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COLLEGE OF HEALTH SCIENCES

SCHOOL OF NURSING AND MIDWIFERY

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KNOWLEDGE ON NEONATAL DANGER SIGNS AND ASSOCIATED FACTORS AMONG POST NATAL MOTHRES IN PUBLIC HOSPITALS OF ADDIS ABABA, ETHIOPIA, 2019

PRINCIPAL INVESTGATOR: WUDIE ENEYEW (BSc)

MAJOR ADVISOR: RAJALAKSHMI MURUGAN (Asst. Professor)

CO-ADVISOR: MR. TEWODROS TESFAYE (BSc, MSc)

A THESIS SUBMITTED TO THE NURSING AND MIDWIFERY DEPARTMENT, SCHOOL OF NURSING AND MIDWIFERY, COLLEGE OF HEALTH SCIENCES, ADDIS ABABA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR MASTERS OF DEGREE IN PEDIATRIC AND CHILD HEALTH NURSING

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KNOWLEDGE ON NEONATAL DANGER SIGNS AND ASSOCIATED FACTORS AMONG POST NATAL MOTHRES IN PUBLIC HOSPITALS OF ADDIS ABABA, ETHIOPIA, 2019. A CROSS-SECTIONAL STUDY

BY: WUDIE ENEYEW (BSc)

ADRESS: e-mail wudieeneyew01@gmail.com

ADVISORS: RAJALAKSHMI MURUGAN (Ass. Professor)

MR. TEWODROS TESFAYE (BSc, MSc)

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ADDIS ABABA, ETHIOPIA

APPROVAL SHEET

ADDS ABABA UNIVERSITY

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I, the undersigned MSc student, declare that I have submitted my original work on the title knowledge on neonatal danger signs and associated factors among post natal mothers in Addis Ababa, Ethiopia, 2019 for examination.

Submitted by:

Wudie Eneyew (BSc) _____ _____

Name of student Signature Date

This thesis work has been submitted for examination with my approval as an advisor.

Approved by:

1. Rajalakshmi Murugan (Asst. professor) _____ _____
   Name of Major Advisor Signature Date
2. Mr. Tewodros Tesfaye (BSc, MSc) _____ _____
   Name of Co-Advisor Signature Date

APPROVAL BY THE BOARD OF EXAMINATION

This thesis by Wudie Eneyew is accepted in its present form by the board of examiners as satisfying thesis for degree of masters in Pediatrics and child health nursing.

Internal examiner:

_____	_____	_____	_____
Name	Rank	Signature	Date

Research advisors:

Rajalakshmi Murugan (Asst. professor) _____	_____	_____
Name	Rank	Signature	Date

Mr. Tewodros Tesfaye (BSc, MSc) _____	_____	_____
Name	Rank	Signature	Date

Department head

_____	_____	_____	_____
Name	Rank	Signature	Date

STATEMENT OF DECLARATION

By my signature below, I declare and affirm that this thesis is my own work. I have followed all ethical principles of scholarship in the preparation of this thesis and all scholarly matter that is included in the thesis has been given recognition through citation. I affirm that I have cited and referenced all sources used in this document. Every effort has been made to avoid plagiarism in the preparation of this thesis.

This thesis is submitted in partial fulfillment of the requirement for a graduate degree from Addis Ababa University at College of Health Sciences, School of Nursing and Midwifery in child health nursing. The thesis will be deposited in Addis Ababa University library and will be made available to borrowers under the rules of the library. I solemnly declare that this thesis has not been submitted to any other institution anywhere for the award of any academic degree, diploma of certificate.

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Wudie Eneyew (BSc) _____ _____

Name of student Signature Date

Major advisor: Rajalakshmi Murugan (Asst. professor**)**

Name of major advisor _____ _____

Signature Date

Co-advisor: Mr. Tewodros Tesfaye (BSc, MSc)

Name of co-Advisor _____ _____

Signature Date

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LIST OF ACRONYMS AND ABBREVIATION

AARHB	Addis Ababa Regional Health Bureau
ANC	Ante Natal Care
AOR	Adjusted Odds Ratio
CI	Confidence Interval
COR	Crud Odds Ratio
CSAE	Central Statistical Agency of Ethiopia
EDHS	Ethiopia Demographic and Health Survey
ETB	Ethiopian Birr
HEW	Health Extension Workers
IMNCI	Integrated Management of Newborn and Childhood Illness
IRB	Institution Review Board
MCH	Maternal and Child Health
NGO	Non-Governmental Organization
NICU	Neonatal Intensive Care Unit
PNC	Post Natal Care
PNP	Post Natal Period
SD	Standard Deviation
SPSS	Statistical Package for Social Science
TASH	Tikur Anbessa Specialized Hospital
TBA	Traditional Birth Attendant
UNICEF	United Nation International Children's Emergency Fund
WHO	World Health Organization

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ABSTRACT

Background: Neonatal danger signs are now a public health problem and a contributing factor for neonatal death. Even though, intervention programs like integrated management of newborn and childhood illness and institution delivery service are implemented danger signs related neonatal morbidity and mortality is high still now because of lack of maternal knowledge towards it. Early detection of neonatal danger signs is an important step towards improving newborn survival. Therefore, mothers' knowledge is needed to reduce neonatal death and further complication of those danger signs.

Objective: The aim of this study was to assess the knowledge on neonatal danger sign and associated factors among post natal mothers in public hospitals of Addis Ababa Ethiopia.

Methods and materials: An institutional based cross sectional study was conducted among 363 postnatal mothers from March 15th to May 15th, 2019. Systematic random sampling technique was used to select the study participants. Interviewer-administered, structured and pretested questionnaire was used to collect the data. The data were checked for completeness, entered to Epi- Data version 4.4.3.1 and exported to SPSS version 25.0 for analysis. Bivariable and multivariable logistic regression analysis with 95% CI, crud odds ratio and adjusted odds ratio were used to identify factors associated with the outcome variable. Statistical significance was declared at P-value < 0.05. Then the results were presented with text, tables, graphs and figures for different variables.

Result: A total of 363 post natal mothers were interviewed with a response rate of 100%. Overall, only 33.1% of mothers had good knowledge about neonatal danger signs. Factors like maternal education college and above (AOR=2.11, 95% Cl: 1.51-2.99), caesarean section mode of delivery (AOR=3.72, 95% Cl: 1.71-8.12), parity (AOR=5.34, 95% Cl: 1.64-2.64) and education during PNC follow up (AOR=2.77, 95% Cl: 1.49-5.15) were significantly associated with the level of good maternal knowledge. Similarly, access to television was also a statistical significant factor for maternal knowledge (AOR=2.15, 95% Cl: 1.11-4.15).

Conclusion: Maternal knowledge on neonatal danger signs was poor. Therefore educational intervention during ante natal care, institution delivery and post natal care visit, advocating the use of media and increase maternal birth preparedness are highly recommended.

Key words: Neonatal danger signs, neonate, knowledge, post natal mothers.

1. INTRODUCTION

1.1. Background

Neonatal danger signs are non-specific signs of severe illness and can be a manifestation of almost any newborn disease that can be easily identified by non-clinical personnel including the mother. They are clinical signs that would indicate high risk of neonatal morbidity and mortality. Reduction of neonatal mortality relies on early identification of neonatal danger signs by mothers (1,2).

“Neonates’’ are terms that refer to the first 28 days of life who are more prone to show subtle signs of illness. Neonatal period is a dangerous time for neonates and high mortality risk. During this period, the highest mortality occurs at the time of birth and decreases over the subsequent days and weeks. Up to 36% of neonatal deaths occur within the first 24 hours of birth and nearly 73% in the first week of life which needs special attention because most of the health problems are life threatening to them (3–5). They often present with non-specific signs and symptoms of severe illness that indicate presence of severe infection which may need immediate care (6).

The leading causes of neonatal death are preterm birth complications, intra partum related events and sepsis or meningitis (7). However as different studies reported many of neonatal death related to neonatal danger signs are easily preventable with simple, cost-effective interventions administered before, during and immediately after birth concerning maternal knowledge on neonatal danger signs (8,9). Many clinical signs point to possible bacterial infection in sick neonates which are most informative and easy to check neonatal illness (10). However, only few mothers recognize signs of newborn illness, and/or a majority of the neonates are not taken to health facilities when they are sick (8).

These neonatal danger signs are: Difficulty of feeding, convulsion, respiratory rate of 60 or more (fast breathing), difficulty in breathing, temperature of ≥ 37.5degree centigrade (fever), temperature ≤ 35.5 degree centigrade (hypothermia), lethargy, yellow soles (sign of jaundice), vomiting everything, Very small size at birth(<2.5kg), skin pustules and no stool after 24 hours (11–13). Since these danger signs are signs of serious bacterial infections, most neonates with

danger sign need urgent referral to hospital. They may need lifesaving treatment with injectable antibiotics, oxygen or other treatments that may not be available at home and in the health post which is entirely relies on mothers' knowledge (11).

As world health organization and United Nation International Children's Emergency Fund (WHO and UNICEF) recommend, health workers are trained to assess, classify and work with partners to put newborn health on global and national level and increase maternal knowledge about newborn danger signs are important points to reduce danger sign related death (11,13). Though these intervention programs are sated, about 98% of new-born deaths occur in developing countries, where most newborns deaths occur at home. The main obstacles in improving new-born survival are that many babies are born at home without skilled attendance and there is no early recognition of neonatal danger signs (14).

A mother is the first person to recognize even small changes in neonates identify them, and treat them at the initial stage, regulate the child's behavior, attitudes, outlook and home environment in family, since these are the basic factors that influence the growth of neonates (2). To ensure neonates quality of life mothers need to have good knowledge towards neonatal danger signs (2,8,14).

1.2. Statement of the problem

Globally neonatal mortality is still a significant public health problem which accounts for more than 60% of new-born deaths before their first birthday (15). Over 1800 newborns die every day mostly resulted from mothers 'failure to identify danger signs of neonate worldwide (14,16). Most neonatal deaths 99 % occur in low and middle-income countries and about 50% of the deaths occur at home due to lack of knowledge towards severe infection signs among mothers (17). Almost, 80% of the world neonatal death, 41 % of death is found in sub-Saharan Africa who has poor knowledge of severe newborn infection signs(danger sings) (10,15). In Nigeria annually more than 0.25 million neonates died and most of the neonates death occur at home without treatment (18). According to Ethiopian Demographic and Health survey (EDHS) 2016, neonatal mortality rates accounts 29 deaths per 1,000 live births and almost half of this death occur due to lack of health seeking behavior of mothers (19).

Neonatal danger sign has become a common health problem in many developing countries including Ethiopia. More than 25% of the neonates were born with danger sign. Neonates with multiple danger signs were more likely to develop multiple complications during the neonatal period and mortality risk may be even higher (20). Even though, maternal knowledge on neonatal danger signs is important to reduce neonatal morbidity and mortality, the prevalence of their knowledge is very low in Africa including Ethiopia (2,9). In Eastern Africa (Uganda) only 14.8% of mothers can identify two danger signs (8) and in sub-Saharan African countries specifically in Ghana, the prevalence of mothers' knowledge is only 20.3% (9). In Eastern Ethiopia, only 9.38% of mothers have knowledge regarding to neonatal danger signs (21).

Reducing neonatal morbidity and mortality requires mothers or immediate caregiver's recognition of suggestive danger signs and visiting the nearby clinic for early treatment (14,21). In Ethiopia despite different strategies, intervention programs like integrated management of newborn and childhood illness(IMNCI) and institutional delivery are implemented (11) to reduce danger sign related complication and mortality among neonates, neonatal death due to danger sign is high up to now which needs further study (20–22). In Ethiopia nearly all 94 % of neonatal and nationally 42% of under-five death occurred at home due to the fact that lack of maternal recognition towards neonatal danger signs (23). The knowledge level on those signs of severe illness has been under studied, resulting in difficulty making progress to reduce neonatal

mortality because of delay in seeking care (19). So, improving maternal knowledge regarding neonatal danger sign is a key entry point for reduction of neonatal mortality (18).

Therefore, this study was derived because of the following reasons: First, even though, several studies have examined the determinants of neonatal mortality, limited studies were done on neonatal danger signs and mothers knowledge on it which are potentially cause the morbidity and mortality of neonates. Second, as far as my knowledge, despite neonatal intensive care unit (NICU) is the most important place where most neonates with danger signs are found, there is no any study which includes this unit to assess mothers' knowledge; therefore there is a need to include this unit. Third, there is a gap and controversy in assessing mothers' knowledge on neonatal danger signs. Because, most of the researchable studies in Ethiopia, even in foreign countries assessed mother's knowledge based on only one danger sign out of WHO recognized danger signs, with small sample size and the problem of danger signs related death is not reduced still now.

Fourth, in most studies important factors like obstetric factors (parity and mode of delivery) and birth preparedness were not took into consideration. Fifth, almost all studies assessed maternal knowledge after 28 days (in infant and child stages) which are prone to recall bias. Six, as far as my knowledge there is no any study conducted on mothers' knowledge towards neonatal danger signs and associated factors in the study area till this time. That's why this study was intrinsically derived to conduct on the study area by making some modifications like, change the study area to institutional based, include NICU in the study, add some additional neonatal danger signs and add birth preparedness(includes 4 variables) as additional factor. Therefore, this study was intended to assess mother's knowledge on neonatal danger signs and identify factors affecting their knowledge.

1.3. Significance of the study

It is known that delay in treating neonates with danger signs contributes significantly to high neonatal mortality and ultimately to the under-five and infant mortality rate, so that this study will provide a better insight about knowledge on neonatal danger sign and associated factors for:

For mothers and the community at large to have knowledge about signs of their neonate illness and seek immediate health care to reduce neonatal mortality. Similarly, for health professionals including nurses to improve existing knowledge, to take measures, to improve mothers' knowledge through training program, to increase counseling of mothers including further promotion of birth preparedness and neonates quality of life. Likewise, the result of this study will help health professionals to give continuous and more positive feedback along with the negative effect of neonatal danger sign as well as to enhance education of mothers in antenatal care, post natal care and those discharged from health facilities after delivery.

It is also important for nursing education and practice regarding neonatal care. Inaddtion to this, it is important for authorities in health organization and different stake holders to provide training programs which focused on mothers concerning on knowledge about neonatal danger sign and its associated factors as well as to expand Ante Natal Care (ANC), institution delivery and Post Natal Care (PNC) service. Furthermore, it is also used for policy makers to write guidelines on management of neonatal danger signs in the community and health institution. Moreover, it is useful for investigators as a reference for future research in the study area.

2. LITRATURE REVIEW

2.1. Mothers' Knowledge on Neonatal Danger Signs

Reducing neonatal morbidity and mortality needs immediate caregiver's recognition of suggestive danger signs. Mothers' knowledge on neonatal danger signs is crucial to influence their decisions to seek immediate health care for their sick neonate. Failure to seek professional help and visiting the nearby clinic for early treatment is highly related to lack of knowledge on neonatal danger signs (2,8,24).

According to cross-sectional studies conducted in Bangladesh and Nepal the overall prevalence of mothers' knowledge on neonatal danger sign was 35.63 and 50% respectively (25,26). A similar study conducted in Enugu state in Nigeria using cross sectional study design indicated that only 30.3% of mothers had knowledge on more than three of the WHO recognized danger sign but majority of the mothers around 95.2% had knowledge on only fever while only 2.9% and 0.3% correctly listed up to six and seven danger sign respectively. Whereas, about 4.8% of mothers couldn't able to list even one danger signs (27).

Another cross-sectional study done in University of Port Harcourt in Nigeria using cross-sectional study design on 146 post natal mothers revealed that almost 50% of mothers had poor knowledge regarding to neonatal danger sign whereas, 45.2% of mothers had good knowledge only on fast breathing (28). Likewise, an institution based cross sectional study conducted in South Sudan revealed that the prevalence of maternal knowledge was only 20.4% those who able to identify four or more danger signs whereas 47.8% of mothers had no any knowledge on any of the neonatal danger signs (29).

An institution based cross-sectional study conducted in Kenya showed that the prevalence of good knowledge among mothers was only 15.5%. Despite about 84.5% of mothers had poor level of knowledge, 74.9% of postnatal mothers recognized hotness of the body (fever) as common danger signs. Moreover, poor feeding and lethargy/unconsciousness were identified as new born danger signs by 40.1% and 5.8% of mothers respectively. Whereas only 11.1% and 9.7% of mothers had knowledge on convulsion and hypothermia sequentially (30).

According to the study done in West African country in Ghana using cross-sectional study design the total prevalence of maternal knowledge was only 28.1% whereas, 71.9%, and 28% of mothers mentioned greater than two and three neonatal danger signs respectively. Overall ,93.6%, 94.3%, 95.1% and 92.3% of mothers did not know that Yellow palms, baby too small, redness of umbilical stump, and unconsciousness were neonatal danger signs respectively (31). Similarly, a study conducted in 4 regions of Ethiopia (Oromia, Tigray, Amhara and Southern Nations) on newborn care practice at home and in health facilities revealed that only 29.3% of mothers had good knowledge towards newborn danger signs who could mention 3 or more danger signs out of a list of 11. Based on this study, 83.6% had good awareness on fever as major neonatal danger signs. To a lesser extent, 39.5% ,21.1% ,17.3%, 12.7%, 10.3% of mothers had knowledge towards poor feeding/suckling, difficult/fast breathing, lack of consciousness, convulsions and redness of the eye respectively and only 8.5%,3.5% , and 1.7% of mothers had knowledge on cold temperature, ,lethargy, and yellow palms, eyes, or soles and only 46.2% of neonates were taken to health facilities (32).

According to a community based cross- sectional studies done in Tenta District, Northeast Ethiopia and Woldia,76.7% of mothers noticed one or more of their newborn danger signs and overall prevalence of maternal knowledge on neonatal danger signs was only 11.67% respectively (33,34).

2.2. Associated factors of maternal knowledge towards neonatal danger sign

Different studies showed that age, high educational level of both mothers and husband ,family income, occupation of both the mother and husband, ANC and PNC follow up and birth preparedness are the major contributing factors affecting mothers' knowledge on neonatal danger signs whereas, religion, parity, delivery assistant and marital status are less contributing factors regarding knowledge on neonatal danger signs (8,33,34).

2.2.1. Socio-demographic characteristics of the mother

Regarding to age of the mother studies conducted in Bangladesh showed that those mothers who had middle age were 1.67 times more knowledgeable (25). On the other hand, cross-sectional studies conducted in Nigeria, Sudan and Kenya revealed that the age of the mothers had no any

significant association with mothers' knowledge on neonatal danger signs (27,29,30). In contrast, another institution based cross-sectional study conducted in Woldia general hospital indicated that those mothers whose age 18-35 years were 1.33 more likely to be knowledgeable as compared to mothers who were < 18 years old (34).

Studies conducted in Nigeria and Kenya indicated that maternal marital status had no significant association with knowledge on neonatal danger signs (27,30). On the other hand, a study done in Woldia showed that, marital status 2.50 had positive association with maternal level of knowledge to identify different neonatal danger signs. Those mothers who are widowed had three times less likely to identify at least six neonatal danger signs (34). A study done in India indicated that there is a significant association between level of knowledge on selected neonatal danger signs among prim mothers with religion (35). On the other hand, a study done in Nigeria reported that there was no significant association between maternal religion and maternal knowledge (27).

In income consideration, according to a study done in Indian family income was not significantly associated with mothers' knowledge (2). On the other hand a study conducted in Mekelle city revealed that those mothers who had a household income of 501 to 1000 Ethiopian Birr(ETB) was 2.2 times more likely to be aware of neonatal danger signs and those who had more than 1000 Ethiopian Birr monthly incomes were also 2.9 times more likely to be aware of the defined neonatal danger signs (36). Regarding family size or number of children studies conducted in India, Nigeria and revealed that there was no any significant association between number of children or family size and maternal knowledge on neonatal danger signs (2,27,37).

Regarding place of residence a cross-sectional studies done in Bangladesh and Baghdad revealed that there was no significant association between the knowledge level of danger signs with place of living (25,37). In contrast, a study conducted in Woldia and Mekelle showed that mothers who lived in the urban area were 22% and 4.1 times more likely to have knowledge about neonatal danger signs as compared to those living in rural area respectively (34,36).

Focusing on educational status a study done in Bangladesh showed that mothers who had high educational level were 3 times more knowledgeable than their counter part (25). Another cross-sectional study done in Gondar university revealed that, mothers who had mother's and own

husband education for college and above were three times and greater than 3 times to be knowledgeable about neonatal danger signs as compared to primary education and not taking formal education respectively (38). Likewise, a study done in Woldia revealed that mothers who were collage and above education level were three times and more than three times were knowledgeable about neonatal danger signs as compared to mothers who can't read and write, respectively(34). In contrast to this, the study done in Rural Uganda reported that there was no significant association between education and maternal knowledge (8).

Regarding occupation studies conducted in Bangladesh, and Baghdad showed that there was significant association between mothers knowledge on neonatal danger signs and occupation (25,37). On the other hand, a study done in Nigeria indicated that maternal and husband occupation was no associated with mothers' knowledge on neonatal danger signs (27).

2.2.2. Maternal health service exposure and obstetric factors

A study done in Baghdad showed that mothers who had history of ANC attendance and more than 4 visits were significantly associated with mothers level of knowledge on neonatal danger signs more than those who did not have a history of ANC attendance (37). According to a facility based cross-sectional study done in Rural Bangladesh on 142 mothers, postnatal care and increased ANC follow up were associated with knowledge of at least one neonatal danger sign among post natal mothers. Likewise, high parity was associated with an increased maternal knowledge of newborn danger signs but there was no significant association between maternal knowledge and delivery assistant as well as mode of delivery (39).

A cross- sectional study conducted in Urban Slums revealed that, those mothers who had delivered at home had 30% lesser awareness as compared to those who went for institutional delivery (40). According to a study done in Sub-district hospitals of Bangladesh, mothers who had increased parity and hospital delivery were two times knowledgeable than their counter part. Similarly, mode of delivery had an effect on maternal knowledge regarding neonatal danger sign (25). On the other hand, a cross-sectional study conducted in Chencha District, Southern Ethiopia indicated that there was no significant association between maternal knowledge about neonatal dangers sign and those factors like PNC and ANC follow up and parity (41).

In contrast, studies done in Tiro Afeta District and Woldia revealed that those mothers who had antenatal care were 4 times and 3 times more knowledgeable on neonatal danger sign as compared to their counterparts respectively (22,34). A study done in Gonder also showed that those mothers who had PNC visit were 2 times more knowledgeable than who had not (38). Another study done in Wolkite Town showed that mothers who gave birth in health institution in their last pregnancy were nearly two times knowledgeable as compared to those who gave birth at home (42) .

2.2.3. Source of Information about Neonatal Danger Signs

As stated by different studies, information regarding neonatal danger sign had a crucial role for improving mothers' knowledge on neonatal danger signs (37, 39). With regard to this, a study conducted in India indicated that there was significant association between source of information with level of knowledge regarding home care for selected newborn illness among mothers (35).

According to the study done in Chencha District, Southern Ethiopia, those mothers who had radio in the household were 67% times more likely be knowledgeable about neonatal danger signs or 1.67 times more knowledgeable than who had not. But the study did not indicate any relation between mothers' knowledge and source of information from health professionals(Doctors, Midwifery Nurses and public health officers) and health extension works (41). Likewise, a study done in Gondar University revealed that, mothers' access to television increased their knowledge about neonatal danger signs by 3.5 times as compared to those mothers who had no television access (38). In line with this study, the study conducted in Woldia indicated that those mothers who had gotten information about neonatal danger signs increased their knowledge by 3 times as compared to those did not get any information (34). Similarly another study done in Wolkitie Town showed that, source of information was significant predictors for knowledge of neonatal danger sign. Based on this study, those mothers whose source of information other than health professionals were 83% less likely knowledgeable as compare to those who gained from health professionals including health extension workers (42).

2.2.4. Birth preparedness

According to the study conducted in Southern Province in using cross- sectional study design on birth preparedness revealed that birth preparedness is a concept used for reduction of neonatal mortality which is important for identifying 3 delays in emergency case including delay in seeking care, delay in reaching care and delay in receiving care that had direct relation with mothers knowledge on neonatal danger signs (43). A study done in Uganda showed that knowledge of at least one danger sign was significantly associated with being birth prepared(at least one of these; financial, transport, identification of health facility and identification of skilled birth attendant) that is they were 2 times more knowledgeable than those who had no any birth preparedness (8).

2.3. Conceptual frame work

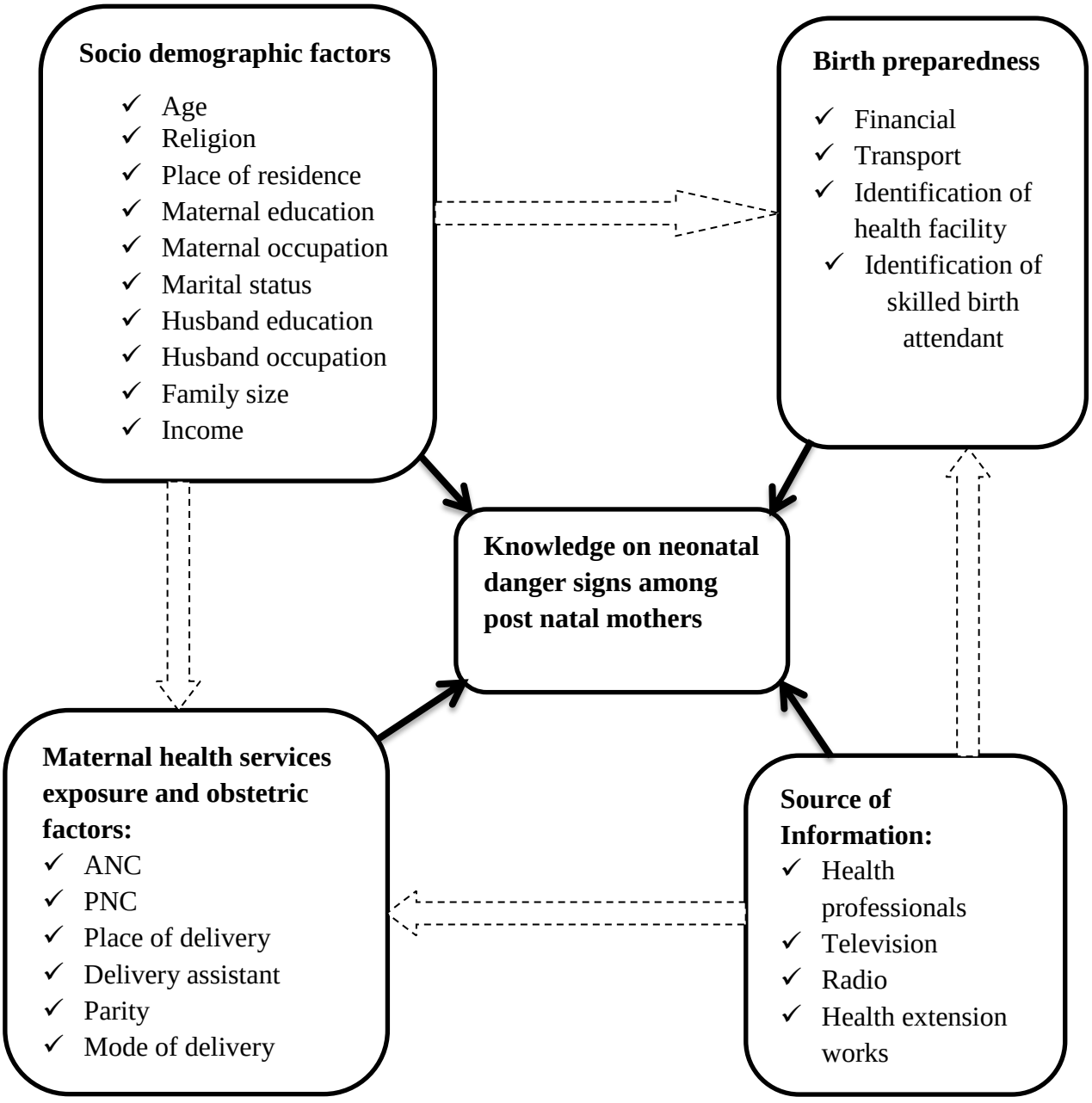

Figure 1: The conceptual frame work for this study adapted by reviewing different literatures from previous studies (31,33,35,37,39,41,44,45) in selected public hospitals Addis Ababa, 2019.

3. OBJECTIVES

3.1. General objective

To determine knowledge on neonatal danger signs and associated factors among postnatal mothers in selected public hospitals of Addis Ababa, Ethiopia, 2019.

3.2. Specific objectives

To assess mothers' knowledge on neonatal danger signs among postnatal mothers in selected public hospitals of Addis Ababa, Ethiopia, 2019.

To identify factors associated with mothers' knowledge on neonatal danger signs among postnatal mothers in selected public hospitals of Addis Ababa, Ethiopia, 2019.

4. METHODS

4.1. Study area and period

The study was conducted in Addis Ababa which is the capital city of Ethiopia located at the center of the country. As 2007 Census conducted by the Central Statistical Agency of Ethiopia (CSAE) indicated, Addis Ababa has a total population of 2,739,551, of whom 1,305,387 and 1,434,164 are men and women respectively. In addition to this, a total of reproductive age women 947,855 and total live birth 44,627 were found(44). According to Addis Ababa Regional Health Bureau (AARHB) 2006 report, under its administration there are six hospitals, one Public health laboratory and two health Science colleges. There are also 52 hospitals in the metropolis, of which 6 are owned by AARHB, 5 by federal government, 3 by Non-Governmental Organization (NGO), 3 by Defense force and police and 35 by the private owners(45). Currently, there are 12 public hospitals. Among these, three public hospitals namely, Tikure Anbessa Specialized Hospital (TASH), Gandhi and St .peter hospitals were included in this study. The study was conducted from March 15th to May 15th, 2019.

4.2. Study design

An institution based cross-sectional study design was employed.

4.3. Population

4.3.1. Source population

All postnatal mothers with their neonates within 28 days (neonatal period) who came to selected public hospitals in Addis Ababa.

4.3.2. Study population

Postnatal mothers with their neonates within 28 days (neonatal period) who came to selected Pu

blic hospitals in Addis Ababa and meets inclusion criteria during the study period.

4.4.1. Inclusion Criteria

All post natal mothers with their neonates with in a period of 0-28 days (in neonatal period) and who were present in the study unit (NICU and post natal unit) at the time of data collection.

4.4.2. Exclusion criteria

Those mothers who had mental health problem and serious illness that makes communication difficult to get the necessary data.

Those mothers who lost their babies were also excluded from this study.

4.5. Sample Size Determination

The sample size for this study was calculated using a single population proportion formula ($n = (Z\ \alpha/2)^2\ (pq/d^2)$) by considering the following assumptions. A 95% confidence level, the margin of error (0.05), adding 10% to compensate for non-response rate and the proportion of mothers' knowledge of neonatal danger signs 31.3% based on the previous literature done in Wolkite on mothers regarding to their knowledge on neonatal danger signs and associated factors (42). Accordingly, the value was substituted in the following single population proportion formula: $n = (Z\ \alpha/2)^2 \times P\ (1\text{-}P)/d^2$

Where n = minimum sample size required

Z = critical value for normal distribution at 95% confidence level which equals to 1.96 (z value at $\alpha = 0.05$)

P = proportion of mothers' knowledge on neonatal danger signs (31.3%) from previous study(42)

d = Margin of error (precision) which is 5%. With 10% non-response rate.

$P = 31.35\% = 0.313$

$(Z\alpha/2) = 1.96$

$d = 5\% = 0.05$

Non- response rate = 10%

n_o = initial sample size

$n_o = (Z\alpha/2)^2 \text{ x } p(1\text{-}p)/d^2$

$n_o = ((1.96)^2 \text{ x } 0.313\text{x}(1\text{-}0.\ 313))/(0.05\text{x}0.\ 05) = 330$

no = 330

Finally, add 10% non-response rate, the total sample size is;

(330 x10)/100 = 33

nt = 330+33 = 363 post natal mothers with their neonates

4.6. Sampling technique and procedure

The study subjects were selected from selected Addis Ababa public hospitals which have post natal unit and NICU ward namely, Tikure Anbessa Specialized Hospital (TASH), Gandhi and St. Peter hospitals. Simple random sampling method was used to select public hospitals and the study participants were selected by using systematic random sampling method until the desired sample size was obtained after proportional allocation was done for each selected public hospital. Proportional allocation was done for each hospital based on the client flow in the previous months by counting from medical registration book. Proportional calculation of samples for each hospitals based on the client flow was;

Formula: samples who were selected from each hospital could be calculated as:

Total sample size (nt) × populations of individual hospital (N)/total populations

Black Lion hospital = $\frac{700 \text{ x } 363}{1976}$ = 129 post natal mothers with their neonates

Gandhi hospital = $\frac{800 \text{ x } 363}{1976}$ = 147 post natal mothers with their neonates

St. Peter hospital = $\frac{476 \text{ x } 363}{1976}$ = 87 post natal mothers with their neonates

Then $\frac{1976}{363}$ $=5.43 \approx 5$ the study participants were selected every 5 mothers because k=5.

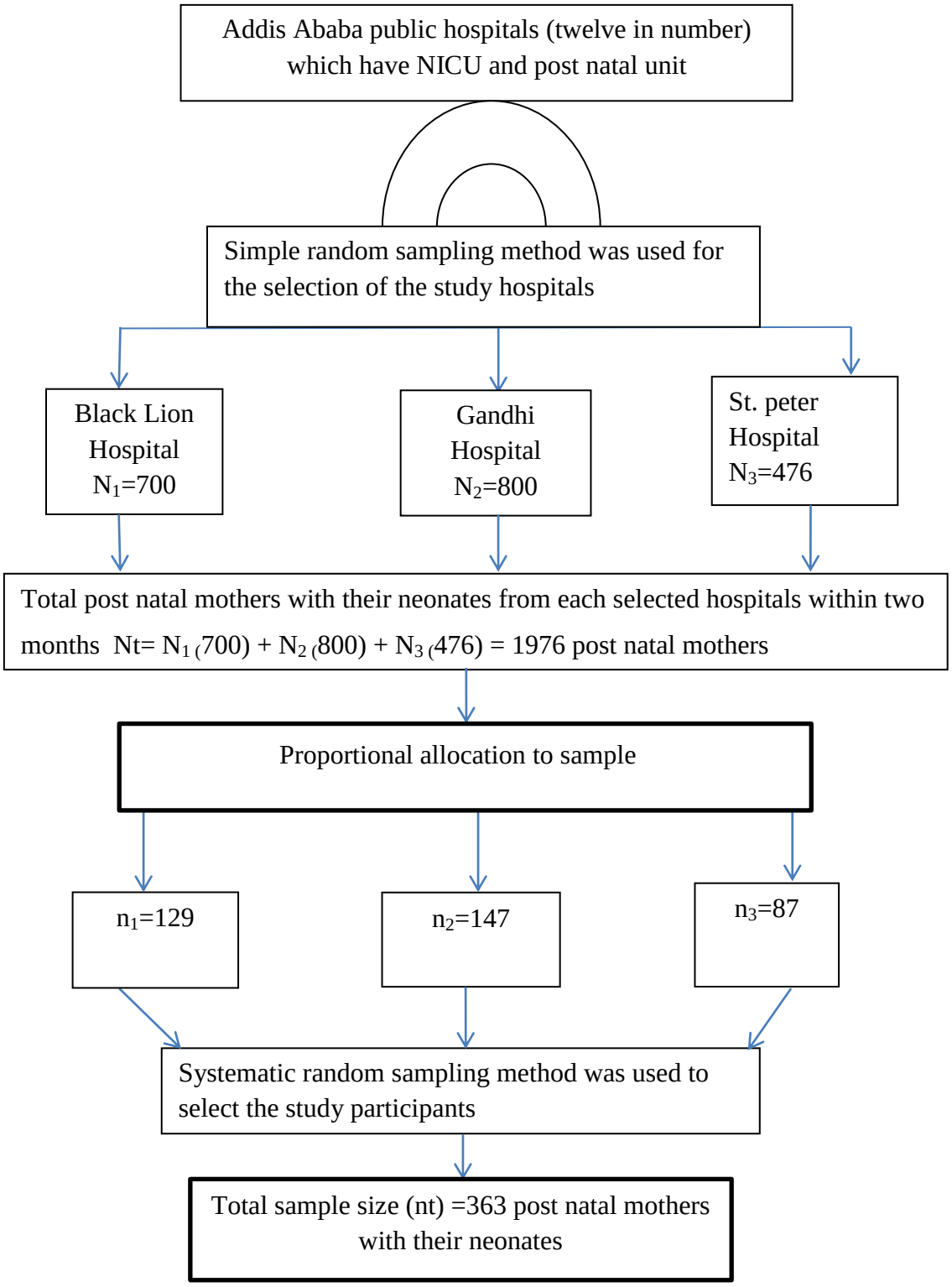

Figure 2: Schematic presentation of sampling procedure in Addis Ababa public hospitals in, 2019.

4.7.1. Dependent Variable

Knowledge of mothers 'on neonatal danger signs

4.7.2. Independent Variables

Socio demographic characteristics: Maternal age, maternal marital status, maternal educational status, maternal occupation, maternal religion, maternal residency, income, family size, husband educational status and husband occupation.

Maternal health service exposure and obstetric factors: Ante natal care, post natal care, place of delivery, delivery assistant, parity and mode of delivery.

Source of information: Media (Television & Radio), health professionals (nurses, doctors and Public health officers) and health extension workers.

Birth preparedness: Financial, transport, identification of skilled birth attendant and identification of health facility.

4.8. Operational Definitions

Knowledge: Understanding of mothers on neonatal danger signs; defined on the basis of their ability to list common neonatal danger signs (34). A maximum score of knowledge was 14 and a minimum score was 0. From previous study half and above half ((≥50%) and below half (<50%) was considered as cut of point. Then the mothers were grouped into two based on their score as having good knowledge and poor knowledge.

Good knowledge: Those mothers who got a score of at least 7 from 14 (≥50%) neonatal danger signs was considered as having good knowledge (34).

Poor knowledge: Those mothers who got a score of less than 7 (<50%) questions from 14 neonatal danger sings was considered as having poor knowledge (34).

4.9. Data Collection Tools and Procedures

A structured interviewer administered questionnaire adopted and modified from previous study was employed (41). The tool had five parts; Part I: socio–demographic characteristics of the mothers (10 items), Part II: Maternal health services exposure and obstetric factors (10 items), Part III: Birth preparedness (4 items), Part IV: Source of information about neonatal danger signs and health care providers Counseling (3 items) and Part V: Knowledge on neonatal danger signs (14 items) related questioners was included.

The questionnaire was first prepared in English language and then translated to Amharic language. Finally it was retranslated back to English language for its consistency (by experts in both English and Amharic language). Seven BSc nurses who were on annual leave two for each for Black Lion and St. peter hospitals and 3 for Gandhi hospital as data collectors and three BSc midwifes as supervisors who know and speak both languages were recruited and got training on the objective of the study by the principal investigator. During the training day explanation was given on the purpose of the study, who were included in the study, how the data collection was done, potential problems that could arise and how to solve them, the contents of the questionnaire, how to approach mothers for interview, how to keep confidentiality and about over all data collection procedure. Data collector explained the purpose of the study to the respondents before data collection.

4.10. Data Quality Control

The questionnaire was translated into the local language that is Amharic for data collection and then retranslated into English language. The questionnaire was pretested on 5% of the sample size out of the study area that was not included in the final study at Zewuditu hospital prior to two weeks before actual data collection takes place to ensure its appropriateness. Two days training was given to the data collectors and supervisors on the data collection tool and the data collection procedure. Data collectors were supervised closely by the supervisors and the principal investigator. Completeness of each questionnaire was checked by the principal investigator and the supervisors on daily basis. Double data entry was done by two data clerks and consistency of the entered data was cross checked by comparing the two separately entered data on Epi-Data.

4.11. Data Processing and Analysis

The completeness and consistency of the data were checked, coded, cleaned and entered using Epi Data statistical software version 4.4.3.1 and then exported into statistical package for social sciences (SPSS) software version 25.0 for analysis. Descriptive statistical analysis such as simple frequencies, percentage, measures of central tendency and measures of variability were used to describe the characteristics of participants (dependent and independent variables). Binary logistic regression was used to see the association between each independent variable and the outcome variable. The direction and strength of statistical association was measured by crud odds ratio with 95% CI. The goodness of fit was tested by Hosmer - Lemeshow statistical test. Variables with p-value <0.2 in the bivariable analysis were entered into multivariable logistic regression mode to control the confounding factors. Multi co-linearity test was carried out to see the correlation between independent variables using collinearity statistics. Adjusted odds ratio (AOR) along with 95% confidence interval was estimated to assess the strength of the association, and a p-value < 0.05 was used to declare the level of statistical significance. Finally, the data was presented by using text, tables, graphs and figures.

4.12. Ethical consideration

Ethical clearance was obtained from department of nursing and midwifery, school of nursing and midwifery, Collage of health sciences, Addis Ababa University institutional review board (IRB). After ethical clearance received supportive letter was obtained from department of nursing and midwifery to Black lion, St. Peter hospitals and to Addis Ababa Health Bureau for Gandhi hospital. Then permission to conduct the study was obtained from Black lion, Gandhi and St. Peter, hospitals' clinical director and unit heads. Information sheet was prepared and read to all eligible participants of the study. All participants were informed about the purpose of the study and their participation was on voluntary basis. Informed consent was obtained from each participant after explaining the purpose and benefits of the study. Confidentiality of the study participants' information also was ensured through no names was used. To keep confidentiality all collected data were coded and locked before entered in to the computer. After entered to the computer the data were locked by password and were not disclose to any person other than the principal investigator. Any information collected from mothers was kept strictly confidential.

4.13. Dissemination of the result

The result of this study is presented to Addis Ababa University College of health science, school of nursing and midwifery department of nursing and midwifery as partial fulfillment of the requirement of master degree in child health nursing. The study result will also be submitted to Ministry of health and Addis Ababa health bureau as well as hospitals where the study was conducted and the finding will also be presented in locally or internationally held seminars, workshops, conferences and meetings including Ethiopian nursing association and it will be published in internationally peer reviewed journals.

5. RESULT

5.1. Socio- demographic characteristic of the mothers

A total of 363 mothers were interviewed during data collection with a response rate of 100%; Of these, nearly three-fifths 225(62.0%) of participants were within 25-34 age group with a mean age of 29.17(SD ±5.678). Nearly two third participants 222(61.2%) were orthodox Christian religion followers and 148 (40.8%) of mothers had college and above educational status. Majority of participants, 313 (86.2%) of them were living in urban area. Among the total interviewees, 356(98.1%) of them were married and most 207(57.0%) of mothers had family member of 4-6. Inaddtion to this nearly half of the participants 186(51.2%) had a total family monthly income 3201-5250 ETB (Table 1).

Table 1: Socio-demographic characteristics of the mother attending health care service at Gandhi, Black lion and St. Peter hospitals from March 15th - May 15th, 2019 (N=363).

Variables	Category	Frequency	Percent
Age	15-24	68	18.7
	25-34	225	62.0
	35-44	64	17.6
	+45	6	1.7
Religion of mother:	Orthodox	222	61.2
	Protestant	72	19.8
	Catholic	11	3.0
	Muslim	58	16.0
Educational status of the mother	Cannot able to read and write	31	8.5
	Grade 1-8	67	18.5
	Grade 9-12	117	32.2
	College and above	148	40.8
Occupation of mother:	House wife	110	30.3
	Merchant	72	19.8
	Government employee	142	39.1
	NGO employee	20	5.5

	Daily laborer	15	4.1
	Other	4	1.1
Mother Place of residence	Urban	313	86.2
	Rural	50	13.8
Marital status of the mother	Married	356	98.1
	Divorced	3	0.8
	Widowed	1	0.3
	Single	3	0.8
If married, husband's educational status	Cannot read and write	19	5.3
	Grade 1-8	75	21.1
	Grade 9-12	114	32.0
	Collage and above	148	41.6
If married, husband's occupation	Merchant	76	21.3
	Government employee	127	35.7
	Daily laborer	64	18.0
	NGO employee	50	14.0
	Other*	39	11.0
Family size	1-3	148	40.8
	4-6	207	57.0
	≥7	8	2.2
Family monthly income	601-1650	11	3.0
	1651-3200	63	17.4
	3201-5250	186	51.2
	≥5251	103	28.4

***:** Farmer, Care driver……

5.2 .Maternal health service and obstetric factors

Among the total participants, 308 (84.4%) of mothers had ANC follow up at health institution; Out of these, 196(63.6%) of mothers had complete ANC follow up. Regarding place of delivery, most of the mothers about 274 (75.5%) delivered at hospital. In addition to this majority of the interviewees 340(93.7%) were assisted by health professionals during their last delivery and most of the interviewees 197(54.3%) delivered by caesarean section. Majority of the mothers 317(87.3%) had at least one immediate post natal care follow up. Of these, 165 (52.1%) of participants had three and more than three PNC visit and 188 (51.8%) of participants knew post natal period is a danger time for neonate (Table 2).

Table 2: Maternal health service and obstetric factors among post natal mothers attending health care service at Gandhi, Black lion and St .Peter hospitals from March 15th - May 15th, 2019 (N=363).

Variable	Category	Frequency	Percent
Did you have ANC follow up?	No	55	15.2
	Yes	308	84.8
Frequency of ANC visit	<4	112	36.4
	≥4	196	63.6
Where did you give birth	Health Center	66	18.2
	Hospital	274	75.5
	Health post	0	0.0
	Home	23	6.3
Did you have delivery assistant during the last delivery?	No	0	0.0
	Yes	363	100
Who gave delivery assistance for you?	Health professionals	340	93.7
	Family	6	1.7
	Neighbor	7	1.9
	Relatives	7	1.9

	TBA	3	0.8
	Health Extension Worker (HEW)	0	0.0
In which mode of delivery did you give birth?	Spontaneous vaginal delivery	113	31.1
	Instrumental assisted delivery	53	14.6
	Caesarean section	197	54.3
Number of Parity	1	45	12.4
	2-3	153	42.1
	>3	165	45.5
Do have immediate PNC visit?	No	46	12.7
	Yes	317	87.3
Frequency of PNC visit	<3	152	47.9
	≥3	165	52.1
Do you know Post Natal Period (PNP) is a danger time for neonates?	No	175	48.2
	Yes	188	51.8

Birth preparedness

Out of the total study participants, most of the mothers 271(74.7%) had birth preparedness. Of these one hundred seventy five (64.6%) of mothers prepared financially for their last delivery. Among mothers who had birth preparedness, nearly two-third 199(73.4%) of the mothers identified skilled birth attendant and 237 (87.5%) identified health facility for their last delivery (Table 3).

Table 3: Birth preparedness among post natal mothers attending health care service at Gandhi, Black lion and St. Peter hospitals from March 15th - May 15th, 2019 (N=363).

Variable	Category	Frequency	Percent
Birth preparation for the last delivery	No	92	25.3
	Yes	271	74.7
Type of preparation for delivery	Financial preparation	175	64.6
	Transport for emergency case	104	38.4
	Identification of skilled birth attendant	199	73.4
	Identification of health facility	237	87.5
	Other*	27	9.9
Arranged a place for delivery during your pregnancy	No	114	31.4
	Yes	249	68.6
Arranged place for delivery	Health center	105	42.2
	Hospital	127	51.0
	Home	17	6.8

***=** Buying baby clothes, food preparation…….

5.4. Source of information about neonatal danger signs and counseling service

The finding of this study showed that, about 319(87.9%) of mothers heard about neonatal danger signs. The major sources of information about neonatal danger signs were health care providers 253(69.7%). In addition to this, two hundred nine (57.6%), 158(43.3%), 151(41.6%) and 48(13.2%) of participants got information from television, radio, health extension workers and others respectively. Of all participants, one hundred ninety one (52.6%) of mothers had gotten education during PNC visit (As seen below the Figure 3).

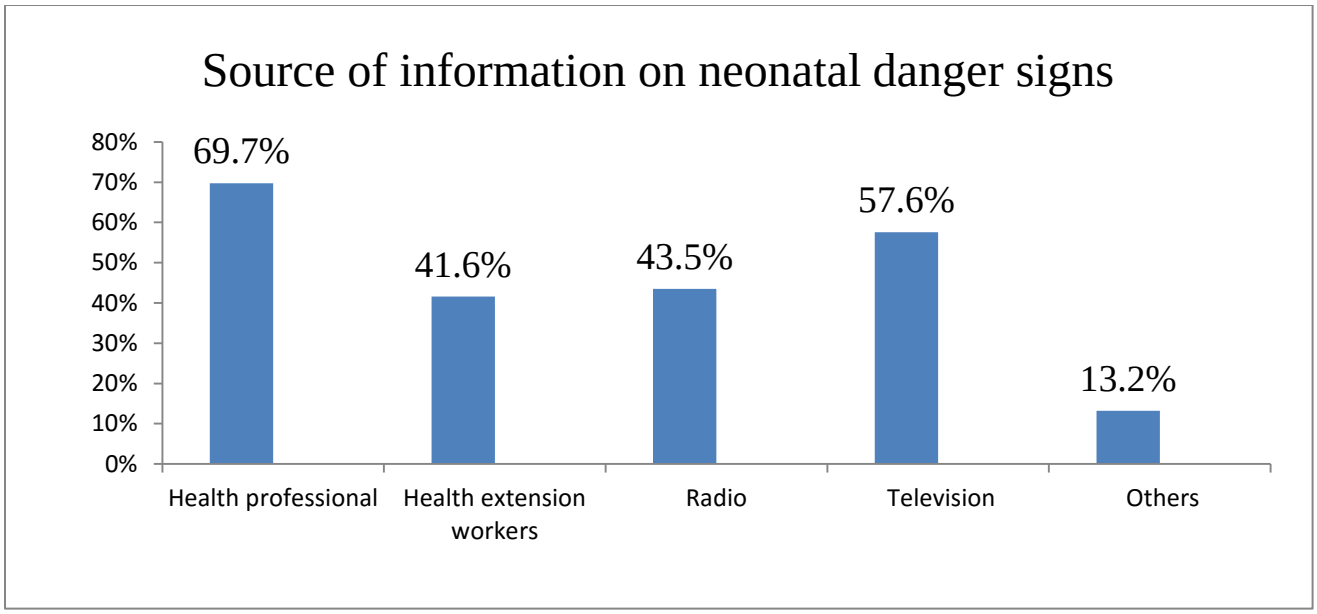

Figure 3: source of information on neonatal danger signs among post natal mother

5.5. Maternal knowledge on neonatal danger signs

Among the total participants, three hundred seventeen (87.3%) of the mothers able to mention at least one neonatal danger signs. The finding of this study showed that, only 120(33.1%) of mothers had good knowledge and most of the mothers 243(66.9%) had poor level of knowledge on neonatal danger signs. The most commonly known neonatal danger signs was fever known by two hundred sixty-three (72.5%) of mothers whereas the least known neonatal danger sign was very small baby known by 36(9.9%) of mothers. In addition to this, 239(65.8%), 223(61.4%) and 204(56.2%) of mothers identified poor sucking, persistent vomiting and yellow discoloration respectively (Table 4).

Table 4: Assessment of knowledge on neonatal danger signs among post natal mothers at Gandhi, Black lion and St. Peter hospitals from March 15th - May 15th, 2019 (N=363).

Knowledge assessment	Category	Frequency	Percent
Do you know about neonatal danger signs?	No	46	12.7
	Yes	317	87.3
Poor sucking or not able to breast feed	No	124	34.2
	Yes	239	65.8
Fever:	No	100	27.5
	Yes	263	72.5
Fast breathing	No	194	53.4
	Yes	169	46.6
Difficulty of breathing	No	255	70.2
	Yes	108	29.8
Lethargic/unconscious:	No	248	68.3
	Yes	115	31.7
Hypothermia:	No	299	82.4
	Yes	64	17.6
Convulsion	No	248	68.3
	Yes	115	31.7
Umbilical infection/redness of the cord	No	278	76.6
	Yes	85	23.4
Yellowish discoloration of yes, palms/soles	No	159	43.8
	Yes	204	56.2
Persistent vomiting	No	140	38.6
	Yes	223	61.4
Very small neonate:	No	327	90.1
	Yes	36	9.9
Pus discharge or redness of eye	No	295	81.3
	Yes	68	18.7
No stool after 24 hours	No	301	82.9
	Yes	62	17.1
Skin pustules	No	231	63.6
	Yes	132	36.4

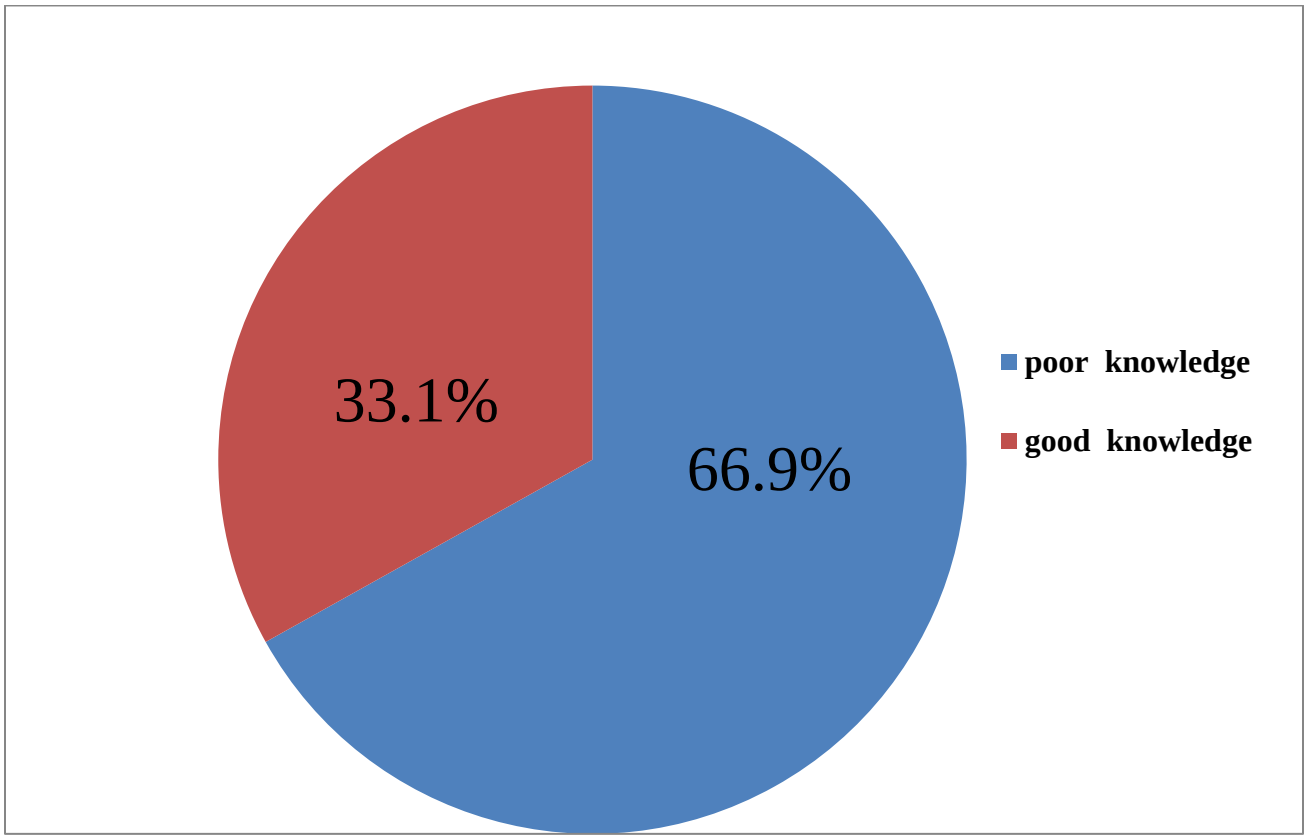

Figure 4: Maternal knowledge status on neonatal danger signs among post natal mothers.

5.6. Factors associated with maternal knowledge about neonatal danger signs.

After controlling family size, family monthly income, mothers' occupation, husband's occupation, religion and financial preparation: Maternal age, mothers' educational status, mode of delivery, parity, frequency of PNC visit, identification of skilled birth attendant, information from health professionals, health extension workers and television as well as education during PNC follow up were the factors that significantly associated with maternal knowledge. Mothers whose age 25-34 were 2.99 times (AOR=2.99, 95%Cl: 1.18-7.54) and 35-44 were 4.97 times (AOR=4.97, 95% Cl: 1.65-18.02) more knowledgeable as compared to mothers who were younger than these age groups. Similarly mothers who had more than three parity were 5.34 times (AOR=5.34, 95%Cl: 1.64-2.64) respectively more likely to be knowledgeable as compared to their counterpart.

Participants who had three and more than three PNC visit during the last delivery (AOR=3.72, 95% Cl: 1.92-7.21) were 3.72 times more likely to be knowledgeable on neonatal danger signs. Furthermore, mothers who had birth preparedness on identification of skilled birth attendant during pregnancy had 2.25 times (AOR= 2.25, 95% Cl: 1.13-4.40) more knowledge on neonatal danger signs as compared to their counterpart. In addition to this, mothers who had source of information from health professionals (AOR=4.54, 95%Cl: 2.16-9.70) were 4.54 times more likely to be knowledgeable as compared to their counterpart. Likewise, participants who had education about neonatal danger signs during PNC visit were 2.77 times (AOR= 2.77(1.49-5.15) more knowledgeable to identify neonatal danger sign as compared to those mothers who had no education during PNC visit (Table 5).

Table 5: Bivariable and multivariable analysis showing factors associated with maternal knowledge on neonatal danger signs among post natal mothers at Gandhi, Black lion and St. Peter hospitals from March 15th - May 15th, 2019 (N=363).

Variables	Knowledge status		COR (Cl 95%)	AOR (Cl 95%)
	Poor N (%)	Good N (%)		
Age				
15-24	59(86.8)	9(13.2)	1	1
25-34	147(65.3)	78(34.7)	3.48(1.64-7.39) *	**2.99(1.18-7.54)****
35-44	34(53.1)	30(46.9)	5.78(2.46-13.62)*	**4.97(1.65-18.02)****
+45	3(50.0)	3(50.0)	6.56(1.14-37.62)*	5.31(0.94-10.48)
Educational status of the mother				
Cannot read and write	26(83.9)	5(16.1)	1	1
Grade 1-8	58(86.6)	9(13.4)	0.81(0.25-2.65)	0.38 (0.19-1.46)
Grade 9-12	76(65.0)	41(35.0)	2.81(1.00- 7.86) *	1.31(0.4-4.31)
College and above	83(65.1)	65(43.9)	4.07(1.48-11.19)*	**2.11(1.51-2.95)****
Husband education				
Cannot read and write	16(84.2)	3(15.8)	1	1
Grade 1-8	59(78.7)	16(21.3)	1.36(0.35-5.27)	1.27(0.26-6.27)
Grade 9-12	76(66.7)	38(33.3)	2.50(0.68-9.28)	2.22(0.49-10.12)
College and above	86(58.1)	62(41.9)	3.61(1.07-12.90)*	1.91(0.427-8.563)
ANC follow up				
No	44(80.0)	11(20.0)	1	1
Yes	199(64.6)	109(35.4)	2.19(1.09-4.42)*	0.73(0.18-3.31)
Place of delivery				
Health center	50(75.8)	16(24.2)	1	1
Hospital	171(62.4)	103(37.6)	1.88(1.02-3.48) *	1.31(0.56-3.03)
Home	22(95.8)	1(4.3)	0.14(0.02-1.14)	0.18(0.02-2.01)
Mode of delivery				
Spontaneous delivery	85(75.2)	28(24.8)	1	1
Instrumental delivery	32(60.4)	21(39.6)	1.99(0.99-3.99)	1.63(0.61-4.34)
Caesarean section	126(64.0)	71(36.0)	2.71(1.02-2.87) *	**3.72(1.71-8.12)****
Parity				
1	39(86.7)	6(13.3)	1	1
2-3	129(84.4)	24(15.7)	1.21(0.46-3.17)	1.11(0.40-4.08)
>3	75(45.5)	90(54.5)	7.80(3.13-19.43)*	**5.34(1.64-2.64)****

Frequency of PNC				
<3	114(75.0)	38(25.0)	1	1
≥3	99(60.0)	66(40.0)	2.00(1.24-3.24) *	**3.72(1.92-7.21)****
Identification of skilled birth attendant				
No				
Yes	130(79.3)	34(20.7)	1	1
	113(56.8)	86(43.2)	2.91(1.82-4.66)*	**2.25(1.13-4.40)****
Information from health professional				
No	96(87.3)	14(12.7)	1	1
Yes	147(58.1)	106(41.9)	4.95(2.68-9.14)*	**4.54(2.16-9.70)****
Health extension workers				
No				
Yes	169(79.7)	43(20.3)	1	1
	74(49.0)	77(51.0)	4.09(2.56-6.49) *	**2.67(1.54-4.62) ****
Television				
No	129(83.8)	25(16.2)	1	1
Yes	114(54.5)	95(45.5)	3.00(2.59-7.14)*	**2.15(1.11-4.15)****
Education during PNC follow up				
No	151(87.8)	21(12.2)	1	1
Yes	92(48.2)	99(51.8)	7.74(4.52-13.25)*	**2.77(1.49-5.15) ****

*=Association at p-value<0.2 in bivariable logistic regression and**=**statistically significant at p-value<0.05** in multivariable logistic regression.

6. DISCUSSION

Maternal knowledge on neonatal danger signs is the major contributing factor for the reduction of neonatal morbidity and mortality which requires a compressive health care (38). Because reducing neonatal morbidity and mortality requires immediate caregiver's knowledge on common neonatal danger signs and visiting the nearby health facility. According to this study, the prevalence of maternal good knowledge on neonatal danger signs was 33.1%. This is lower than the study conducted in Nepal which was 35.63% (26), Port Harcourt Nigeria which was 45.2% (28) and the study done in Bangladesh 50% of mothers were knowledgeable (25) but higher than the study done in Nigeria, Sudan, Kenya and Gahana which were 30.3%, 20.4%, 15.5% and 28.1% respectively (27,29,30,31).

This study good knowledge level is also higher than the study done in Woldia general hospital which was 11.67% (34). The discrepancy might be due to time difference in assessing maternal knowledge (previous studies assessed maternal knowledge after neonatal period which were exposed to recall bias), difference in study setting, time gap, sample size variation, difference in knowledge assessment questions and evaluation method. In addition to this, the possible explanation might be due to participant place of residence(in this study majority of the participants were living in urban area), difference in health care delivery system or difference in intervention program, difference in access to media and educational difference or information gap about neonatal danger signs. This study also reported that, majority of the mothers (72.5%) knew fever as common neonatal danger sign which is supported by Nigerian study reported that about 95.2% of the mother had knowledge on fever (27) and Kenyan study reported that 74.9% of mothers had knowledge on fever(30). The possible justification for this might be this symptom is easily felt by mothers when they touch their neonates and it is an alarming sign for systemic infection and easily detected by mothers.

This study also showed that mothers' age was statistical significant factor to maternal knowledge on neonatal danger signs. Mothers who were 25-34 and 35-44 years old had nearly three and four times respectively knowledgeable as compared to mothers who were less than 15-24 years old. This is supported by the study done in Bangladesh (25) and Woldia (34). This might be due to in this age group mothers have experience on symptoms that occur on neonates and children.

Inaddtion to this because they are active reproductive and child-bearing age women, they can give attention to neonates. But this study finding is incongruent with the study done in Nigeria, Sudan and Kenya (27,29,30). The possible justification for this difference might be due to the case that HEWs and other health care providers deliver health information or counseling about neonatal danger signs regardless of age differently in different areas.

Likewise, educational status of the mother was statistically significant to maternal knowledge. Those mothers who had college and above educational status were two times more knowledgeable as compared to who cannot read and write. This is consistent with the study done in Bangladesh, Woldia and Gondar (25,34,38). The possible justification for this could be educated mothers were more likely to made decision to look for quality health service, had better access to health service information, took their sick neonates to health institution and get additional information about neonatal danger signs and improved knowledge of neonatal danger signs. Moreover, they acquire knowledge on disease and neonates as well as child health through their academic life. But this is incongruent with the study done in Rural Uganda (8). The difference might be due to information gap and difference in accessibility of media.

Similarly, mode of delivery was also significantly associated with good maternal knowledge. Those mothers who delivered by caesarean section were nearly four times more likely to be knowledgeable as compared to mothers who had spontaneous vaginal delivery. This is supported by the study done in Bangladesh (25). The possible explanation for this might be mothers who delivered by cesarean section had more health professional contact, appointment and long hospital stay; this in turn creates an opportunity to get education about neonatal danger signs from health care providers.

Moreover, PNC visit for the last child and parity were significantly associated with maternal level of knowledge. Mothers who had three and above PNC visit were nearly four times more likely to be knowledgeable as compare to those who had less than three PNC follow up and participants who had more than three parity had five times more knowledge about neonatal danger signs. This is supported by the study conducted in Gondar (38). The justifiable reason for this might be education during PNC visit and also may be those mothers who have high parity were exposed to neonatal danger signs knowledge at some points during their previous ANC and

PNC visit and have their own experiences of neonatal danger signs from previous delivery. However, the finding of this study is in part different from the study done in Chencha reported that PNC visit and parity were not significantly associated with maternal knowledge (41). This discrepancy might be due to the fact that educational difference during PNC visit, difference in study setting and difference in maternal exposure to neonatal danger signs from previous delivery.

According to this study report, birth preparedness was statistically significant to mothers' knowledge on neonatal danger signs. Participants who identified skilled birth attendant for the last delivery had two times more knowledge about neonatal danger signs as compared to who had no birth preparedness which is consistent with the study done in Uganda (8). The possible reason for this might be due to getting information about neonatal danger signs from birth attendants during their preparation. Because identifying birth attendants increase contact of mothers with knowledgeable personnel and create a good opportunity to get the necessary information about neonates and young infant illness.

Source of information about neonatal danger signs was statistically significant to mothers' knowledge .This finding is supported by the study conducted in India (35), Chencha (41) and Gondar (38). Mothers who got information from health professionals were 4.54 times more likely to be knowledgeable about neonatal danger signs as compared to those who did not get information. The possible explanation for this might be mothers who give birth in health institution and who had PNC follow up receives post natal counseling by health professionals on appropriate time; this increases their knowledge and they pied attention what they told. This study also showed that, mothers who had television access had two times more knowledge than their counterpart. This is supported by the study done in Gondar (38). The possible justification for this could be television contains a segment of airtime dedicated to teach the mother about health issue of neonates and children. Therefore, using television could also increase the memorability of the message compared to other Medias and the similarity of these two studies might be due to similar accessibility of television to mothers.

Moreover, education during PNC visit was statistically significant to maternal knowledge on neonatal danger signs. Mothers who got education during PNC visit were nearly three times

more likely to be knowledgeable as compared to their counterpart. The possible explanation for this could be getting education creates awareness and make mothers more conscious for neonates' infection indicator signs and alert to every symptom. This is also initiate mothers to take their neonate to health institution and help to get additional information.

7. STRENGTH AND LIMITATIONS OF THE STUDY

Strength

This study has the following strength. Including NICU in the study area makes important to assess maternal knowledge on neonatal danger signs since this area is the most critical area those neonates who had danger signs were found. In addition to this, collecting data within 28 days of delivery minimize recall bias and helps to identify the true maternal knowledge and all data collectors were trained health professionals that contribute the quality of the data**.** Moreover, this study includes more than one study area (multicenter study) which increase external validity of the study and used relatively large sample size.

Limitation

Despite the above strength, the potential limitation of this study is; its cross-sectional nature of the study affects the establishment of the cause and effect relationship between maternal knowledge on neonatal danger signs and the factors that were identified.

8. CONCLUSION

The finding of this study revealed that, the prevalence of maternal knowledge regarding neonatal danger signs was poor in studied areas which is only 33.1% of mothers had good knowledge.. This study identified that maternal age, maternal education, mode of delivery, parity, birth preparedness, and three and above three PNC visit, source of information about neonatal danger signs from health professionals and television and education during PNC visit were statistically significant factors to maternal knowledge on neonatal danger signs.

9. RECOMMENDATION

Based on the study findings the following recommendations are forwarded:

1. **For Addis Ababa governmental and non-Governmental health organizations**

These organizations should strengthen and sustain the existing newborn care strategies; promote education of mothers for further improvement of knowledge of the mother towards neonatal danger signs through planning the necessary training program for health care providers who work in NICU and postnatal unit.

2. **For health professionals working at NICU, post natal unit and who give antenatal care in Black lion, Ghandi and St. Peter hospitals.**

The health care providers should work on awareness creation through educational programs at health facilities focusing on increase mothers' knowledge level on different neonatal danger signs by strengthening the provision of education during institutional delivery, ANC and PNC visit. They should encourage mothers to actively consume mother and child health (MCH) services and do on behavioral change communication at facility level.

3. **For health extension workers working in Addis Ababa city**

It is also recommended if the health extension workers (HEW) provide health education regarding neonatal danger signs at community level to increase maternal knowledge on neonatal danger signs. It is also recommended that they should encourage mothers to use media as source of information and do on behavioral change communication at community level.

4. **For researchers**

Further studies that mainly address all areas of associated factors that may significantly affect the knowledge level of mothers towards neonatal danger signs are needed. Therefore, further investigations to identify other important factors by using different tools, study design and study area is needed.

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11. ANNEXE

Annex I: Information sheet

Hello. My name is _____ and I am data collector of the study conducted by Wudie Eneyew master's student at Addis Ababa university college of health Science ,School of nursing and midwifery, department of nursing and midwifery conducting this study for partial fulfillment of master's degree in child health nursing. I would very much appreciate your participation in this study. The information you provide will help to know knowledge towards neonatal danger sign and what factors affect the knowledge on those signs. The interview will take between 15-25 minutes to complete.

Name of the organization: Addis Ababa University, College of Health Sciences, School of nursing and midwifery, Department Of Nursing and Midwifery.

Name of the Sponsor: Addis Ababa University

Title of the study: Knowledge on neonatal danger sign and associated factors among postnatal mothers in public hospitals of Addis Ababa Ethiopia, 2019.

Purpose: The purpose of this study was to assess knowledge on neonatal danger sign and associated factors among post natal mothers. The collected information were is essential, not only for the successful accomplishment of the study but also for producing relevant information which will help in improving the provision of the service to neonate with danger sign and improve knowledge towards it. The research results will be provided to concerned body for intervention regarding this burning issue.

Procedure:: In order to achieve the above objective, information which was necessary for the study was taken from the participant.

Risk/ Discomfort: Being participant in this study was harmed physically, socially and economically. But participants may feel that it has some discomfort especially on spending time. Since data was collected only from willingness mothers, there was no risk in participating in this study and the information retrieved was only used for the study purpose. Therefore, it was not inflict any harm on the participants.

Benefits: Participating in this study was not have short term benefit or any payment but the Participation was likely to help in assessment of knowledge on neonatal danger sign and associated factors. So that, it help to improve quality of life and healthcare service delivery in

neonates sever illness and this study also help mothers to identify neonates' severe illness signs and immediate health care seeking behavior by increasing mothers' knowledge towards it. It is also important for policy makers regarding on neonatal danger signs.

Confidentiality: The information collected from participants to this study was kept confidential and all records and other information obtained was kept strictly confidential. All data collection tools was identified by number or otherwise coded to protect any information that could be used to identify neonates but no mane attached to it.

Participant rights: It was up to mothers to decide whether take part or not in this study. Refuse to participate had no penalty or loss of benefits to gain any health service. This was not affect participants' relationship with the principal investigator. So if they were voluntary to give information for the study; they could show their willingness by saying "yes".

Annex II: Consent form for the mothers

I understood all conditions stated above. I am informed that there is no any direct benefit or payment for the participants. I have also understood that participating in this study is entirely voluntarily and there is no any human threatens condition. I understood that the answers to the questions will not be given to anyone else. If respondent does not agree to be interviewed, let them thanks and go to the next respondent. If respondent say "YES" continues.

1. Name of interviewer_____ Signature_____ date_____/_____/____

(Signature of interviewer certifying that respondent has given informed consent verbally)

If you have questions, complaints or concerns about this study, you can contact the principal investigator Wudie Eneyew Phone; 0925998829/0986987988, Email address: wudieeneyew01@gmail.com. Department of nursing and midwifery.

Annex III: English version questionnaire

Data collection tools

This questionnaire was prepared for the collection of socio-demographic characteristics, assessment of maternal health services and obstetric factors, birth preparedness, source of information about neonatal danger signs and health workers counseling related questionnaire and assessment of knowledge on neonatal danger sign at Gandhi, Black Lion and St. Peter hospitals, Addis Ababa, Ethiopia. This information was collected from post natal mothers without mentioning the name of the mothers and neonates. This information was collected by health care providers (BSc Nurses) who were on annual leave.

Date----------month----------Year----------

Name of the Hospital ----------

Name of data collector---------- signature----------

Name of supervisor----------signature----------

Code number ----------

Title; Knowledge on neonatal danger signs and associated factors among post natal mothers:

S.No	Question	Response	Skip
Part I: Socio-demographic Characteristics			
101.	Age of the mother	_____in complete year	
102.	Religion	1. Orthodox 2. Protestant 3. Catholic 4. Muslim	
103.	Educational status of the mother	1. Cannot able to read and write 2. Grade 1-8 3. Grade 9-12 4. College and above	
104.	Occupation of mother	1. House wife 2. Merchant 3. Government employee 4. NGO employee 5. Daily laborer 6. Other, Specify_____	

105.	Place of residence	1. Urban 2. Rural	
106.	Marital status	1. Married 2. Divorced 3. Widowed 4. Single	
107.	If married, husband's educational status	1. Can't read and write 2. Grade 1–8 3. Grade 9–12 4. Collage& above	
108.	If married, occupation of husband	1. Merchant 2. Government employee 3. NGO employee 4. Daily laborer 5. Other, Specify	
109.	Family size	_____	
110.	How much your family's total monthly income (birr)?	_____	

Part II: Maternal health Services and obstetric questioners

201.	Did you have ante natal care visit?	1. Yes 2. No	If "No"Skip to Q202
202.	How many times did you receive ante natal care service?	_____	
203.	Where did you give birth?	1. Health Center 2. Hospital 3. Health Post 4. Home	
204.	Did you get delivery assistance during delivery?	1. Yes 2. No	If "No" skip to Q206
205.	Who gave delivery assistance for you?	1. Health professionals (Nurses, Doctors, Midwifery, Public health officer) 2. Family 3. Neighbor 4. Relatives(mother in law) 5. Traditional Birth Attendant (TBA) 6. Health Extension Worker (HEW) 7. Other _____	
206.	In which mode of delivery did you give birth?	1. Spontaneous vaginal delivery 2. Instrumental assisted delivery	

		3. Caesarean section	
207.	How many times did you give birth?	_____	
208.	Did you have immediate Post Natal Care visit?	1. Yes 2. No	If no skip Q210
209.	How many times did you get PNC service?	_____	
210.	Do you know Post Natal Period (PNP) is a danger time for neonates?	1. Yes 2. No	
Part III: Assessment of Birth preparedness			
301.	During your last pregnancy did you have any preparations for your delivery?	1.Yes 2.No	If"No"skip to Q302
302.	What preparations did you make for the delivery? (Multiple response is possible)	1. Financial preparation 2. Transport for emergency case 3. Identification of skilled birth attendant 4. Identification of health facility 5. Other, Specify_____	
303.	During your last pregnancy did you arrange a place for your last deliver?	1.Yes 2.No	If "No"skip to Q304
304.	Where did you arrange to deliver your child?	1.Health Center 2.Hospital 3.Health Post 4.Home	
Part IV: Source of Information about neonatal danger signs and Health Workers Counseling related question			
401.	Have you ever heard about neonatal danger signs?	1. Yes 2. No	If "No" skip to Q402
402.	From which source did you get the information? *(Multiple response is possible)*	1. Health professionals(nurse, Doctor or midwifery and public health office) 2. Health Extension Workers (HEWs) 3. Radio 4. Television 5. Other _____	
403.	Did you get the education about neonatal danger signs during PNC visit?	1. Yes 2. No	

Part .V: Assessment of knowledge on neonatal danger sign			
501.	Do you know about neonatal danger signs?	1. Yes 2. No	If No skip Q502
502.	List any neonatal danger signs that you know? *(Multiple response is possible)*	1. Poor sucking or not able to breast feed 2. Fever 3. Fast breathing 4. Difficulty of breathing 5. Lethargic/unconscious 6. Hypothermia 7. Convulsion 8. Umbilical infection/such as redness of the cord 9. Yellowish discoloration of yes , palms/soles 10. Persistent vomiting 11. Very small neonate 12. Pus discharge /redness of the eye 13. No stool after 24 hours 14. Skin pustules	

Thank you for your cooperation and participation

አባሪ አራት፡ የመረጃ ቅጥያዎች

ሰላም እኔ……..የተባልኩ በአዲስ አበባ ዩኒቨርስቲ ፣በጤናሳይንስ ኮሌጅ፤በነርሲንግና በሚድዋይፈሪ ት/ት ክፍል የማስተርስ ተማር በሆነችው በውዴ እንየው አማካኝነት በሚከናወነው ጥናትና ምርምር ላይ መረጃ ሰብሳቢ ሁኜ እይሰራሁ እገኝዓለሁ።የእርሶዎን ተሳትፎ በጣም እናበረታታለን። እርሶዎ የሚሰጡት መረጃ የጨቅላ ሕፃናት መታመምን የሚያመለክቱ አደገኛ የህመም ምልክቶችን ለማወቅ እና እነዚህ አደገኛ የህመም ምልክቶች በእናቶች እታዲወቁ የሚያደርጉ ጠቃሚ ነገሮችን ለማወቅ ይረዳል። ቃለ መጠይቁ ከ 15-20 ደቂቃ ሊፈጅ ይችላል። ለጥናቱ መረጃ ለመስጠት ፈቃደኛ ከሆኑ ፈቃደኛነትዎን አዎ በማለት ሊገልጹልን ይችላሉ።

የተቋሙ ስም፡ አዲስ አበባ ዩኒቨርሲቲ፣ጤናሳይንስ ኮሌጅ፣የነርሲግ እና ሚድዋይፈሪ ት/ት ክፍል

የድጋፍ ሰጪ ተቋም ስም፤ አዲስ አበባ ዩኒቨርሲቲ

የጥናቱ ርእስ፤ በጨቅላ ጻናት ላይ የሚከሰቱ አደገኛ ወይም ከባድ የህመም ምልክቶችን በተመለከተ የናቶች እውቀት እና በእውቀታቸው ላይ በቀጥታም ሆን በተዘዋዋሪ ተጽኖ የሚያመጡ ተየያዥ ነገሮችን የሚዳሰሰ ጥናት ነው ። ጥናቱ በአዲስ አበባ የመንግት ሆስታሎች ውሰጥ በ2019 ዓ.ም ይካሄዳል።

ዓላማ፤ ይህ ጥናት የእናቶች እውቀት በጨቅላ ህጻናት ላይ የሚከሰቱ አደገኛ የህመም ምልክቶን በተመለከተ እና ከእናቶች እውቀት ጋር የሚዛመዱ እና ለእውከታቸው ማነስም ሆነ መጨመር ምክንያት የሆኑ ጠቃሚ ነገሮችን ለማዎቅ ይረዳል።በተጨማሪም እርሶዎ የሚሰጡ መረጃ ለጥናቱ መሳካት ብቻ ሳይሆን አገልግሎቱን ለማሻሻል ፣ ጨቅላ ህጻናትን በተመለከተ ትክክለኛውን መረጃ ለመስጠጥት እና እርስዎም ስለ ጨቅላ ህጻናት አደገኛ የህመም ምልክቶች ጥሩ እውቀት እንዲኖርዎትም ከፍተኛ አስተዋጾ ይኖረዋል። በመጨረሻም የጥናቱ ውጤት ለሚመለከታቸው አካላት ይሰጣል::

አካሔድ፤ ከላይ የተጠቀሰውን ዓላማ ለማሳካት አስፈላጊው መረጃ ከጨቅላ ህጣናት እናቶች ይወሰዳል። የሚሰጡት መረጃ በጠቅላላ በሚስጥር ኮድ ተደርጎ ለማንም ሳይሰጥ ታሽጎ ይቀመጣል።

ጉዳት/ስጋት፤ በዚህ ጥናት ተሳታፊ መሆን አካላዊ፣ ማህበረሰባዊ እና ኢኮኖሚያዊ ጉዳት አይኖረውም። በጥናቱ ላይ በመሳተፍዎ ግዚዎትን እንደምንሻሞዎት ሊሰማዎት ይችላል፤ ሆኖም ግን ለጥናቱ ውጤት ብለው እንደሚሳተፉ እናምናለን። መረጃው የሚሰበሰበው ፈቃደኛ ከሆኑት ተሳታፊዎች ብቻ ስለሆነ

በጥናቱ በመሳተፍዎ ምንም አይነት ጉዳት አይደርስብዎትም። የሚሰጡት መረጃ ለጥናቱ አገልግሎት ብቻ ይውላል።

ጥቅም፤ በዚህ ጥናት ተሳታፊ መሆን የአጭር ጊዜ ጥቅም ወይም ክፍያ አይኖረውም። ነገር ግን የሚሰጡት መረጃ በጨቅላ ህጻናት ላይ የሚከሰቱ አደገኛ የህመም ምልክቶችን በተመለከተ የእናቶችን እውቀት ለማዎቅ እና በእውቀታቸው ላይ በቀጥታም ሆነ በተዘዋዋሪ ተጽኖ የሚያመጡ ተያያዥ ነገሮችን ለማዎቅ ይረዳል። ከዚህ በተጨማሪ የሚሰጡት መረጃ ለጨቅላ ህጻናት የሚሰጠውን የህክምና አገልግሎት ለማሻሻል ይረዳል።

ሚስጢራዊነት ፤ በዚሁ ጥናት ላይ የሚገኘው መረጃ በሙሉ ሚስጢራዊነቱ ተጠብቆ ይቀመጣል። የሚሰጡን መረጃ በፍይል ከእርዎ ስም ውጪ በኮድ ተደርጎ ይቀመጣል። በተጨማሪም ከጠናቱ ውጪ ወይም ከአጥኚው ውጭ ለማንም ሰው አይሰጥም።

የተሳታፊዎች መብት፤ በዚህ ጥናት መሳተፍ አለመሳተፍ በተሳታፊዎች ምርጫ ይዎሰናል። በጥናቱ ለመሳተፍ ፈቃደኛ አለመሆን ምንም አይነት ቅጣት ወይም የህክምና አገልግሎት ማጣትን አያስከትልም። እንዲሁም ከጥናቱ ባለቤት ጋር ያለውን ግንኙነትም አያሻክርም። የሚሰጡትን መረጃም ካልተስማማዎት በማንኛውም ጊዜ ማቋረጥ ይችላሉ። ስለዚህ መረጃ ለመስጠት ፍቃደኛ ከሆኑ አዎ በማለት ሊገልጹልን ይችላሉ።

ተጨማሪ ጥያቄ ካለዎት በሚከተለው አድራሻ ያገኙናል።

ስም፡ውዴ እንየው፡ስልክ፤ 092599829 ኢሜል፡wudieeneyew01@gmail.com በነርሲንግና በሚድዋይፈሪ በህጻናት ት/ክፍል ።

አባሪ አምስት ፤ የውል ስምምነት እና የእናቶች ፈቃድ ቅጽ

ከላይ የተጠቀሱትን መረጃዎች በሙሉ ተረድቻለሁ። በዚህ ጥናት ላይ መሳተፍ በሙሉ ፈቃደኝነት እን ደሆነም ተነግሮኛል። በጥናቱ መሳተፍ ቀጥነኛ የሆነ ጥቅም ወይም ክፍያ እንደለሌለው ተረድቻለሁ።። እንደተነገረኝ ከሆነ የምሰጠው መልስ ለሌላ ለማንም ሰው አይሰጥም፤እንዲሁም ስለኔ ማንነት ለማንም አይገለፅም።ስለሆነም በጥናቱ ላይ ለመሳተፍ ፍቃደኛነኝ።ተሳታፊዋ ፍቃደኛ ካልሆኑ አመስግነው ወደሚቀጥለው ተሳታፊ ይለፍ።ተሳታፊው ፍቃደኛ ከሆኑ ግን ይቀጥሉ።

የጠያቂው ስም ---------- ፊርማ ---------- ቀን / /

(የቃለ መጠይቁ ‘‘ጠያቂ ፊርማ ተሳተፊዉ ሙለ በሙሉ ፍቃደኛ መሆኑን ያረጋግጣል።)

አባሪ ስድስት ፡ የአማረኛ ቅጂ መጠይቅዎች

ይህ ቃለ መጠይቅ ለጥናቱ አስፈላጊ የሆኑ መረጃዎችን ለመሰብሰብ በጥናቱ ባለቤት የተዘጋጀ ሲሆን የሚከተሉትን የመረጃ ሀሳቦች ያካትታል። ክፍል አንድ ፤ ማህበረሰባዊ እና ግላዊ ጥያቄዎች፣ ክፍል ሁለት፤ የጨቅላ ህጻናት እናቶችን ቅድመ ወሊድና ከወሊድ በኃላ የህክምና አገልግሎትን የሚመለከቱ ጥያቄዎች፣ ክፍል ሶስት ፤ የቅድመ ወሊድ ዝግጅትን የሚዳስሱ ጥያቄዎች፣ ክፍል አራት፤ ስለ ጨቅላ ህጻናት አደገኛ የህመም ምልክቶች የመረጃ ምንጭ እና በጤና ባለሙያዎች የሚሰጡ የምክር አገልግሎቶችን የሚመለክቱ ጥያቄዎች እና ክፍል አምስት፤ የጨቅላ ህጻናት አደገኛ የህመም ምልክቶችን በተመለከተ የእናቶችን እውቀት የሚዳስሱ ጥቄዎች ናቸው። ጥናቱ የሚካሄደውም ባዲስ አበባ ከተማ በሚገኙ የመንግስት ሆስፒታሎች ውስጥ ነው። እነሱም፤ ጋነዲ፣ ጥቁር አንበሳ እና ቅዱስ ፔጥሮስ ሆስፒታሎችን ያካትታል። ሁሉም መረጃዎች የሚሰበሰቡት ጨቅላ ህጻናት ካላቸው እናቶች ሲሆን የእናቶችም ሆነ የጨቅላ ህጻናት ስም አይጠቀስም ። መረጃው የሚሰበሰበው በሆስፒታሉ በሚሰሩና በአመት እረፍት ላይ ባሉ የመጀመሪያ ዲግሪ ነርስ ባለሙያዎች ነው ።

ቀን----------ወር----------ዓመት----------

የሆስፒታሉ ስም----------

የቃለ መጠይቁ/መረጃ ሰብሳቢው ስም ----------ፊርማ ----------

የተቆጣጣሪው ስም ----------ፊርማ ----------

የሚስጥር ቁጥር/የጨቅላ ህጻኑ ካርድ ቁጥር----------

ተ.ቁ	ጥያቄ	መልስ	ይለፉት
ክፍል 1፡ማህበረሰባዊ እና ግላዊ ጥዊያቄዎች			
101.	እድሜዎ ስንት ነው?	_____	
102.	የሚከተሉት ኃይማኖት ?	1. ኦርቶዶክስ 2. ፕሮቴስታንት 3. ካቶሊክ 4. ሙስሊም	
103.	የትምህርት ደረጃዎ ?	1. ማንበብና መጻፍ የማይችል 2. ከ 1-8 ክፍል የተማረ 3. ከ 9-12 ክፍል የተማረ 4. ከሌጅ እና ከዚያ በላይ የተማረ	

104.	የስራ ሁኔታዎ ?	1. የቤት እመቤት 2. ነጋዴ 3. የመንግስት ሰራተኛ 4. መንግስታዊ ያልሆነ ድርጅት ሰራተኛ 5. የቀን ሰራተኛ 6. ሌላከሆነይጠቀሱ_____	
105.	የመኖሪያ ቦታ ?	1. ከተማ 2. ገጠር	
106.	የጋብቻ ሁኔታዎ?	1. ባለትዳር 2. አግብታ የፈታች 3. የሞተባት 4. ያላገባች	
107.	የባለቤትዎ የትምህርት ደረጃ?	1. ማንበብም መጻፍም የማይችል 2. ከ 1-8 ክፍል የተማረ 3. ከ 9-12 ክፍል የተማረ 4. ኮሌጅ እና ከዚያ በላይ የተማረ	
108.	የባለቤትዎ የስራ ሁኔታ ?	1. ነጋዴ 2. የመንግስት ሰራተኛ 3. የቀን ሰራተኛ 4. መንግስታዊ ያልሆነ ድርጅት ሰራተኛ 5. ሌላ ከሆነይጠቀስ_____	
109.	የቤተሰብዎት አባላት ብዛት ስንት ነው?	_____	
110.	የቤተሰብዎ ጠቅላላ የወር ገቢ ምን ያህል ነው ?	_____	

ክፍል ሁለ፤ የእናቶች ቅድመወሊድና ከወሊድ በሆላ የህክምና አገልግሎትን የሚመለከቱ ጥያቄዎች:

201.	የቅድመ ወሊድ ክትትል አድርገው ያቃሉ?	1. አዎ 2. የለም	የለም ካጥ.ቁ 202ይለፉት
202.	ምን ያህል ጊዜ የቅድመ ወሊድ ክትትል አድርገው ነበር?	_____	
203.	የአሁኑ ልጅዎትን የት ነው የወለዱት?	1. ጤና ጣቢያ 2. ሆስፒታል 3. ጤና ኬላ 4. ቤት	
204.	በወሊድዎ ጊዜ ችሎታ/ልምድ ባላቸው	1. 1.አዎ	የለም ካሉጥ.ቁ

	አዋላጆች ታግዘው ነበር?	2. የለም	206ን ይለፉት
205.	በወሊድዎ ጊዜ ያግዘዎት/ያዋለድዎት ማን ነበር?	1. ጤና ባለሙያዎች (ነርስ፣ዶክተር ወይም የመጤና መኮነን) 2. ቤተሰብ 3. ጎረቤት 4. ዘመድ 5. ባህላዊ አዋላጆች 6. የጤና ኢክስቴንሽን ባለሙያዎች 7.ሌላ ካለ ይጠቀሱ_____	
206.	የአሁኑን ልጅዎትን በምንድን ነው የወለዱት?	1.በተፈጥሮ ምጥ/በምጥ 2.በመሳሪያ 3.በቀዶ ጥገና	
207.	ምን ያህል/ስንት ጊዜ ልጅ ወልደዋል?	_____	
208.	እንደወለዱ ወዲያሁኑ የድህረ ወሊድየጤና አገልግሎት አግኝተዋል /ተደርጎለዎት ነበር?	1.አዎ 2.የለም	የለም ካሉ ጥ.ቁ 210ን ይለፉት
209.	ስንት ጊዜ የድህረ ወሊድ አገልግሎት አግኝተዋል?	_____	
210.	የድህረ ወሊድ ጊዜ ለጨቅላ ህጻናት አደገኛ ስዓት መሆኑን ያቃሉ ?	1.አዎ 2.አላቅም	
ክፍል ሶስት፡የቅድመ ወሊድ ዝግጅትን የሚዳስሱ ጥያቄዎች			
301.	ባለፈው የርግዝና ስዓትዎ የወሊድ ዝግጅት አድርገው ነበር?	1.አዎ 2.የለም	የለምካሉጥ.ቁ ጥ.ቁ302ን ይለፉት
302.	ምን አይነት የወሊድ ዝግጅት አድርገው ነበር? (ከአንድ በላይ መልስ መስጠት ይችላሉ)	1.የገንዘብ 2.የትራንስፖርት 3.ችሎታ/ልምድ ያላችው አዋላጆችን ማፈላለግ 4.ለወሊድ ሚሆኑ የጤና ተቋሞችን ማግኘት ሌላ ካለ ይጥቀሱ_____	
303.	ባለፈው እርግዝነዎ ወቅት ልጅዎትን የሚወልዱበትን ቦታ አመቻችተው ነበር ?	1. አዎ 2. የለም	የለም ካሉ ጥ.ቁ 304ን ይለፉት

304.	ልጅዎትን የት ለመውለድ ነበር ያቀዱት?	1. ጤና ጣቢያ 2. ሆስፒታል 3. ጤና ኬላ 4. ቤት	
ክፍል አራት: ስለ ጨቅላ ህጻናት አደገኛ የህመም ምልክቶች የመረጃ ምንጭ እና በጤና ባለሙያዎች የሚሰጡ የምክር አገልግሎቶችን የሚመለክቱ ጥያቄዎች			
401.	ስለጨቅላ ህጻናት አደገኛ የህመም ምልክቶች ሰምተው ያቃሉ?	1. አዎ 2. የለም	የለምካሉጥ.ቁ 402ን ይለፉት
402.	የመረጃ ምንጭዎ ምን ነበር?	1.የጤና ባለሙያ 2. የጤና ኢክስቴንሽን ባለሙያዎች 3 . ሬድዮ 4.ቴሌቪዥን) 5.ሌሎች ካሉ ይግለጹ _____	
403.	በድረ ወሊድ ክትትልዎ ጊዜ ስለጨቅላ ህጻናት አደገኛ የህምመ ምልክቶች ትምህርት አግኝተው ያቃሉ ?	1. አዎ 2. የለም	
ክፍል አምስት፡የጨቅላ ህጻናት አደገኛ የህመም ምልክቶችን በተመለከተ የእናቶችን እውቀት የሚዳስሱ ጥቄዎች:			
501.	ስለ ማንኛውም የጨቅላ ህጻናት አደገኛ የህመም ምልክቶች ያቃሉ?	1.አዎ 2.የለም	የለምካሉጥ.ቁ 502ን ይለፉት
502.	የሚያውቁትን የጭቅላ ህጻናት አደገኛ የህመም ምልክት በሙሉ ይዘርዝሩ።። *(ከአንድ በላይ መጥቀስ ይቾላሉ)*	1. በደንብ አለመጥባት ወይም መጥባት አለመቻል 2. ትኩሳት 3. ቶሎ ቶሎ መተንፈስ 4. ለመተንፈስ መቸገር ወይም መተንፈስ አለመቻል 5. ድካም/መልፈስፈስ ወይም የአምሮ መሳት 6. የሰውነት ሙቀት መቀነስ 7. መንቀጥቀጥ ወይም መንዘፍዘፍ 8. የእምብርት መመረዝ ወይም የእምብርት መቅላት 9. የእጅ መዳፍ እና የእግር ጫማ ቢጫ መሆን 10. ቀጣይነት ያለው ማስመለስ 11. በጣም ትንሽ ጨቅላ ህጻን • 12.ከአይን የመግል ፈሳሽ መፍሰስ /የአይን መቅላት 13.ከተወለደ ከ 24 ስዓት በኃላ የመጀመሪያ ሰገራ አለመኖር 14. ቆዳ ላይ የሚወጡ መግል የቋጠሩ ሽፍታዎች መኖር	

ስለተሳተፉ በጣም እናመሰግናለን።።