivery. In contrast 28.5% of respondent revealed that the neonates need to be bathed right away. Besides, 65% of respondents responded that the stump should be uncovered, kept clean and dry(Yisak & Ewunetei, 2022). Another study done at government hospitals of Harar town revealed the prevalence of good knowledge towards ENC as 57.2%(Leta, 2022). Community based cross sectional study conducted in Gamo Goffa zone Southern Ethiopia revealed that (57.6%) of the mothers had good knowledge on ENC. Another study reported in Gulomekada District, EasternTigray shows that 80.4% of the mothers were knowledgeable on ENC at home (Mersha, 2017, & Misgna, 2016).

According to the study conducted in Chennai, India reported that 46.7% of the mothers practice newborn care. Another study done in west Bengal, India revealed that 54% of the respondents were practice essential newborn care at home (Sharafi, 2013). A study conducted in Nepal reported that 73.3% of respondents had adequate practice on essential newborn care. Another Study done in Bangladesh, revealed that the level of practice of the respondent mothers on neonatal care observed that only 5.5% mothers performed excellently where as 71.8% mother performed poorly and only 22.8% of mother performed optimally (Bhandari, 2016, & Hoque, 2011).

The study done in Tertiary hospital of South India revealed that 19% of respondents are still practicing oil instillation into nostrils of newborns and 61% of them administer gripe water to their babies(Padiyath et al., 2010). The finding from Sudanese women revealed that 63.8% of them had good practice of essential newborn care(Al-Nafeesah et al., 2022). About 89.8% of woman had good practice towards ENC. Placing newborn baby on mother's abdomen before delivery of the placenta, use of clean surface during delivery were some of the practices mentioned by the woman.

According to this finding 40.3% woman use skin-to-skin contact to keep the newborn warm and 43% of them cover their baby by dry and clean cloth(Yisak & Ewunetei, 2022). Study done in Mekelle town showed that 81.1% of study participants had good practice on essential newborn care(Berhea et al., 2018).

A study conducted in rural Bangalore, India shows that the age of mothers, Age of the infant, Mother's education, occupation and ever heard about ENC had significantly associated with their knowledge on home based neonatal care. Another study done in Kenya reported that occupation, marital status and educational status are all significantly associated with knowledge of essential newborn care(3,36). A study reported in Iran, Srilanka and Bangladesh shows that occupation, mother's age, occupation, residency, mother's level of education and father's level of education were significantly associated with knowledge of essential newborn care (Akter, 2016, & Priyadarshanie, 2015). According to the study done in Nepal and different district of India age of the mothers, ethnicity, educational status, ever heard about essential newborn care and occupation were significant relationship knowledge of newborn care (ADAMU-ADEDIPE, 2022, & Acharya, 2015)

One study identified that maternal age, parity, and socioeconomic status had significantly association with the maternal knowledge regarding new-born care(Majumder et al., 2018). Another study indicated that being employed woman, high level of education and obtaining information from mass media are factors significantly associated with knowledge on essential newborn care(Mandal & Ghosh, 2016). Study done in Harar governmental hospitals indicated that knowledge on essential newborn care is significantly associated with maternal educational status, average monthly income, antenatal care visit, and parity(Leta, 2022).

A study conducted in Nepal and Bangladesh shown that ANC follow up, PNC follow up and place of delivery were significantly associated practice of neonatal care (Hoque, 2011, & Shah, 2015). A study done in Nepal shows that knowledge on ENC and place of delivery were significantly associated with practice of essential newborn care Another study done in Bihar State, India revealed that parity and place of delivery was significantly associated with practice of cord care(Chaudhary, 2013, & Dandona, 2017). A study conducted Gujarat India revealed that ANC follow up, place of delivery, PNC follow up and knowledge of the mother on essential newborn cares were significantly associated with newborn care practice. Another study in three rural district

of Uganda shows that ANC follow up and place of delivery were significantly associated with newborn care practice (Nimbalkar, 2013, & Ekirapa-Kiracho, 2017).

A community based cross sectional study done in Eastern Tigray revealed that knowledge of the mother on essential newborn care, residency, ethnicity and occupation were significantly association with the practice of essential newborn care at home. Another study conducted in southwest Ethiopia revealed that residency, maternal education and husband's occupation were identified as predictors of neonatal care practice (Tura, 2015, & Misgna, 2016).

Study done in Mekelle revealed that maternal educational status, obtaining counseling during delivery and postnatal period, having good knowledge on newborn care and having good knowledge on newborn danger sign are factors significantly associated with practice on essential newborn care Newborn care (Berhea et al., 2018).

2.2. Conceptual framework

After reviewing literature independent variables were grouped as demographic, socio-economic variables, and obstetrics related variables. Demographic variables such as age, marital status can directly affect the knowledge of postnatal women towards essential newborn care. Those who are young and primpara (giving birth for the first time) may not practice essential newborn care in similar extent with that of old age and multipara women. Those who are married or living in union give more essential newborn care for her child than that not in union. Similarly socio-economic variables specifically educational level may significantly affect the level of knowledge and practice of essential newborn care. Obstetrics related variables for example ANC follow up, have effect on the knowledge of postnatal women towards essential newborn care. All the above mentioned variables have direct effect on practice of women towards essential newborn care practices. Furthermore, knowledge of postnatal women towards essential newborn care had direct relationship with essential newborn care practice.

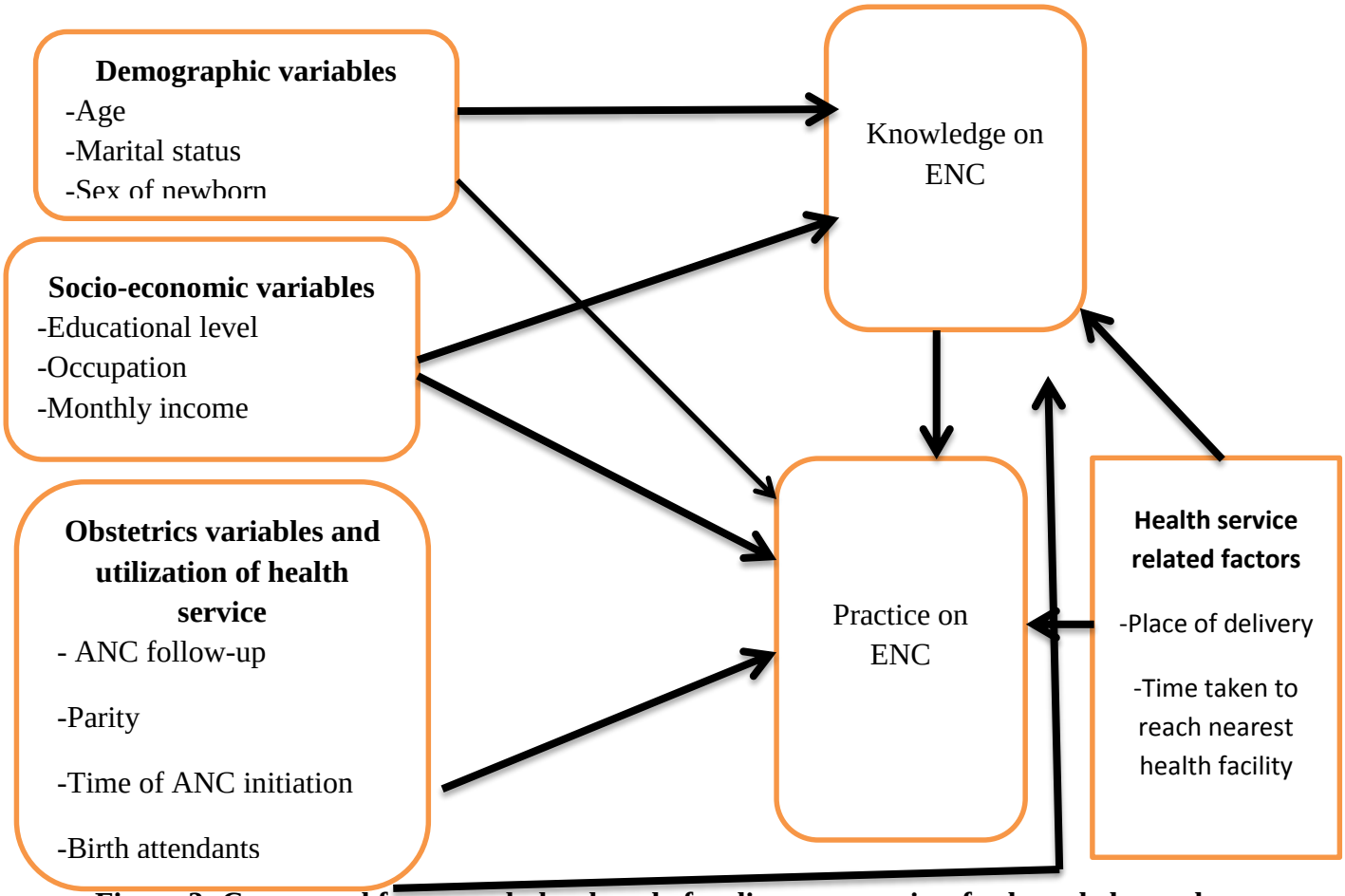

Figure 3: Conceptual framework developed after literature review for knowledge and practice of ENC among postnatal women, 2023.

3. METHODS AND MATERIALS

3.1. Study Area and Period

The study was conducted in selected public health centers of Addis Ababa. In Ethiopia, there are few studies assessing for Knowledge and practice of ENC among mothers. In this study, we try to assess the Knowledge and practice of ENC from mothers of giving birth in Addis Ababa. Addis Ababa is the capital city of Ethiopia which is the most populated and heterogeneous city in Ethiopia doing this study we help us to understand the ENC as a country. Due to this variation, there is high neonatal mortality and this high NMR could be due to a low level of knowledge and practice on ENC. Addis Ababa has 11 sub-cities and 116 weredas. There are 99 public health centers in Addis Ababa. Out of the 11 sub-cities found in Addis Ababa Akaki and Bole sub-cities are included after the lottery draw is done. The study was done from June01- 30, 2023.

3.2. Study Design

A facility based cross-sectional study design was applied among 399 postnatal women in Akaki and Bole sub-cities. We have selected immediate postnatal women to reduce the recall bias.

3.3. Population

3.3.1. Source population

All postnatal women who give birth at Addis Ababa health center was the source population.

3.3.2. Study Population

All postnatal women delivered at selected health center of Akaki and Bole sub-city was the study population.

3.4. Inclusion and exclusion criteria

3.4.1. Inclusion criteria

All postnatal women who give birth in selected health center was included in the study.

3.4.2. Exclusion criteria

Postnatal women who have any physical or mental health condition that may interfere with their ability to participate the study and postnatal women who decline to give consent was excluded.

3.5. Sample size Determination

In order to determine the sample size a single population proportion formula was used with the basic assumption of level of good knowledge on essential newborn care as 57.2% (Leta, 2022),

95% confidence interval and 5% margin of error the sample size will be;

$$n = \frac{(z\alpha/2)^2 p(1-p)}{d^2} \quad = 376 + 38 = 414$$

Where;

n= the sample size

p= prevalence of poor practice on essential newborn care from previous study as 57.2%(Leta, 2022).

Z= the score value at 95% CI (1.96).

d= Margin of error (5%) =0.05

After adding 10% non-response rate, the final calculated sample size was 414.

3.6. Sampling technique and procedure

There are 11 sub cities in Addis Ababa. Two sub cities (Bole and Akaki) are selected via lottery method. There are five health centers in Akaki and 4 in Bole. From Akaki sub city 3 health centers and from bole sub city 2 health centers are selected via lottery method. Then, based on four month delivery report which is 1,584, the calculated final sample size was allocated proportionally. Then, to select the study units, a systematic random sampling technique was used based on proportionally allocated sample size. The study units were accessed every 4th mother by dividing the delivery report for sample size. From the four postnatal women the first was selected using lottery method.

3.7. Term and Definition

Newborn care: this refers to the care given to a newborn after birth, such as giving warmth and preventing heat loss, starting nursing, protecting against infections, safely tying and cutting the umbilical cord, and delay bathing for 24 hours.

Knowledge of essential newborn care: it was assessed using 18 questions which will have yes or no response. All the questions are positive and those who answer yes was given 1 point and those who answer no were given for 0 for each question. The response for 18 knowledge question was computed using spss. The maximum possible score was 18 and the minimum score was 4. The descriptive statistics was calculated for computed knowledge score and it yielded the mean of

13.5. Then this mean value was used as cut point to categorize the respondent as having good and poor knowledge.

Good knowledge of ENC: those women who score above mean score were categorized as having good knowledge.

Poor knowledge of ENC: Those women who score below mean value were categorized as having poor knowledge.

Practice of ENC:- was assessed using 8 questions which will have yes or no response. All the questions are positive and those who answer yes was given 1 point and those who answer no were given for 0 for each question. The response for 8 practice question was computed using spss. The maximum possible score was 8 and the minimum score was 4. The descriptive statistics was calculated for computed practice score and it yielded the mean of 5.5. Then this mean value was used as cut point to categorize the respondent as practicing and not practicing.

Good practice of ENC: those women who score above mean score were categorized as good practice of ENC.

Poor practice ENC: Those women who score below mean score value were categorized as having poor practice ENC.

3.8. Variables

3.8.1. Dependent variable

Practice of postnatal women on ENC is the outcome variable.

3.8.2. Independent Variables

Socio demographic related variables: Residence, Age, Educational level, marital status, education, Religion, Ethnicity, Occupation, Monthly income.

Obstetrics related variables: ANC follow-up, number of ANC visit, Time of ANC initiation, Parity, Gravidity, Number of children, sex of previous child, Sex of current child, Place of delivery, Birth attendants, and Mode of delivery.

3.9. Data collection instruments and data collection procedures

3.9.1. Data collection Instrument

The questionnaire was developed after reviewing different literature on knowledge and practice of essential newborn care. Once the questionnaire is finalized, it was translated into the local languages, Amharic. To ensure consistency of the questionnaire across both versions, it was translated back into English by another expert. A structured Amharic version questionnaire was pre-tested on 10% of the same source population. Then, necessary amendment was made. Finally, structured face-to-face interview was done among postnatal women at the selected health facilities.

3.9.2. Data Collection procedures

Once the questionnaire was finalized by reviewing different literature, it was translated into the local language, Amharic. To ensure the consistency of the questionnaire across the different versions, it was translated back to English by expert. A structured Amharic version of questionnaire was used after pre-testing on 5% of the same source population at Kality health center. Therefore, a face-to-face interview was used to collect data using a structured and pretested questionnaire. Four BSc degree public health officers were involved as data collectors. They were trained intensively for one day on the study objective, instrument and data collection procedure.. The investigator supervised, assist interviewers and collect completed questionnaires every day and check for consistencies and completeness. During the actual data collection process, the investigator cross check the data for a randomly selected study units every day. The investigator was responsible for coordination and supervision of the overall data collection process.

3.10. Data quality control

The questionnaires was designed and modified in English and then was translated to the local languages (Amharic version). Then it was translated back to English to ensure consistency of content. Before the actual data collection, the questionnaire was pre-tested on 5% samples at kality health center and necessary amendments were made. During the process of data collection, 5% of the completed questionnaire was randomly selected and checked for omission or errors. Then, corrective measures were taken throughout data coding, entry, and analysis. Informed verbal consent was secured before starting the interview. One day training was given for data collectors on the research objective to create mutual understanding. Every day the collected data was checked

for completeness by data collectors, supervisors, and principal investigator. Then, any incomplete questionnaire was counted as a non-response rate.

3.11 Data processing and analysis

The coded data was checked and cleaned and entered into statistical package for social science (SPSS version 23) for analysis. The result for descriptive part was presented using tables, graphs, frequencies, mean, standard deviation and median. To examine the association between the dependent and independent variables bivariate logistic regression analysis was done. Those variables with significance level (p-value) <0.05 in bivariate analysis will be entered into Binary logistic regression model for further analysis will be carried out to adjust the confounding factor on the dependent variables. During the analysis, the fitness and statistical assumptions of the logistic model, Hosmer and Lemeshow statistics and model summary table will be checked. Finally, adjusted odds ratio (OR) with 95% of CI and significance (p-value) <0.05 was used to examine the association between the independent and dependent variables.

3.12. Ethical Considerations

The study was conducted after approval of proposal by ethical review committee of Department of Population Studies and ethical institutional review board of Addis Ababa University, College of Development Studies, and Addis Ababa Public Health Research and Emergency Management Directorate. An informed consent was obtained from each respondent to participate in the study. Detail explanation about objectives, purposes and benefit of the study was given to the respondents. Study participants was assured that they have the right to withdraw from the study. Confidentiality was assured before conducting data collection and data collectors was trained and followed.

4. RESULT

From the total of 414 postnatal women included in the study 399 of them completed the interview making the response rate 96.4%.

4.1. Socio-demographic characteristics

From 399 study participants completed the interview, 42.9% of postnatal woman age between 26-30 years with the mean age of 26.38 (±4.16 Standard deviation). About 42% and all of the respondents are orthodox religion followers and married respectively. Regarding their educational status 47.6% attended primary education and 32.6% of them are housewife. From the total of our study participants, 41.6% had monthly income ranging from 2501-5000 Ethiopian birr. With regard to sex of the neonate 57.9% of mother had given female neonate and 70.4% of them given birth spontaneously through vagina (table 1).

Table 1: Socio-demographic characteristics of study participants on Knowledge and practice of essential newborn care

Variables	Frequency	Percentage (%)
Age of respondents		
≤ 20 years	43	10.8
21-25 years	121	30.3
26-30 years	171	42.9
31-35 years	64	16.0
Religion of respondents		
Orthodox	168	42.1
Muslim	43	10.8
Protestant	133	33.3
Catholic	44	11.0
Other	11	2.8
Educational status of respondents		
Unable to read and write	55	13.8
Able to read and write	20	5.0
Primary school	190	47.6
Secondary and above	134	33.6

Occupational status		
Self-employee	124	31.1
Government employee	48	12.0
Non-governmental employee	92	23.1
Housewife	130	32.6
Students	5	1.3
Monthly household income		
<2500 birr	94	23.6
2501-5000 birr	166	41.6
5001-7500 birr	96	24.1
7501-10,000 birr	39	9.8
>10,000 birr	4	1.0
Sex of most recent child		
Male	168	42.1
Female	231	57.9

4.2. Obstetrics Related factors

All study participants have history of antenatal care follow-up for the current delivery with 51.9% of them stating that they have more than 4 antenatal cares follow up during the current pregnancy. On the other hand 62.4% of our study participants initiated their ANC follow-up after 16 weeks of gestation. From 399 study participants involved in the survey 53.9% had 2-3 alive children (Table 2).

Table 2: Obstetrics related factors of study participants on Knowledge and practice of essential newborn care, 2023

Variables	Frequency	Percentage (%)
Number of ANC visits		
1. Three visit	26	6.5
2. Four visit	166	41.6
3. More than 4 visit	207	51.9
ANC initiation time		
Before 16 weeks of gestation	150	37.6
After 16 weeks of gestation	249	62.4
Number of alive children she has		
One	149	37.3
2-3	215	53.9
≥4	35	8.8
Mode of delivery for current delivery		
Spontaneous vaginal delivery	281	70.4
Instrumental delivery	68	17.0
Caesarean section	50	12.5

4.3 Health service related factors

Regarding to the time spent to reach health facility more than half (54.4%) of the respondent spent less than half hour to reach the nearest health facility from their home. Majority(91%) of the respondent gave birth their last child in health facility.

Table 3: Health service related factors on Knowledge and practice of essential newborn care, 2023

Time spent to reach hospital		
<30 minutes	217	54.4
≥30 minutes	182	45.6
Place of delivery previous delivery		
Health facility	363	91.0
Home	36	9.0

4.4. Knowledge related variables

Out of the 399 study participants, 75.2% of them know the importance of keeping baby skin to skin contact immediately after delivery. From the total of the study participants involved in the survey 56.1% mentioned keeping baby warm by wrapping with dry cloth. About 81.0% of our study participants informed that Umbilical stump not to be soiled with urine or faeces of the newborn. In general from 399 study participants, 53.9% of our study participants had poor knowledge about essential newborn care (Table 4).

Table 4: knowledge related variables for study done son Knowledge and practice of essential newborn care, 2023.

Variables	Frequency	Percentage (%)
Keep baby skin to skin contact immediately after delivery		
Yes	300	75.2
Keep baby warmth by wrapping dry cloth		
Yes	224	56.1
Baby be not nursed in separate room from you after delivery		
Yes	367	92.0
The umbilical stump of baby not be covered a cloth/bandage		
Yes	235	58.9
Umbilical stump be not soiled		
Yes	323	81.0
Breastfeeding a newborn immediately after delivery		
Yes	243	60.9
Feed breast milk every 2–3 hours per day		
Yes	234	58.6
Exclusive breastfeeding in the first six months		
Yes	367	92.0
Feeding colostrum		
Yes	318	79.7
A newborn requires vaccination at birth		
Yes	331	83.0
Vaccination of newborn prevents disease		

Yes	257	64.4
Receive BCG vaccine at birth		
Yes	321	80.5
Receive OPV vaccine at birth		
Yes	309	77.4
BCG protects a newborn baby from Tuberculosis		
Yes	310	77.7
OPV protects a newborn baby from Polio		
Yes	329	82.5
Eye discharge is a sign of an eye infection		
Yes	225	56.4
Reddening of Eyes is a sign of eye infection		
Yes	238	59.6
Swollen eye is a sign of eye infection		
Yes	260	65.2

4.5. Level of knowledge on ENC

Out of the total study participants, 46.1% of them had good knowledge towards essential newborn care.

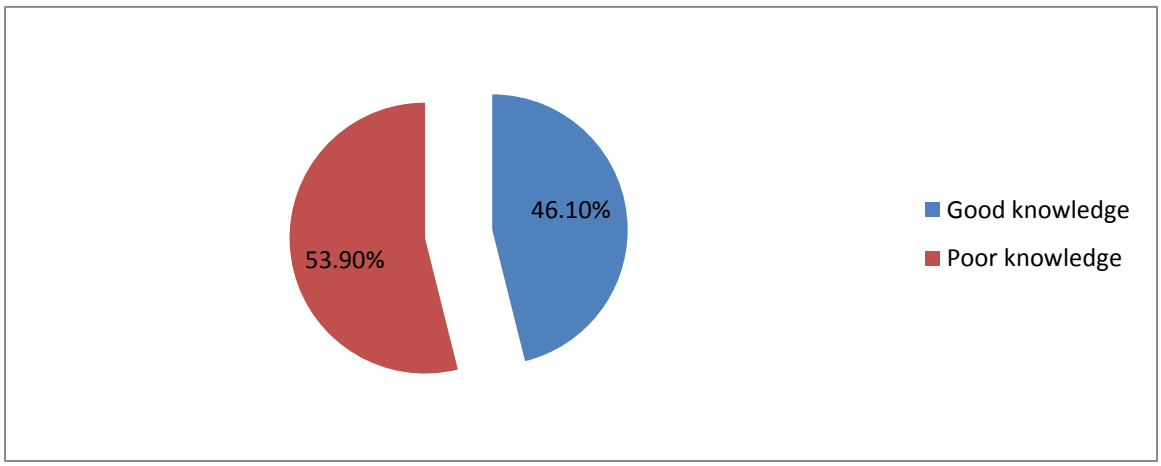

Figure 4: Pie chart showing level of knowledge of women toward essential newborn care, 2023.

4.6. Practice related variables

Regarding their practice on essential newborn care, 77.2% them changes moist cloths after drying the baby immediately after delivery, 93.7% keep newborn warm by covering all body, 77.7% of them bath their baby after 24 hours of birth, 94.5% has counseling about feeding practice, 91.7% feed exclusive breast feeding and 76.4% them mentioned the correct duration of breastfeeding(Table 4).

Table 5: Practice related variables on Knowledge and practice of essential newborn care, 2023.

Variables	Frequency	Percentage (%)
Changed the moist cloths after you dry the baby immediately after delivery		
Yes	308	77.2
No	91	22.8
Kept newborn warmth by covering all body including the head and legs		
Yes	374	93.7
No	25	6.3
Gave bath for her baby after 24 hours of birth		
Yes	310	77.7
No	89	22.3
Counseled on feeding practices		
Yes	377	94.5
No	22	4.5
Baby fed exclusively breast milk		
Yes	366	91.7
No	33	8.3
Baby fed breast milk every 2–3 hours per day		
Yes	305	76.4
No	94	23.6
The baby received eye ointment immediately after birth		
Yes	350	87.7
No	49	12.3
Not put any substance like Kul to the eye of newborn after birth		
Yes	221	55.4
No	178	46.6

4.7. Level of practice towards ENC

From the total of our study participants, 28.1% of them had poor practice level towards essential newborn care (Figure 3).

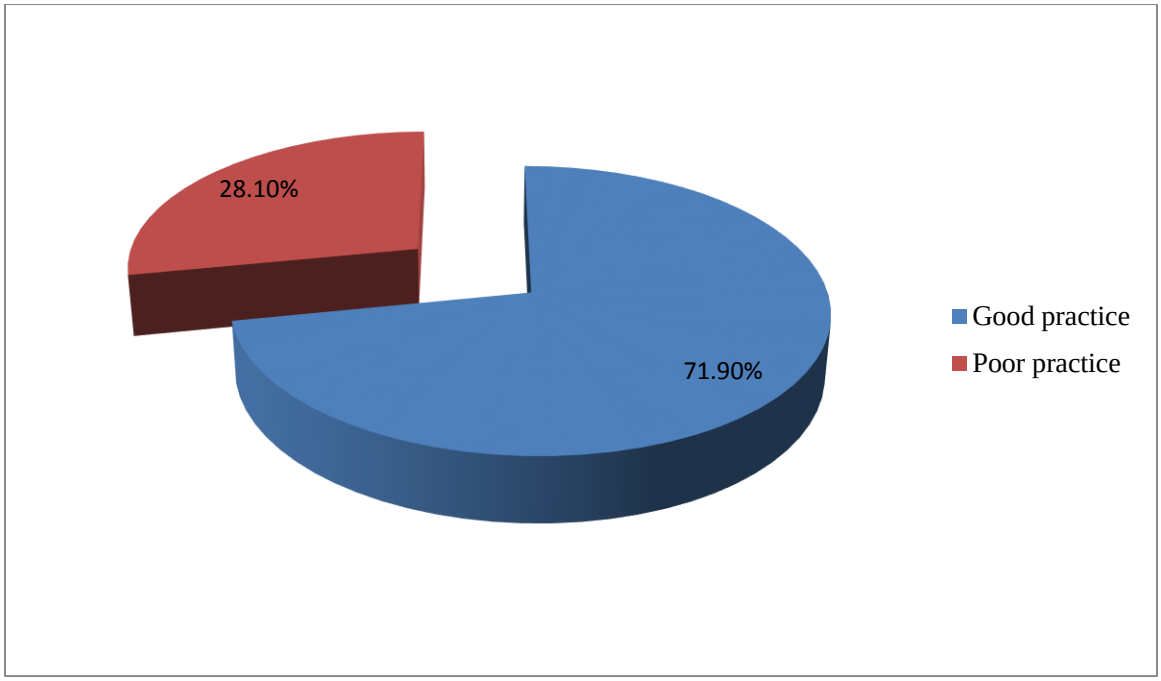

Figure 5: Pie chart showing practice level of postnatal women towards ENC, 2023

4.8. Factors associated with knowledge on essential newborn care

To assess model fitness Hosmer and Lemeshow Test was used, the enter variable is using forward LR and it has 8 step iterations history. The 8th step is the end of model. The value in this step indicates that p value is greater than 0.05 and the model fit good. As shown by Collinearity Statistics all the variables have VIF Less than 2. That indicates there is no multicollinearity in the final step.

To examine the association between the dependent and independent variables bivariate logistic regression analysis was done for all background and obstetric variables. All variables with included in bivariate analysis was entered into multivariate binary logistic regression model using forward enter method for further analysis to control the confounding factor on the dependent variables. None of the variable was removed from the model due to that there was no multicollinearity, outlier, and highest standard deviation. The model has 8 step iteration histories. The last step contained the following variables were fit for further analysis; age of respondents, educational status, occupational status, monthly income, gestational age at first ANC initiation,

number of alive children she has, distance from health facility sex of the newborn baby and mode of delivery. Finally, in the multivariate logistic regression age of respondents, educational status, occupational status, monthly income, gestational age at first ANC initiation, number of alive children she has, distance from health facility sex of the newborn baby and mode of delivery was factors significantly associated with knowledge of essential newborn care.

The odds of experiencing poor knowledge about essential newborn care are 3 times more likely among postnatal women with age group of below 20 years compared to those women age group of 35-40 years (AOR=3.14, 95% CI: (1.18, 8.33**).** Those women who are unable to read and write are 6 times more likely to have poor knowledge about essential newborn care compared to women who completed primary and above (AOR: 6.38 95% CI: (1.63, 25.3)). Postnatal women who travel greater than 30 minutes to reach health facility are almost 8 times more likely to have poor knowledge compared to those who travel less than 30 minutes (AOR: 7.8; 95 CI: (4.09, 14.9)). Self-employees are 4.5 times more likely have poor knowledge about essential newborn care compared to those government-employee postnatal women (AOR=4.48; 95% CI: (1.76, 11.4)). Postnatal women who gave female baby are almost 4.8 times more likely to have poor knowledge about essential newborn care compared to those who gave male baby (AOR=4.76; 95% CI: (2.66, 8.53)). Postnatal women who initiated ANC follow-up after 16 weeks of gestation are almost 3 times more likely to have good knowledge about essential newborn care compared to those women who initiated ANC follow-up before 16 weeks of gestation (AOR=2.98; 95% CI: (1.60, 5.53)). Those postnatal mothers who give birth through cesarean section and instrumental delivery are 2.5 and 5.2 times more likely to have poor knowledge about essential newborn care compared than those who gave birth through spontaneous delivery(AOR, 2.36, 95%CI (1.09, 5.12) and AOR 5.16, 95%CI 1.55, 17.1) respectively. (Table 6).

Table 6: logistic regression analysis result table for knowledge about of essential newborn care among postnatal women at Addis Ababa city, 2023.

Variables	Category	Poor knowledge about ENC		Crude OR with 95% CI	AOR(95%CI)	P value
		Yes	No			
Age of respondent	<==20 years	31	12	3.55(1.66, 7.57)	3.14(1.18, 8.33)	0.022
	21-25 years	51	70			
	26-30 years	96	75	2.02(0.97, 4.20)	0.79(0.28, 2.28)	0.664
	31-35 years	37	27	1	1	0.001
Religion	Orthodox	79	89	0.94(0.28, 3.20)		
	Muslim	28	15	0.45(0.12, 1.71)		
	Protestant	73	60	0.69(0.20, 2.36)		
	Catholic	30	14	0.39(0.10, 1.49)		
	Other	5	6	1		
Educational status	Illiterate	26	29	0.90(0.32, 2.50)	6.38(1.63, 25.3)	0.008
	Able to read and write	10	10	2.02(0.97, 4.20)	0.79(0.28, 2.28)	0.664
	Primary Education	96	94	0.88(0.48, 1.60)	1.27(0.58, 2.78)	0.549
	Secondary Education	83	51	1	1	0.057
Occupational status	Self-Employee	75	49	2.14(1.09, 4.22)	4.48(1.76, 11.4)	0.002
	Government Employee	20	28	1.02(0.16, 6.33)	1.74(0.25, 12.3)	0.577
	Non-Governmental Employee	61	31	0.78(0.44, 1.37)	1.29(0.58, 2.89)	0.531
	House Wife	56	74	2.02(1.22, 3.34)	2.13(1.03, 4.34)	0.040
	Student	3	2	1	1	0.577
	<2500 birr	44	50	1	1	0.001
	2501-5000 birr	90	76	0.74(0.48, 1.23)	0.53(0.24, 1.17)	0.114

Monthly income category	<5001-7500 birr	57	39	0.60(0.34, 1.07)	0.16(0.07, 0.38)	0.000
	7501-10000 birr	22	17	0.68(0.32, 1.44)	0.23(0.07, 0.63)	0.005
	>10000 birr	2	2	0.88(0.12, 6.51)	0.65(0.08, 5.37)	0.691
ANC visit time	3 Visit	19	7	1		
	4 Visit	86	80	2.53(1.01, 6.33)		
	More than 4 Visit	110	97	2.39(0.97, 5.94)		
first go for antenatal care	Before 16 weeks of gestation	65	85	1	1	
	After 16 weeks of gestation	150	99	1.98(1.31, 2.99)	2.98(1.60, 5.53)	0.001
No alive children categorically	one alive child	83	66			
	2-3 alive children	108	107	1.25(0.81, 1.89)		
	>= 4 alive children	24	11	0.57(0.26, 1.26)		
Time do you spend to reach hospital	< 30 minutes	82	135	1	1	
	>= 30 minutes	133	49	4.47(2.93, 6.85)	7.82(4.09, 14.9)	0.000
Sex of newborn baby	Male	64	104	1	1	
	Female	151	80	3.07(2.03, 4.63)	4.76(2.66, 8.53)	0.000
Place of delivery	Health Facility	192	171	1.58(0.77, 3.20)		
	Home	23	13			
mode of delivery for the current birth	Spontaneous	140	141	1	1	0.022
	Instrumental delivery	48	20	0.48(0.23, 1.05)	5.16(1.55, 17.1)	0.007
	Caesarean section	27	23	1.18(0.65, 2.16)	2.36(1.09, 5.12)	0.030

4.9. Factors associated with practice on essential newborn care

As shown by Collinearity Statistics all the variables have VIF Less than 2. That indicates there is no multicollinearity in the final step. To assess model fitness Hosmer and Lemeshow Test was used, the enter variable is using forward LR and it has 4 step iterations history. The 4^{th} step is the end of model. The value in this step indicates that p value is greater than 0.05 and the model fit good.

To check the presence of association between the independent and dependent variables, bivariate logistic regression analysis was done and all back ground and obstetric variable entered into binary logistic regression model for bivariate analysis.

All the variable included in bivariate analyses are included in further multivariate analysis in order to control the confounding factors After running each independent variable with dependent variable in bivariate analysis. Finally, after entering all background and obstetric variables in the model for multivariate analysis, the following specific variables were associated with the practice of essential newborn.

Postnatal women who have educational status of illiterate were 3 times more likely to have poor practice of essential newborn care compared to those women who have educational status of secondary and above (AOR=3.30; 95% CI: (1.53, 7.13)).

Those women who have educational status of able to read and write are 2 times more likely to poor practice essential newborn care compared to those women who have educational status of secondary and above (AOR=2.35; 95% CI: (1.04, 5.32)).

Postnatal women who gave female baby are almost 2 times more likely to have poor practice essential newborn care compared to those who gave male baby (AOR=2.15; 95% CI: (1.21, 3.84)).

Those women who gave poor knowledge on essential newborn care were 4 times more likely to have poor practice essential newborn care compared to those who gave good knowledge on essential newborn care (AOR=4.39; 95% CI: (2.56, 7.55)) (Table 7)

Table 7: logistic regression analysis result table for practice of essential newborn care among postnatal women at Addis Ababa city, 2023.

Variables	Category	Practice of ENC		Crude OR with 95% CI	AOR(95%CI)	P value
		Poor	Good			
Age of respondent	<==20 years	13	30	1		
	21-25 years	29	92	1.38(0.64, 2.98)		
	26-30 years	51	120	1.02(0.49, 2.11)		
	31-35 years	19	45	1.03(0.44, 2.39)		
Religion	Orthodox	43	125	0.29(0.04, 2.34)	0.40(0.04, 3.60)	0.413
	Muslim	6	37	0.62(0.07, 5.73)	1.42(0.13, 15.2)	0.772
	Protestant	44	89	0.20(0.03, 1.63)	0.22(0.02, 1.97)	0.175
	Catholic	18	26	0.14(0.02, 1.23)	0.33(0.03, 3.17)	0.334
	Other	1	10	1	1	
Educational status	Illiterate	22	33	2.15(1.14, 4.05)	3.30(1.53, 7.13)	0.002
	Able to read and write	4	16	1.51(0.79, 2.91)	2.35(1.04, 5.32)	0.041
	Primary Education	45	145	2.67(0.79, 9.04)	3.40(0.86, 13.5)	0.082
	Secondary Education	41	93	1	1	0.032
Occupational status	Self-Employee	47	77	1		
	Government Employee	9	39	2.65(1.18, 5.95)		
	Non-Governmental Employee	23	69	1.83(1.01, 3.32)		
	House Wife	31	99	1.95(1.13, 3.35)		
	Student	2	3	0.92(0.15, 5.68)		
Monthly income category	<2500 birr	32	62	1		
	2501-5000 birr	48	118	1.27(0.74, 2.18)		
	<5001-7500 birr	25	71	1.47(0.79, 2.74)		

	7501-10000 birr	6	33	2.84(1.08, 7.48)		
	>10000 birr	1	3	1.55(0.16, 15.5)		
ANC visit time	3 Visit	11	15	1		
	4 Visit	50	116	1.70(0.73, 3.96)		
	More than 4 Visit	51	156	2.24(0.97, 5.20)		
first go for antenatal care	Before 16 weeks of gestation	32	118	1.75(1.09, 2.80)		
	After 16 weeks of gestation	80	169	1		
No alive children categorically	one alive child	40	110	1		
	2-3 alive children	57	157	1.00(0.63, 1.61)		
	>= 4 alive children	15	20	0.49(0.23, 1.04)		
Time do you spend to reach hospital	< 30 minutes	53	164	1.48(0.96, 2.30)		
	>= 30 minutes	59	123	1		
Sex of newborn baby	Male	32	136	1	1	
	Female	80	151	2.25(1.41, 3.61)	2.15(1.21, 3.84)	0.009
Place of delivery	Health Facility	98	265	1.72(0.85, 3.50)		
	Home	14	22	1		
mode of delivery for the current birth	Spontaneous	79	202	0.81(0.40, 1.63)		
	Instrumental delivery	21	47	0.71(0.31, 1.62)		
	Caesarean section	12	38	1		
Knowledge	Poor knowledge	88	127	4.62(2.78, 7.68)	4.39(2.56, 7.55)	0.000
	Good knowledge	24	160	1	1	

NB: * p-value <0.05 1.00 reference for category

5. Discussion

This study intends to assess the knowledge and practice level of postnatal women towards essential newborn care.

This study revealed that the level of good knowledge towards essential newborn care was 46.1%. This finding is relatively lower than the study done in Harar town. Another systematic and metal analysis done in Ethiopia revealed that level of good knowledge towards essential newborn care as 55.1% indicating that it is relatively higher than the current study(Berhea et al., 2018). Besides, the study done in Debre Tabor hospital indicated that the level of good knowledge towards essential newborn care among postnatal women as 81.2%(Yisak & Ewunetei, 2022). This dissimilarity might be due to variation in health education service availability(Leta, 2022). Another study done in Mekelle city revealed that the level of knowledge on essential new care as 36.1% which is lower than the current study(Berhea et al., 2018). Another study done in Addis Ababa city also revealed that the level of poor knowledge towards essential newborn care among postnatal women as 60.2%(Berhan & Gulema, 2018). This similarity could be attributed due to the same socio-demographic factors and the tool used to assess level of knowledge towards essential newborn care is same.

Study done among postnatal women in Bangladesh revealed that only 37% of women had good knowledge towards essential newborn care which is lower than the current finding(Majumder et al., 2018). This dissimilarity could be due to the difference in study period, and study tools. In addition, socio-demographic difference may attribute to this variation. Another study done among Sudanese women revealed that the proportion of women with good knowledge towards essential newborn care was 66.4% which is higher than the current study(Al-Nafeesah et al., 2022).

Study done in Chikun local government of Nigeria indicated that the proportion of women with good knowledge towards essential newborn care as 48.3%. This finding supports the current study(Nmadu et al., 2021).

The odds of experiencing good knowledge about essential newborn care are 3 times more likely among postnatal women with age group of 21-25 years compared to postnatal women with age group of below 21 years. This study was supported by the study done in Bangladesh women(Majumder et al., 2018).

Those women who are able to read and write are 6 times more likely to have good knowledge about essential newborn care compared to women who have educational status of illiterate. This finding was supported by systematic review and meta-analysis done in Ethiopia(Amolo, Irimu, & Njai, 2017; Ayele et al., 2022).

Postnatal women who travel less than 30 minutes to reach health facility are almost 8 times more likely to have good knowledge compared to those who travel more than 30 minutes. Those women who need to travel more than 30 minutes to access health facility may have limited access to health education by health care providers and health extension workers. Therefore, whose postnatal women who need to travel more than 30 minutes may have low or poor knowledge towards essential newborn care? This finding was supported by a study conducted in Iran (Akter, 2016)

Those postnatal women who have initiated their first ANC follow-up before 16 weeks of gestation are almost 3 times more likely to have good knowledge about essential newborn care compared to who initiated ANC follow-up late or after 16 weeks of gestation. This finding was supported by the previous studies done in different parts of Ethiopia (Efa, 2020, Abebe, 2021, Chichiabellu, 2018) indicating that antenatal care follow-up boosts women's level of knowledge towards essential newborn care. During ANC follow-up initiation most of the time health care providers offer counseling about newborn care practice, danger sign, family planning and place of delivery after 16 weeks of gestation. Our finding supports this statement.

Postnatal women who gave male baby are almost 5 times more likely to have good knowledge about essential newborn care compared to those who gave female baby. This finding was supported by a community based cross sectional study done in Eastern Tigray(Tura, 2015, & Misgna, 2016). The possible reason for this study was cultural male child preferences over female in Ethiopia.

In this study the finding indicated that those women who are government-employed are 6 times more likely to have good knowledge about essential newborn care than those non-governmental employed women. This could be due to that government employed women had educational status and spend more time with their newborn baby than those self-employed in private organization. Study done in North Ethiopia Aksum town revealed that occupation of women as one determinant factor for essential newborn care practice and knowledge supporting the current findings (Berhe, 2017).

Postnatal women who have higher educational status are more likely to practice essential newborn care compared to those women who have educational status of illiterate. This finding was supported by systematic review and meta-analysis done in Ethiopia(Amolo, Irimu, & Njai, 2017; Ayele et al., 2022). This is due to that those who educated more understand easily what they counseled from health professional and have good awareness about ENC.

Postnatal women who gave male baby are almost 2 times more likely to practice essential newborn care compared to those who gave female baby. This finding was supported by a community based cross sectional study done in Eastern Tigray(Tura, 2015, & Misgna, 2016). The possible reason for this study was cultural male child preferences over female in Ethiopia.

Those women who gave good knowledge on essential newborn care were 4 times more likely to practice essential newborn care compared to those who gave poor knowledge on essential newborn care. This finding was supported by study done in Nepal and Gujarat India (Chaudhary, 2013, & Ekirapa-Kiracho, 2017). This is due to that those who have good knowledge practice more.

6. Conclusion

Compared to the previous studies our finding indicated that the level of poor knowledge towards essential newborn care among postnatal women was high. Age being below 25 years**,** educational status being unable to read write, distance to health facilities being >30 minutes, occupation status being self-employed, sex of baby being female, and late ANC initiation are significant predictors of having poor knowledge about ENC.

The level of poor practice towards essential newborn care for newborn is relatively high. Educational status of being illiterate, Educational status of being able to read and write, having female baby and having poor knowledge on essential newborn care were significant predictors of having poor practice about ENC.

7. Recommendations

To Addis Ababa health bureau

- Addis Ababa health bureau should ensure accessibility of health facility near in distance less than 30 minute for all women.
- In collaboration with the town's education bureau and other stakeholders health bureau should ensure the universal education for

To health professionals

- Enhance pregnant women awareness about essential newborn care during first antenatal care contact.
- Encourage mothers to start ANC at early gestational age before 16 weeks

To Women:

- Advocate about the importance of self-dependence to enhance women's practice towards essential newborn care.

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9. Annex

9.1. Information sheet

Title of the project: Knowledge and practice of essential newborn care and associated factors among postnatal women at selected public health center of Addis Ababa, 2023

Name of investigators: Bethel Aberra

My name is Bethel Aberra; I am working on Essential new born care knowledge and practice assessment. You are kindly invited to participate in this study .Before you decided to take part in the study, it is prudent for you to understand why this research is being done and what it involves. Please take time to listen or read to the following information carefully .Raise question if there is anything not clear .Thank you for your time.

Background of the study

We would like to see the Knowledge and practice of essential newborn care and associated factors among postnatal women at selected public health center of Addis Ababa

Selection criteria

You are selected to participate in this research project randomly from health care providers attending deliveries. You will be interviewed or fill the questioners

Possible harm

There is no risk in participating in this study, you will be interviewed with questionnaire and the interview will not take more than 15 minutes.

Benefits

The outcome of the study will help us to recommend interventions that will strengthen the essential new born care in the country which will have impact in reducing neonatal mortality

Confidentiality

During the data collection your name and personal identifications will not be asked. All information collected during the study about you will be coded and the data collection tools will be locked and will not be accessed by any individuals. All the data and the information's will be confidential.

Autonomy

All the information you give is highly valuable to the study .It is up to you to decide whether to take part or not. If you decided to participate, you will be given this information that to keep and be asked to sign a consent forum. You have the right to withdraw and withdrawal from the study will not have an impact on your treatment

Who is organizing and funding the research?

Research grant will be from AAU post graduate office. The research organized by researchers in Addis Ababa University, College of Development Studies, Ethiopia Statistical Service. The Research protocol has been reviewed by research committee of Department of Population Studies and by institutional review board of AAU.

Institutional Review Board (IRB) address:

College of Development Studies

Addis Ababa University

Addis Ababa, Ethiopia

Contact person Bethel Aberra, Tel.0911001929

E-mail address: girumbatz@gmail.com

9.2. Informed consent

.We are carrying out a study to assess Knowledge and practice of essential newborn care and associated factors among postnatal women at selected public health center of Addis Ababa, 2023. We kindly request you to participate in the study by responding to the interview. We assure you that information obtained is kept confidential. If you have any question we will be so happy to respond now and at any time during the Process of data collection.

I confirm that I have understood what has been read/what I have read has been clear to me and has agreed to participate in the study

Name of participant ----------

Signature----------

Name of Data collector ----------

Signature----------

9.3 Questionnaires

Hello! My name is **Bethel Aberra**. I am data collector for a research conducted on **"**Knowledge and practice of essential newborn care and associated factors among postnatal women at selected public health center of Addis Ababa, 2023**"**. Participating in this study will not have any risk or harm. You either have full right to participate or decline participation in this study.

Part I: Socio-Demographic Characteristics

S. N	Questions	Responses	Rem.
101	Age	_____in completed years	
102	Religion	1. Orthodox 2. Muslim 3. Protestant 4. Catholic 5. Other (Specify)	
103	Educational status	1. Illiterate 2. Able to read and write 3. Primary education 4. Secondary education 5. Tertiary	
104	Occupational status	1. Self-employee 2. Government Employee 3. Non-governmental employee 4. House wife 5. Student 6. Other	
105	Marital status of respondents	1. Married 2. Divorced 3. Widowed	
106	Average monthly income	---------- (Specify)	
Part II: Obstetric related variables			
201	Do you have ANC visit for recent pregnancy	1. Yes 2. No	
202	If "Yes" to Q201, how many times did you visit for antenatal care?	4. 1 visit 5. 2 visit 6. 3 visit 7. 4 visit	

		8. More than 4 visit	
203	When did you first go for antenatal care?	1. Before 16 weeks of gestation 2. After 16 weeks of gestation	
204	How many alive children do you have?	---------- (Specify in number)	
205	How much time do you spend to reach hospital?	1. < 30 minutes 2. ≥30 minutes	
206	What was the sex of most recent child?	1. Male 2. Female	
207	Where was the place of delivery for preceding pregnancy?	1. Health facility 2. Home	
208	Who attended preceding delivery?	1. Skill health professionals 2. Trained traditional birth attendant 3. Traditional birth attendant	
209	What was the mode of delivery for the current birth	1. Spontaneous vaginal delivery 2. Instrumental delivery 3. Caesarean section	
Part III: Knowledge related variables			
301	Keep baby skin to skin contact immediately after delivery	1. Yes 2. No	
302	Keep baby warmth by wrapping dry cloth	1. Yes 2. No	
303	Baby be not nursed in separate room from you after delivery	1. Yes 2. No	
304	The umbilical stump of baby not be covered a cloth/bandage	1. Yes 2. No	
305	Umbilical stump be not soiled	1. Yes 2. No	
306	Breastfeeding a newborn immediately after delivery	1. Yes 2. No	
307	Feed breast milk every 2–3 hours per day	1. Yes 2. No	

308	Exclusive breastfeeding in the first six months	1. Yes 2. No	
309	Feeding colostrum	1. Yes 2. No	
310	A newborn requires vaccination at birth	1. Yes 2. No	
311	Vaccination of newborn prevents disease	1. Yes 2. No	
312	BCG protects a newborn baby from Tuberculosis	1. Yes 2. No	
313	OPV protects a newborn baby from Polio	1. Yes 2. No	
314	Eye discharge is a sign of an eye infection	1. Yes 2. No	
315	Reddening of Eyes is a sign of eye infection	1. Yes 2. No	
316	Swollen eye is a sign of eye infection	1. Yes 2. No	
Part IV: Practice of Essential Newborn Care Related Questions			
401	Changed the moist cloths after you dry the baby immediately after delivery	1. Yes 2. No	
402	Kept newborn warmth by covering all body including the head and legs	1. Yes 2. No	
403	Gave bath for her baby after 24 hours of birth	1. Yes 2. No	
404	Baby fed exclusively breast milk	1. Yes 2. No	
405	Baby fed breast milk every 2–3 hours per day	1. Yes 2. No	

406	The baby received eye ointment immediately after birth	1. Yes 2. No	
407	Not put any substance like Kul to the eye of newborn after birth	1. Yes 2. No	

THANK YOU