



**ADDIS ABABA UNIVERSITY
COLLAGE OF HEALTH SCIENCE
SCHOOLE OF PUBLIC HEALTH**

**ASSESSMENT OF THE MAGNITUDE AND FACTORS ASSOCIATED WITH
LOW BIRTH WEIGHT AMONG NEWBORS IN PUBLIC HOSPITALS OF
ADDIS ABABA**

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III. Acronyms and Abbreviations

AAHB Addis Ababa Health Bureau

AAU: Addis Ababa University

ANC: Antenatal Care

AOR: Adjust Odd Ratio

APH: Ante Partum Hemorrhage

CI: Confidence Interval

COR: Crude Odd Ratio

EDHS: Ethiopian Demography and Health Survey

HTN: Hypertension

IUGR: Intra Uterine Growth Restriction

LBW: Low Birth Weight

LNMP: Last Normal Menstrual Period

MUAC: Mid Upper Arm Circumference

SGA: Small for Gestational Age

TT: Tetanus Toxoid

WHO: World Health Organization

IV. Abstract

Back ground: Low birth weight is a public health problem in almost all countries of the world of which Ethiopia is one. The empirical literature provides mixed results on the relationship between many of these factors and LBW. Some of the variables that are found to be predicator of LBW in one study may not necessarily be a risk factor in another study.

Objective: The main objective of this study is to assess the magnitude and factors associated with low birth weight at public hospitals of Addis Ababa from August 2014 to June 2015.

Methods: Hospital based cross-sectional study was conducted in Addis Ababa. The study was conducted among three selected hospitals. A total of 457 samples were drawn proportionally from the selected hospitals. Pre tested structured interviewer administered questionnaire was used. The collected data was cleaned, coded, and entered into EPI INFO and then exported to SPSS version 21.0 for analysis.

Result: The magnitude of low birth weight was 8.8%. Low birth weight was more likely associated with timing of ANC visit (AOR=7.407, 95% CI=1.148, 47.794), taking extra meal during pregnancy (AOR=0.249, 95%CI=0.064, 0.960), type of pregnancy (AOR=0.302, 95% CI=0.094, 0.972) and iron/folic acid supplementation (AOR=0.30295%CI=0.092, 0.972).

Conclusion and recommendation: Low birth weight was substantial and strengthening the public health intervention that put into consideration the factors identified here are essential.

Key word: Low birth weight, maternal risk factors

1. INTRODUCTION

1.1. Background

. Low birth weight is a major determinant of mortality, morbidity and disability in infancy and childhood and also has a long-term impact on health outcomes in adult life (1). The consequences of poor nutritional status and inadequate nutritional intake for women during pregnancy not only directly affects women's health status, but also may have a negative impact on birth weight and early development. Low birth weight also results in substantial costs to the health sector and imposes a significant burden on society as a whole.

While, the global prevalence of such births is slowly dropping, but it is as high as 72% to 22% in many developing countries of Asian and African countries respectively (1,2). Studies have indicated that the mean birth weight of African babies is significantly lower than those of developed countries. Preterm and small for gestations births accounted for 52% of newborn deaths in the analysis of data from East Africa (3, 4)

Low birth weight has been defined by WHO as a weight at birth of less than 2,500 gram (5.5pounds) in the first hour of delivery. This practical cut-off for international comparison is based on epidemiological observations that infants weighing less than 2,500 gram are approximately 20 times more likely to die than heavier babies. A birth weight below 2,500 gram contributes to a range of poor health, those who survive have impaired immune function and increased risk of morbidity are likely to remain under nourished, with reduced muscle strength throughout their lives, and may suffer a higher incidence of diabetes and heart disease, lower IQ and cognitive disabilities, affecting their future performance in school and their job opportunities(5). These can be overcome by applying preventive measures on the risk factors through lifespan approach (before, during, and after child birth) to the health of women that takes full account of socioeconomic and

environmental as well as medical issues and by applying important Preventive interventions on maternal nutrition, antenatal care (ANC), micronutrient supplementation, prevention and treatment of infections as malaria, reduction of teenage pregnancy, and maternal education (6).

1.2. Statement of the problem

Low birth weight is a public health problem in almost all countries of the world with a global magnitude of 15.5 percent (2). In Ethiopia, the prevalence of under-five mortality ranges from 53 per 100 live births in Addis Ababa to 169 per 1000 live births in Benshangule Gumuze which is mainly attributed to low birth weight (7). However, recent evidence regards to the magnitude and factors associated with LBW are insufficient in the country, in addition some of the factors of low birth weight are inconclusive. Some of the determinant factor in the empirical literature is questionable (23).

The empirical literature provides mixed results on the relationship between many of these factors and LBW. Some of the variables that are found to be predictor of LBW in one study may not necessarily be a risk factor in another study. Supporting the argument that possible determinants of LBW vary across the geographical location.

On the other hand, the DHS results were based on the mother's subjective assessment of the baby's weight, and active baby weighting was not done. In addition, DHS looked for incidents of LBW for babies born in the last five years preceding the survey (7). Reporting correctly retrospective information of such kind depends on how far the memory goes and the attention given by the mother and the family to remember the weight of the child, which in most cases is difficult. Therefore it is helpful to conduct study in urban settings like Addis Ababa most the mother delivered in the health facilities. Since many respondents deliver in health facilities and will have their babies weighted at birth, therefore, it is preferable and presumed more reliable than the information we get on the average, smaller than average or very small at birth(7).

As the prevalence of LBW is one of the most important health indices and it is important to know the prevalence and risk factors for LBW in different areas. It is one of the most important vital statistics used as an indicator of the quality of ANC, medical service, and general health service to the mother. More evidence based institutional data are important to detect factors associated with the magnitude of the problem.

1.3. Significant of the study

This study provides information in the burden of low birth weight and its relationship to the different factors, and provides a working base for planning, improving, programs and interventions to effectively address this problem.

2. LITERATURE REVIEW

Birth weight has been, and continues to be, a very important public health problem for two reasons. First, birth weight has enormous repercussions on individual level outcomes. Birth weight is a key determinant of neonatal mortality post neonatal, infant mortality, and infant and childhood morbidity, second, low birth weight is a high incidence phenomenon that affects a large proportion of the population, especially in the developing countries of African and Asia (2). Hence, birth weight is an essential element in the success of national and global efforts to improve child health, and a major target for public health intervention. Most notably, birth weight is a key determinant of the achievement of a key component of the millennium development Goals, MDG4, which seeks to reduce under five mortality by two-thirds between 1990 and 2015. As a result, birth weight—especially low birth weight and its determinants have become a focal area for clinical and epidemiological investigations worldwide (1, 2).

There is general agreement that LBW is a serious problem in both senses expressed above (i.e. its role in individual health outcomes and its high incidence), and the fact that its determination is “multifactor” however, there is still significant disagreement on the exact magnitudes of its incidence and the factors that exert independent influence on LBW (1,2). This section of the proposal summarizes the existing literature on the magnitude of the problem the incidence of low birth weight and its determinant.

2.1. Magnitude of low birth weight

With a global incidence of 15.5 percent, low birth weight is a public health problem in almost all countries, African and Asian countries account for disproportionately higher share of the 20 million low birth weight babies born annually (2). While the magnitude of LBW in developing African and Asian countries are known to be high. There are large variations in existing estimates of its incidence. Estimates of incidence of LBW in the empirical literature show a high degree of

variation between countries. Reported levels range from a low incidence of 4.5 percent in Jakarta, Indonesia, 16.9 % in East Nigeria to high incidence of 27.5 Percent and 30.9 percent in Libya and Tarakswar, India respectively (10,12,14,27), between these extremes, we find incidence rates of 11.7 percent in Nepal, 18.8 percent in Abha city, Saudi Arabia, 12.3% in Kenya and 10.9 percent in Gambia, (8,11,13,28) large variations in estimated incidence of LBW exist not only between countries but also between estimates obtained from the same country. For instance, two studies conducted in Ghana report highly divergent incidence rates of 21.1 percent and 9.4 percent this may be due to the different study area and sampling method (5,14).

Empirical studies that use facility based data from Ethiopia put the incidence of LBW between 7.2 percent and 22.5 percent. Another study conducted in Addis Ababa show the level of incidence of low birth weight, preterm and still birth 5.6 percent 7.5 percent 3.1 respectively (18). A study conducted in Jimma hospital showed that the incidence of LBW found to be 11.02%, while another study in the same hospital undertaken a year later puts the incidence at 22.5 percent (21, 22) two studies conducted in the university of Gonder Referral Hospital found incidence of 17.1 and 17.4 percent (19,20).

The most recent Demographic and Health Survey (2011) found that among children born in the five years before the survey who were weight at birth, 9.1 percent weighted less than 2.5 kilograms, using a mother's subjective assessment of the size of the baby at birth to estimate LBW, they reported that 21 percent as smaller than average. Significant variations in incidence by place of residence (rural-urban), region of residence and maternal age were reported (7).

A very recent (2014) study that uses data from the Health and Demographic surveillance system obtained an incidence rate of 17.88 percent in north western Ethiopia. This level of incidence is close to the facility based estimates obtained from Gonder Referral Hospital. A study using community based survey data for 2009/2010 collected from a rural area (Kersa, East Ethiopia)

reports the highest LBW incidence rate of 28.3 percent while another study in Axume and Laelay Maichew district show the prevalence of LBW 9.9 percent (24, 25, and 26).

Factors determining LBW

It is generally recognized that LBW can be caused by many factors. However, there is considerable controversy about the factors that have independent effects on LBW as well as the quantitative importance of those effects.

Factors that are hypothesized as having significant direct effects on LBW can be classified in different ways, in this study we adopt a scheme adopted in an influential meta-analytic study this comprehensive study groups determinants of LBW into seven categories, namely;

Demographic and psychological factors, genetic and constitutional factors, obstetric factors, nutritional factors, maternal morbidity during pregnancy, toxic exposure and ANC care (23).

Demographic and psychosocial factors

The determinates of LBW that fall under this category include socioeconomic status (education, occupation, and/or income), maternal age, marital status and maternal psychological factors. There is broad consensus that socioeconomic status, however measured, is a key determinant of LBW. The incidence of LBW children is likely to be higher in lower socio-economic strata as mothers with low levels of education, low income, and without permanent employment is more likely to be malnourished, have chronic diseases and seek and receive inadequate care. As a result, LBW tends to be more incidence among mothers from lower socioeconomic strata. Among components of socioeconomic status, education is accorded a special role. On top of its role as an indicator of socioeconomic status, education is claimed to have an independent direct effect that is mediated through its influence in health-related behavior, including care-seeking (20, 21).

Genetic and constitutional factors

Genetic and constitution factors that were identified as having an important effect on the LBW in the literature worldwide are infant sex, racial/ethnic origin, maternal height, paternal height and weight, maternal pre-pregnancy weight and maternal haemodynamics.

At the global level, the empirical literature is inconclusive regarding the importance of infant sex and racial/ethnic origins. After a large meta-analytic study concluded that despite the large number of studies that a bearing on racial /ethnic differences in intrauterine growth, few have been of sufficient methodological rigour to permit estimates of an independent genetic contribution (23, 24, 28).

Obstetric factors

A number of obstetric factors have been tested in the empirical literature for having a direct and independent effect on birth weight. Obstetric factors investigated in the literature include parity birth or pregnancy interval (multiple pregnancies in short intervals), intrauterine growth and gestational duration in prior pregnancies (i.e., previous low birth-weight infants), prior spontaneous and induced abortion, prior stillbirth or neonatal death, and prior infertility. Generally, incidence of LBW is higher among primiparous women of age group below 20 and above 35 years. Similarly older age of primiparous mothers has also been found as a risk factor for LBW (5, 11, 12, and 15). After a level, multi gravity and higher parity can lead to less favorable birth weight outcomes. This is mainly related to maternal nutritional status. If a mother cannot recover fully from the effects of her last pregnancy and period of breast feeding before becoming pregnant again her nutritional status might deteriorate sufficient to result in an increased risk of premature birth and LBW babies (10,11,23,27).

Nutritional factors

Maternal caloric intake during pregnancy and maternal nutritional stores are found to have affected intrauterine growth of fetus. Hence, gestational weight gain has often been taken as a summary indicator and proxy for availability of adequate sources for fetal energy requirements and was found to have an impact on birth weight. Studies that separately investigated of caloric intake, protein intake and energy expenditure, work and physical activity also found a significant impact on LBW (23, 24).

Micronutrient deficiencies have also been found to be closely associated with LBW. Various studies investigated the effect on birth weight of micronutrients including iron, folic acid, vitamin B12, zinc, copper, calcium, phosphorus, vitamin D, vitamin B6. The studies generally found significant association of varying magnitude. The effect of micronutrients are specially pronounced in poor countries where multiple micronutrients deficiencies prevail due to inadequate food intake poor dietary quality or when micronutrients are not released from foods, not absorbed efficiently (5,20,23).

Maternal morbidity during pregnancy

This group includes common episodic illnesses and symptoms that are hypothesized to influence intrauterine growth or/and gestational duration through various mechanisms. Such illnesses many, and often do, result in a reduction in the energy available for fetal growth via decreased caloric intake and higher metabolic cost of maintaining febrile temperature and mounting appropriate host defenses. Furthermore such infection/symptoms often lead to diminished uterine blood flow or even spread to the placenta or amniotic fluid and hence interfere with intrauterine growth or precipitate premature delivery.

Part of the empirical literature on the relation between LBW and morbidity during pregnancy deals with specific illnesses, including the effect on the weight of malarial and infections of the urinary and genital tracts. Malaria is of special interest in Ethiopia because it is endemic in many parts of country, and known to affect pregnant women more (than non- pregnant woman, for instance). Malaria is suspected to have an importance adverse effect on birth weight through the mechanism mentioned above as well as through other more direct mechanisms. Chronic medical illness and infections during pregnancy, such as rubella cytomegalovirus, toxoplasmosis, and syphilis that affect the fetus may also lead to low birth weight (13, 21, 23, 27).

Antenatal care

Antenatal care can have a beneficial impact on intrauterine growth of the fetus and /or gestational duration, and hence birth weight, through prevention and timely treatment of complication of pregnancy. Empirical studies in this regard have examined three dimensions of antenatal care that means timing of first antenatal care visit, number of antenatal care visit and the quality of antenatal care separately /and/ or using an aggregate indicator of adequacy. Generally, the results show that adequate and intermediate (compared with inadequate) antenatal care was significantly associated with a lower risk of low birth weight (13, 14, 20, 21, 24, 27).

Toxic exposures

The last category of factors affecting birth weight relates to maternal exposure to toxic elements including cigarette smoking, alcohol consumption, caffeine and coffee consumption, and other toxic exposures (23).

As noted above many studies were conducted in other countries and they found most of the factors are similar. Socio demographic factors, obstetric factors, neonatal factors and environmental factors, like pollution are among the commonest findings. Therefore, this study will focus to investigate

some of the socio demographic factors like, age height, education, occupation, family size obstetric factors like, , type of pregnancy, parity, ANC, iron/folic acid supplementation, history of abortion still birth APH and small baby, chronic diseases, cigarette smoking, alcohol consumption, neonatal sex and weight. This study may have significant input in identifying some of the factors and improving the condition of the mother.

3. OBJECTIVES

3.1. General objective

To assess the magnitude and factors associated with low birth weight among newborns delivered at the selected public hospitals of Addis Ababa from August 2014- June 2015.

3.2. Specific objectives

To determine the magnitude of low birth weight among newborns delivered at the selected public hospitals of Addis Ababa.

To examine the factors associated with low birth weight among newborns delivered at the selected public hospitals of Addis Ababa.

4. METHODS AND MATERIALS

4.1. Study design and study period

Institution based cross sectional study design and quantitative method was done from August 2014 to June 2015.

4.2. Study area

The study was conducted in Addis Ababa, the capital city of Ethiopia. The city has 10 sub city administration and 116 Woreda administrations. According to population projection value for 2014 the city has an estimated population of 3,195,000 the proportion of male counts 1,515,000 and female counts 1,680,000. The city has 11 public hospitals of which 5 are owned by AAHB, 4 by federal ministry of health, one AAU Tikur Anbesa which is under the ministry of Education (29).

4.3. Source population

Source population for this study was all newborns born in three public hospitals of Addis Ababa.

4.4. Study population

The study population for this study was all consecutively selected newborns during the data collection period.

4.5. Inclusion and exclusion

4.5.1. Inclusion criterion

- Alive new born baby born with a clearly defined gestational age
- Anew born baby after 37 completed weeks and before 42 weeks

4.5.2. Exclusion criteria

- Multiple births
- Baby with congenital anomalies

4.6. Sample size determination

The sample size was determined using a formula for estimating sample size for single population proportion assuming a confidence level of 95% margin of error 3% and 10% non-response rate.

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

Where P=magnitude of LBW which is 17.1 % (9).

D=marginal error of 3%

Z=a standard score corresponding to 95% confidence level.

N=the required sample size

The calculated sample size is 412 by considering 10% non-response rate, the overall Sample is 457

4.7. Sampling procedure

Health institutions that provide delivery services were stratified into Federal Ministry of health and Addis Ababa City Administration Health Bureau. One hospital from the Federal Ministry of Health and two from Addis Ababa City Administration Health Bureau were selected using lottery method. The allocation of the study subjects to each hospital was determined based on the proportion of number of deliveries of the same period last year (from hospital records) in each health facilities. Consecutive sampling was employed to select the study participants in each health facility. Participants were recruited immediately after delivery, and recruitment was continued until the sample size allocated fulfilled/met. (**Figure-1**)

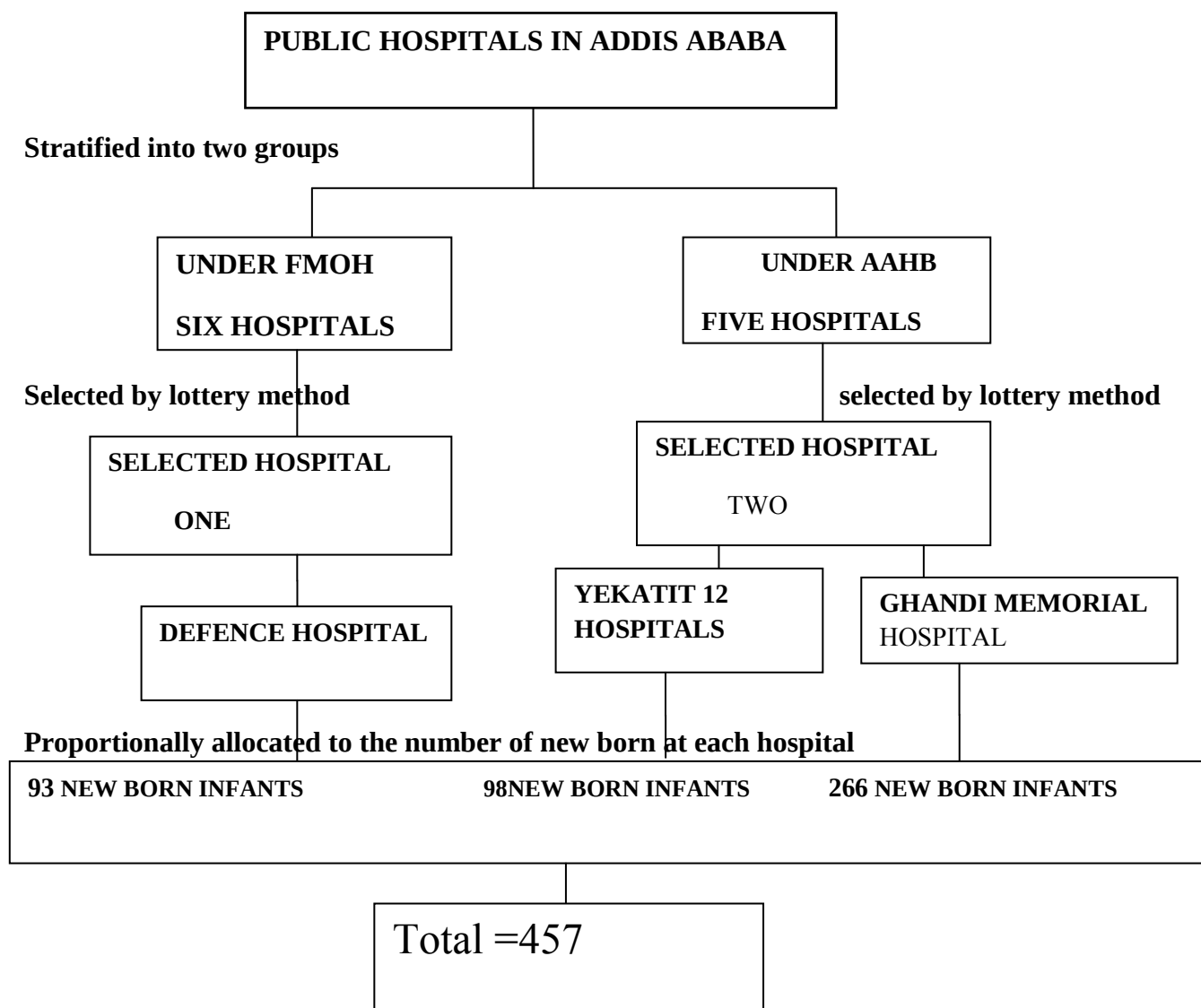


Fig 1. Schematic presentation of sampling procedure in the selection of public hospitals having delivery service June 2015

4.8. Variables of the study

Dependent variable

- Low birth weight

Independent variables

- Socio-demographic variables (maternal age, height marital status, Education, occupation of the mother and father)
- Parity, first booking at antenatal clinic, no of ANC visit, TT vaccination, iron supplementation, chronic illness, alcohol consumption, substance use and previous abortion, APH and stillbirth, extra diet, counseling about diet.
- Sex of the child

4.9. Standard and/or operational definitions (3)

- **Low birth weight-** low birth weight is defined as a new born with a body weight at birth of less than 2500 grams
- **Term baby-**a baby delivered after 37 completed weeks and before 42 weeks
- **Premature-**the term premature is used for infants born before 37 weeks gestation and after 28 weeks of gestation
- **Intrauterine growth restriction (IUGR)-** describe a fetus that has not reached its growth potential because of genetic or environmental factor
- **Small for gestational age (SGA)** refers to an infant whose birth weight is below the 10th percentile for the appropriate gestational age.
- **Very low birth weight (VLBW)** is a birth weight < 1500g regardless of gestational age
- **Stillbirth** – a baby born dead after 28 completed week of pregnancy
- **Abortion-** a fetus born before 28 week of gestation
- **Substance use-**those mothers who use substance at least once during the index pregnancy.
- **Alcohol use-** those mothers who were drank any type of alcohol at least once during the index pregnancy.

4.10. Data collection procedure

Data collection was done using pre-tested and closed ended structured questionnaire adopted from different literatures. Before the data collection the questionnaire was translated to Amharic and then

back translated to English to check for consistency of the flow of the questionnaires. To ensure the validity of the information gathered data was collected by three trained midwives who were selected from other health facilities. The data collection was supervised by one BSc nurse in each selected health facility (not from the same hospital) and by the principal investigator.

4.11. Data quality control

One day training was given for the data collectors and supervisor on the sampling procedure, technique of approaching the participants during interview, the inclusion and exclusion criteria and about the measurements in general. On the second day questionnaire was pre-tested on (5% of the total sample size) in one of the hospitals outside the selected ones to assess for its completeness, clarity, length and skip patterns. Then, appropriate amendments were done on the questionnaire based on the feedbacks from the pretest and further briefing was given to the data collectors and supervisor as part of the training.

After securing an oral consent, interview was carried out on the first postnatal day. Birth weight of the newborns was measured using a standard baby weighing scale graded in grams, taken within one hour after delivery with naked weight by data collectors. Weighing scales were checked daily by the principal investigator and between measurements checked by the data collectors and adjusted at zero level.

To ensure the quality of the data, joint discussions were conducted between the principal investigator and data collectors to identify any problems that could occur in the course of the data collection. In addition, inspection for completeness and quality of data collection was made on daily bases by the supervisors and detailed feedback was provided to data collectors.

4.11. Data analysis procedures

The data was coded and entered in to computer using Epi-info version 3.5.4 statistical package. Then, the analysis was made with IBM SPSS version 21 after exporting the prepared data. Descriptive statistics such as frequency distribution and mean, standard deviation and range were computed to describe the major variables of the study. Odds ratio and p-value were computed to see whether any relationship exists between the two variables under question. P-value less than 0.05 considered statistically significant. Binary logistic regression and multivariate logistic regression were performed to see the association of each of the independent variables on the outcome variables

4.12. Dissemination of research findings

The finding of this study will be presented to Addis Ababa University School of Public Health as fulfillment of the master of public health. The finding will be shared/submitted to Addis Ababa city administration health bureau, and the concerned hospitals. Subsequently, attempts should be made to present it on scientific conferences and published it on scientific journals.

4.13. Ethical clearance

Ethical clearance was obtained from the Research Ethical Clearance Committee of the School of Public Health Addis Ababa University and permission was obtained from the head of study facilities. Before enrolling any of the study was described and discussed for each respondent and verbal consents were obtained from the mothers.

5. RESULTS

5.1. Socio demographic characteristics of the participants

A total of 457 mothers who gave birth in the selected hospitals were interviewed. Response was 100%. About two hundred eighty eight (63.0%) were between 20-29 years. The mean age of the respondents was 28 years ± 10 . The majority of the respondents height was above 150 centimeter 445 (97.4%). Three hundred twenty seven (71.6%) were married and close to half 192 (42.0%) had attained secondary level education. About one-third 139 (30.4%) were house wives while 132 (28.9%) of the respondents, their husbands were government employee. Of the total most of them had family size of less than four 322 (70.5%) and more than half of the babies were female sex 262(57.2%). (Table-1)

Table 1. Selected Socio demographic characteristics of mother who gave birth at the selected public hospitals of Addis Ababa, May 2015

Variables	Frequencies(no)	Percentage (%)
Age(in years)		
<19	11	2.4
20-29	288	63.0
30-34	67	14.7
35+	61	13.3
Unknown	30	6.6
Height		
<150 cm	12	2.6
≥150 cm	445	97.4
Marital status		
Married	327	71.6
Cohabitation	106	23.2
Separated	19	4.2
Others	5	1.1
Level of education		
Illiterate	26	5.7
Primary school	71	15.5
Secondary school	192	42.0
Collage and above	168	36.8
Occupation of the mother		
Government employee	112	24.5
Private employee	95	20.8
Merchant	73	16.0
House wife	139	30.4
Others	38	8.3
Occupation of the husband		
Government employee	132	28.9
Private employee	103	22.5
Merchant	111	24.3
Daily laborer	88	19.3
No husband	23	5.0
Family size		
1-3	322	70.5
4-5	132	28.9
>5	3	0.7
Sex of the baby		
Female	262	57.3
Male	195	42.7

5.2. Obstetric characteristics of the participants

More than two-third 343 (75.1%) of the current delivery pregnancies were planned. Two-hundred sixty five (58%) of mothers were multi-porous of which 42 (15.8%) of mothers had history of small baby in their previous birth. Majority 218 (47.7%) of participants had greater than four ANC visit and only 158 (42.9%) mothers start ANC during the first three month of pregnancy. More than two third 374 (81.8%) mothers have TT vaccination during or before the current pregnancy. More than half 254(55.4%) of mothers reported that they were provided with dietary counseling during the current pregnancy and 216 (47.3%) were take extra meal during the current pregnancy. Two hundred seventy five mothers (60.2%) were supplemented with iron/folic acid during the current pregnancy. From the total, 80 (17.5%) mothers had history of abortion, 46 (10.1%), history of still birth and 56 (12.6%) APH during the index pregnancy. Ninety seven (21.5%) mothers were used alcohol like, tella, beer, wine, areke during the current pregnancy. Of the total 25 (5.5%) of the mothers were used substances like, chat, cigarette and shisha and 21(4.6%) of the mothers had chronic diseases like, Diabetic mellitus, hypertension. (Table 2)

Table 2a. Obstetric and baby characteristics of mother, who gave birth at the selected public Hospitals of Addis Ababa, May, 2015

Variables	Frequencies(no)	Percentages (%)
History of previous small baby		
Yes	42	15.8
No	223	84.2
Current pregnancy type		
Planned	343	75.1
Unplanned	114	24.9
No of parity		
1	192	42.0
2-4	210	46.0
≥5	55	12.0
No of ANC visit for the last pregnancy		
No ANC	38	8.3
1-3	199	43.5
≥4	218	47.7
Trimester at 1st visit for the last pregnancy		
1 st	158	42.9
2 nd	126	34.2
3 rd	84	22.8
TT vaccine before or during pregnancy		
Yes	374	81.8
No	83	18.2
Iron supplementation for current pregnancy		
Yes	275	60.2
No	182	39.8
dietary counseling during the current pregnancy		
Yes	254	55.6
No	203	44.4
Extra meal during current pregnancy		
Yes	216	47.3
No	241	52.7
History of abortion		
Yes	80	17.5
No	377	82.5
History of still birth		
Yes	46	10.1
No	419	89.9

Table 2b. Obstetric and baby characteristics of mother who gave birth at the selected public Hospitals of Addis Ababa, May, 2015

Variables	Frequencies(no)	Percentages (%)
APH during the current pregnancy		
Yes	56	12.3
No	401	87.7
Substance use during the current pregnancy		
Yes	25	5.5
No	432	94.5
Alcohol use during the current pregnancy		
Yes	97	21.5
No	360	78.5
Chronic medical illness		
Yes	21	4.6
No	436	95.4

5.3. Magnitude of low birth weight

Mean birth weight of the newborns was 3041 ± 479.9 gram range 1200 to 4500 gram. Low birth weight status was forty (8.8 percent).

5.4. Factors associated with low birth weight

Using bivariate analysis, the socio demographic, maternal factors and infant characteristics were tested for their association with the dependent variable LBW. Those variables significant at 0.05 were entered in to multiple logistic regressions to control the effect of confounders.

5.4.1. Socio demographic factors

Only infant sex had statistically significant association with the presence of low birth weight at an adjusted state. However other socio-demographic variables had not statistically significant association with the occurrence of low birth weight at the bivariate analysis. (Table 3)

Table 3. Bivariate Analysis of socio demographic factors of the participants at the selected public hospitals of Addis Ababa, May 2015

Variables	LBW		COR(95%CI)	P-value
	No	Yes		
Age(in years)				
<19	9	2	1	
20-29	267	22	0.371(0.075,1.823)	1.823
30-34	61	6	0.443(0.077,2.539)	2.539
≥35	53	8	0.679(0.124,3.729)	3.729
Height				
<150 cm	9	3	3.676(0.954,14.168)	0.059
≥150	408	37	1	
Marital status				
Married	295	26	0.353(0.038,3.271)	0.359
Cohabitation	100	12	0.480(0.050,4.654)	0.527
Separated	18	1	0.222(0.011,4.358)	0.322
Others	4	1	1	
Education				
Yes	382	33	0.432(0.178,1.048)	0.63
No	35	7	1	
Level of education				
Illiterate	23	3	1	
Primary school	63	8	1.762(0.740,4.199)	0.201
Secondary school	173	19	1.208(0.484,3.017)	0.686
Collage and above	158	10	0.735(0.242,2.228)	0.586
Occupation of the mother				
Government employee	107	5	0.249(0.071,0.871)	0.059
Private employee	82	13	0.846(0.296,2.416)	0.754
Merchant	66	7	0.566(0.176,1.821)	0.340
House wife	130	9	0.369(0.123,1.113)	0.077
Others	32	6	1	
Occupation of the husband				
Government employee	122	10	1.361(0.449,4.125)	0.586
Private employee	90	13	2.398(0.819,7.016)	0.110
Merchant	101	10	1.644(0.541,4.998)	0.541
Daily laborer	83	5	1	
Family size				
1-3	300	22	1	
4-5	115	17	2.016(0.133,3.933)	0.400
>5	2	1	6.818(0.595,78.161)	0.123
Sex of the baby				
Female	230	32	1	
Male	187	8	0.307(0.138,0.683)	0.004*

(* significant at p value less than 0.05)

5.4.2. Maternal and infant factors

Among the maternal factors type of pregnancy, ANC, parity, iron/folic acid supplementation, TT vaccination, extra meal during pregnancy, history of small baby and APH during the current pregnancy were found to be significant association at un adjusted state. (Table 4)

Table 4a. Bivariate logistic regression analysis of maternal and infant risk factors for low birth weight at selected public hospitals of Addis Ababa, May 2015

Variables	LBW		COR (95%)	P-value
	No	Yes		
History of previous small baby				
Yes	33	9	3.364(1.360,8.320)	0.009*
No	185	15	1	
Current pregnancy type				
Planned	336	19	0.218(0.112,0.425)	0.000*
Unplanned	81	21	1	
No of parity				
1	179	13	1	
2-4	192	18	1.269(0.615,2.711)	0.500
≥5	46	9	2.694(1,085,6.690)	0.033*
No of ANC visit for the current pregnancy				
No ANC	38	8	1	
1-3	178	21	0.646(0.243,1.718)	0.381
≥4	202	11	0.272(0.094,0.791)	0.017*
Trimester at 1st visit for the current pregnancy				
1 st	151	7	1	
2 nd	114	12	2.271(0.867,5.950)	0.095
3 rd	73	11	3.250(1.210,8.730)	0.019*
TT vaccine before or during pregnancy				
Yes	345	27	0.433(0.213,0.880)	0.021*
No	72	13	1	
Iron supplementation for current pregnancy				
Yes	258	17	0.456(0.236,0.879)	0.019*
No	159	23	1	
dietary counseling during the current pregnancy				
Yes	229	25	1.368(0.701,2.670)	0.358
No	188	15	1	
Extra meal during current pregnancy				
Yes	206	10	0.341(0.163,0.716)	0.004*
No	211	30	1	
History of abortion				
Yes	72	8	1.198(0.530,2.707)	0.664
No	345	32	1	
History of still birth				
Yes	41	5	1.310(0.486,3.529)	0.593
No	376	35	1	

(* significant at p value less than 0.05)

Table 4b. Bivariate logistic regression analysis of maternal and infant risk factors for low birth weight at selected public hospitals of Addis Ababa, May 2015

Variables	LBW		COR (95%)	P-value
	No	Yes		
APH during the current pregnancy				
Yes	46	10	2.688(1.234,5.856)	0.013*
No	371	30		
Substance use during the current pregnancy				
Yes	22	3	0.680(0.335,1.380)	0.962
No	395	37	1	
Alcohol use during the current pregnancy				
Yes	86	11	1.489(0.713,3.111)	0.289
No	326	29	1	
Chronic medical illness				
Yes	19	2	1.129(0.253,5,039)	0.873
No	398	38	1	
(*significant at p value less than 0.05)				

5.5. Factors associated with LBW

Variables that showed significant association in binary logistic regression model were trimester for first ANC visit, type of pregnancy, extra meal during pregnancy and iron/folic acid supplementation. These variables were entered in to the multivariate logistic regression model to control confounding, and they showed significant association with low birth weight.

Women who have a history of ANC visit in the last three months were seven times more likely to give birth to LBW infant when compared to those attend ANC at first trimester (AOR=7.407, 95%CI=1.148, 47.794). Mothers with planned pregnancy were three times less likely to deliver LBW infants (AOR=0.302, 95%CI=0.094, 0.972). Similarly those mothers who took additional diet during the current pregnancy have four times less likely to deliver LBW infants than mothers who were not took additional diet during the current pregnancy (AOR=0.249, 95%CI=0.064, 0.960). Mothers who supplemented with iron/folic acid were three times less likely to deliver LBW infant than mothers who were not supplemented with iron/folic acid (AOR=0.302, 95%CI=0.092, 0.991). (Table 5)

Table 5. Bivariate and multivariate logistic regressions of selected variables in relation to low birth weight among public Hospitals of Addis Ababa, May 2015

Variables	COR(95%CI)	AOR(95%CI)
History of previous small baby		
Yes	3.364(1.360,8.320)	3.569(0.748,17.017)
No	1	1
Current pregnancy type		
Planned	0.218(0.112,0.425)	0.302(0.094,0.972)*
Unplanned	1	1
No of parity		
1	1	1
2-4	1.269(0.615,2.711)	1.392(0.088,22.125)
≥5	2.694(1,085,6.690)	1.310(0.060,28.833)
No of ANC visit for the last pregnancy		
No ANC	1	1
1-3	0.646(0.243,1.718)	0.000
≥4	0.272(0.094,0.791)	0.000
Trimester at 1st visit for the last pregnancy		
1 st	1	1
2 nd	2.271(0.867,5.950)	5.850(0.961,35.606)
3 rd	3.250(1.210,8.730)	7.407(1.148,47.794)*
TT vaccine before or during pregnancy		
Yes	0.433(0.213,0.880)	1.146(0.258,5.101)
No	1	1
Iron supplementation for current pregnancy		
Yes	0.456(0.236,0.879)	0.302(0.092,0.991)*
No	1	1
Extra meal during current pregnancy		
Yes	0.341(0.163,0.716)	0.249(0.064,0.960)*
No	1	1
APH during the current pregnancy		
Yes	2.688(1.234,5.856)	3.110(0.979,14.854)
No	1	1
Sex of the baby		
Female	3.252(1.464,7.226)	2.535(0.726,8.852)
Male	1	1
<i>(* variables that have significant association)</i>		

6. DISCUSSION

In the present study the prevalence of LBW is 8.8 %. This is consistent with studies done in Axum and Laelay Maichew district and Ghana (24, 13). But it is a little bit higher than the prevalence study conducted in Addis Ababa, Jakarta Indonesia (13,18) this inconsistency may be due to difference in the skills of data collectors, study area and methodology and it is lower than the prevalence of LBW from cross sectional studies done in rural Gambia, Jimma, Gonder referral hospital and EDHS 2011 (14,19,21,7) this discrepancy between the finding may be due to the time gap between the study period and was expected as the study was carried out in tertiary care hospitals where many of the pregnant women are referred from different peripheral hospitals and health centers because of high risk pregnancy and in availability of the service. Likewise this finding is not in line with the finding from community based study in Abha city and Saudi Arabia (8,11).The discrepancy of this finding might be explained by the different study area and study design. This finding is not equivalent to the findings from a community based survey of Kersa, East Ethiopia the prevalence of LBW was 28.3 percent (23) this high incidence of LBW is fairly permissible because the study applies to the rural community and the methodology as well.

Similarly, this finding is not comparable to the findings from the prospective study in North Eastern Nigeria (27) where the low birth weight accounted 16.9 %. Besides the difference in methodology, the study setting may be the reason behind. The magnitude of low birth weight in this study setting is not consistent with the findings from a cross sectional survey in Olkalou District Hospital, Central region, Kenya (28) where low birth weight magnitude was found to be slightly higher (12.3%). The difference in the magnitude of low birth weight could be due to the difference in the

setting in which this research was conducted, this study being done in the district referral hospital of Kenya.

In this study trimester at first ANC visit, taking extra diet during pregnancy, pregnancy type and iron/folic acid supplementation were significantly associated with LBW. However parity, number of ANC visit, counseling about diet during pregnancy, sex of the neonate and previous history of low birth weight and APH during the current pregnancy were not identified as a significant determinant factor for LBW.

Timing for ANC booking is one of the determinant factors for LBW. Mothers those who had ANC booking at first trimester have lower risk of low birth weight as compared to those mothers registered for ANC visit during second and third trimester (AOR=7.407, 95%CI=1.148, 47.794). This finding suggested that early ANC visit may help to ensure that interventions occur in a timely manner, thus those mothers at risk for LBW can be identified early enough if good and qualitative prenatal care is made available to them. This may have beneficial impact on intrauterine growth either and early treatment of pregnancy complications, eliminating or reducing modifiable risk factors and is time to intervene activities like nutritional education pregnancy related complications and other adverse outcome of pregnancy. This finding was consistent with various other studies done in different areas (12, 21,24) and not in line with the finding from Gondar 2012 (19).

Number of ANC visit of the pregnant mother was not associated with low birth weight. No of ANC visit only not adequate rather it emphasize on the adequacy and quality of ANC. This is consistent with the study done in the university of Gondar referral hospital (20). However this study is not in agreement with the study done in other area (13, 14, 21, 24, 28). There was also no significant association with parity of the mother with low birth weight which is in line with the finding from a

case control study in Dhulikhel hospital Nepal (8). But, this finding is not in line with the finding from India and Sirte city Libya (12,14). This may be due to the small sample size and study area variation and the skills of the data collector.

The present study revealed that infants born from mothers who did not plan the current pregnancy were more likely to deliver LBW baby than those mothers who have plan (AOR=0.302, 95%CI=0.094, 0.972). This might be attributed to less intake of nutritious diet during pregnancy than mothers with planned pregnancy and gained inadequate weight during pregnancy. This finding was in line with the finding in from other study (24). But it is not in line with the finding from Gondar, 2012 (19).

Intake of iron supplements during pregnancy was also found to have a protective effect with respect to LBW (AOR=0.302, 95%CI=0.092, 0.991). Women can develop iron deficiency anemia from the loss of blood during menstruation and from repeated pregnancies; it can also be caused by lack of iron in the diet. During pregnancy, women may develop anemia because the growing fetus draws upon the mother's iron for the development of red blood cells and other tissues. Intake of iron supplements during pregnancy was also found to have a protective effect with respect to LBW. This finding is consistent with the findings of some other studies on iron supplementation and pregnancy outcome (12). Iron supplementation during pregnancy protects a woman from becoming anemic because the required amounts may not be supplied from dietary intake during this period.

This study also found that not taking additional diet during pregnancy was found to a risk factor for low birth weight (AOR=0.249, 95%CI=0.064, 0.960). Nutrition and weight management before and during pregnancy has a profound effect on development of infants. This is a critical time for healthy fetal development as infants rely heavily on maternal stores and nutrients for optimal growth and health outcomes in later in life. This finding is similar with the study done in other area (19), and

not in line with the finding from a case control study in Dhulikhel Nepal and community based survey in Laelay Axum and Michew district (8, 24). These discrepancy might be due to differences in study population, the time gap between the study periods, geographical location, and the method used.

7. STRENGTH AND LIMITATION OF THE STUDY

7.1. Strength

- Direct measurement of newborns weight was done in contrast to history based estimation.

7.2. Limitations

- Cross- sectional study design was used in the present study. This type of study design shows the exposure and outcome at the same point in time, so that we cannot formulate a cause and effect relationship.
- Private health facilities were not included therefore findings a not generalizable to mothers in Addis Ababa and as the study was conducted in referral hospitals most of the time pregnant mothers were referred from the periphery health facilities.
- Seasonal variations

8. CONCLUSION AND RECOMMENDATIONS

8.1. Conclusion

The magnitude of low birth weight is 8.8 %. LBW was associated with trimester at first ANC visit, unplanned pregnancy, iron/folic acid supplementation and extra meal during pregnancy.

8.2. Recommendation

- The health facilities should provide intensive health education about prevention of unplanned pregnancy in order to prevent LBW.
- The health facilities should provide nutritional education during pregnancy and prevention and proper management of risk.
- The health facilities should provide awareness creation on the timing for early ANC seeking intervention.
- In order to prevent LBW, mothers should be advised to take iron supplements during pregnancy.
- The policy makers should be strengthening the maternal and child health services and the recent focused ANC program.

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10. ANNEXES

10.1. Conceptual framework

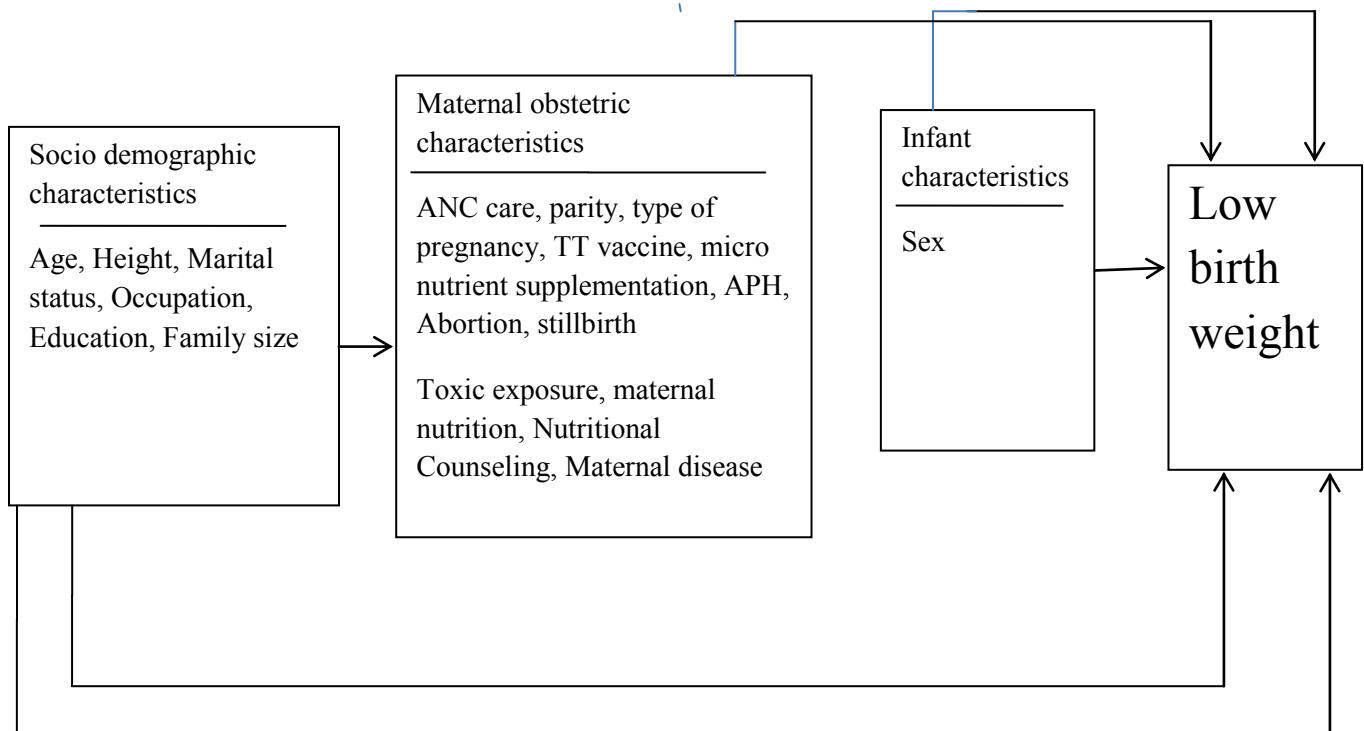


Fig 1 Conceptual framework of factor related to low birth weight among public hospitals of Addis Ababa, June 2015 (developed by reviewing different literatures)

10.2. English version information sheet and Consent form

10.2.1. Part I Information sheet

Good morning/afternoon, my name isI am second year master's degree student at Addis Ababa university collage of health science department of public health I am here to study the factors associated low with low birth weight among public hospitals of Addis Ababa. I am glad to inform you that, you are one of the eligible participant and you are well come to take part in this study. I am also delighted to tell you I am relay value your participation as your individual contribution to the study output will definitely very significant, however it is up to decide whether to participate in this study or not. I would like to inform you that will not write in this study anywhere in this study.

Are you willing to participate in this study 1.Yes.....

2. No.....

10.2.2. Part II Consent form

Now, I will ask you some questions that may inform the principal investigator about your personal back ground and some of you and your family activities. Although I feel some of the questions are private, your honest and genuine response will highly be appreciated and credited by the principal investigator as it will enable to make realistic analysis and to propose a very practical suggestion if you don't understand any of the question; you have the right to skip it. You are also entitled to quite your participation at any given moment. This interview may take about 15-20 minute.

Interviewer name

Signature.....

Address of the supervisor

0912664385

Address of the principal investigator

+251-912-60-69-81

Email hirut5454@gmail.com

10.3. English questionnaires

Table 3. Socio demographic characteristics

I would like to remind again that some of the following questions may be sensitive and personal; however they are very important to the research. If you don't understand any of the questions please ask me for clarification. Know I am asking some questions regarding your socio demographic information.

No	Questions	Answers	Skip to
101	In what month and year were you born?	1.month----- 2.dont know month----- 3.year----- 4.Don't know year-----	
102	Have you ever attended school?	1.yes 2.no	
103	What is the highest level of schooling you attend?	1.illiterate 2.primary 3.secondary 4.Collage and above	
104	How many centimeters is your height? (If she doesn't know measure the height)	1.-----in centimeter	
105	Are you currently married or living together as if married?	1.Yes, currently married	

		2.yes living with man 3.No, not in a union	
106	What is your current occupation that mainly does?	1.government employee 2.private employee 3.merchant 4.student 5.military 6.house wife 7.others	
107	What is your husband's current occupation?	1.government employee 2.private employee 3.merchant 4.student 5 military 6. daily laborer 7.others	
108	What is your house hold family size?		

Table 4. Maternal obstetric and neonatal characteristics

I would like to remind again that some of the following questions may be sensitive and personal; however they are very important to the research. If you don't understand any of the questions please ask me for clarification. Know I am asking some questions regarding your Maternal obstetric and neonatal information

No	Questions	Answer	Skip to
101	How many times did you get birth?	1.first time 2.second time 3.third time 4.fourth time 5.fith and above	
102	When you get pregnant did you plan to get pregnant at current time?	1.yes 2.no	
103	Have you ever had a pregnancy was miss carried?(before seven month)	1.yes 2.no	
104	Have you ever had a pregnancy was still birth?	1.yes 2.no	
105	Have you ever had bleeding after seven months of pregnancy?	1.yes 2.no	
106	When did your last menstrual period starts?		
107	How many months pregnant when you start antenatal care for this	_____	

	pregnancy?(record in month)		
108	How many times did you receive antenatal care during this pregnancy?	1.number of times----- 2.Don't remember 3.no ANC	
109	During this pregnancy have you got nutritional counseling during pregnancy	1.yes 2.no	
110	During this pregnancy, did you take additional diet than the usual?	1.yes 2.no	
111	During this pregnancy or any time, were you given an injection in the arm to prevent the baby from getting tetanus that is convulsion after birth?	1.yes 2.no	
112	During this pregnancy, were you given or buy any iron tablet?	1.yes 2.no	
113	During this pregnancy did you use any type of substance(cigarette, chat, shish a)	1.yes 2.no	
114	Have you ever taken a drink that contains alcohol?	1.yes 2.no	
115	Do you have any chronic medical illness?		If yes list them
116	Have you ever had history of small		

	baby?(mother's perception)		
117	Birth weight of the child	-----in grams	
118	Sex of the child	1.male 2.female	

10.4. Amharic version information and consent form

በአዲስ አበባ የሚገኙ የተመረጡ የመንግስት ሆስፒታሎች ውስጥ ለሚወለዱ እናቶች የተዘጋጀ መጠይቅ

ጤና ይስጥልኝ :: እኔ ----- እባላለሁ :: በአዲስ አበባ ዩንቨርሲቲ በህክምና ፋኩልቲ በህብረተሰብ ጤና የትምህርት ክፍል በህብረተሰብ ጤና የሁለተኛ አመት የማስተርስ ድግሪ ተማሪ ስሆን በዚህ ሆስፒታል ውስጥ የሚወለዱ ህፃናት ከብድታቸው አነስተኛ ሆኖ የሚወለዱበትን ምክንያት ለማወቅ ጥናት እያደረኩ ነው :: በዚህ ጥናት ውስጥ በመሳተፍ ቀጥተኛ የሆነ ጥቅም የሌለው ሲሆን በጥናት ውስጥ በመሳተፍ የሚመጣ ምንም አይነት ችግር ወይም ጉዳት የለውም :: ጥናቱ ውስጥ መሳተፍ የሚፈልጉ እናቶች በፈቃደኝነት ላይ ብቻ የተመሰረተ ተሳትፎ መሆኑን መገንዘብ አለባቸው :: ባለመሳተፍ ምክንያት የሚመጣ ምንም አይነት ቅጣት የለውም ፤ ነገር ግን ከእርሶ የምናገኘውን መረጃ አስፈላጊ ስለሆነ ጥናት ውስጥ በፈቃደኝነት እንደሚሳተፉ ተስፋኢደርጋለሁ ::

በዚህ ጥናት ለመሳተፍ ፈቃድኛ ነዎት 1.አዎ-----

2.አይደለሁም-----

የስምምነት ቅጽ

አሁን ፈቃደኛ ከሆኑ አንዳንድ የጥናቱ አድራጊን ሊጠቅሙ የሚችሉ አንዳንድ እችላለሁና ቤተሰብዎን የሚመለከቱ ጥያቄዎችን እጠይቅዎታለሁ::ስለሆነም አንዳንድ ጥያቄዎች የግልና ለመመለስ የሚከብዱ ቢሆንም የእርስዎ መልስ ለጥናቱ አድራጊ ትክክለኛ ምድመድሚያ ላይ ለመድረስ ወሳኝ ነው:: እርስዎ የምናገኘው ማንኛውም አይነት መረጃ ከእኛ ጥናት ውስጥ ከምንሳተፈው ሰዎች ውጪ ለማንኛውም ሶስተኛ ወገን እንደማይደርስ እናምናለን::የተጠበቀ ቀንደሚሆን ላረጋግጥላችሁ እወዳለሁ :: መጠየቅ ለሚፈልጉት ማንኛውም አይነት ግልጽ ያልሆነ ጥያቄ መጠየቅ የሚችሉ ሲሆን ለመመለስ ፈቃደኛ ያልሆኑባቸው ንያለመመለስ ስወይንም ደግሞ የማቆምመብትዎ የተጠበቀ ነው::የጥናቱ መጠይቅ ቢበዛ ከ15 እስከ 20 ደቂቃ ይወስዳል ::

ቃለመጠይቁን የሚያደርገው ሰው ስም-----

ፊርማ.....

የተቆጣጣሪ አድራሻ

0912664385

የጥናቱ ባልቤት አድራሻ

0912606981

ኢ.ሜል hirut5454@gmail.com

10.5. Amharic questionnaires

የእናተየዋ ናየህጻኑን ማህበራዊና አካባቢያዊ ሁኔታዎች

ይህ መጠይቅ የእናተየዋን ናየህጻኑን ማህበራዊና አካባቢያዊ ሁኔታዎች የሚገልጽ ሲሆን ብውስጡ አንዳንድ ለመመለስ የሚከበዱ ሆኑ ይችላሉ ነገር ግን ግልጽ እንዲሆኑሉት ጥያቄ መጠየቅ የሚችሉ መሆኑን አየገለጽኩ ወደ ጠያቂዎቼ መራለሁ

ተ.ቁ	ጥያቄዎች	መልሶች	ወደሚቀጥለው ጥያቄ
101	የተወለድኸበት ዓ.ም ና ወር መቼ ነው?	1. ወር 2. ወሩን አላውቀውም 3. አመተ ምህረት 4. ዓ.ም አላውቀ	
102	ትምህርት ተምረሽ ታውቁያለሽ?	1. አዎ 2. አላውቅም	
103	እስከ ስንት ድረስ ተምረሻል? (ለከፍተኛ ትምህርት ዲግሪና ከዚያ በላይ ይመዝገብ)	1. ማንበብና መጻፍ የማትችል 2. የመጀመሪያ ደረጃ 3. ሁለተኛ ደረጃ 4. ኮሌጅና ከዚያ በላይ	
104	ቁመትሽ ስንት ነው? (የማታውቀው ከሆነ በመለካት ይመዝገብ)	-----በሴንቲ ሜትር	
105	በአሁኑ ጊዜ እንደ ባልና ሚስት ተጋብታችሁ ወይም አብሮሽ የሚኖር ሰው አለ?	1. አዎ አግብቻለሁ (ህጋዊጋብቻ) 2. አዎ እንደባልና ሚስት አብረን እንኖራለን 3. አብሮኝ የሚኖር የለም	
106	አብዛኛውን ጊዜ የምትሰራው ስራ ምንድን ነው?	1. የመንግስት ስራ 2. የግል ተቀጠሬ 3. ንግድ 4. ተማሪ 5. ወታደር 6. የቤት አመቤት 7. ሌላ ካለይጠቀስ	
107	ባለቤትሽ በአባዛኛው የሚሰራው ስራ ምንድን ነው?	1. የመንግስት ስራ	

		2. የግል ተቀጠሮ 3. ንግድ 4. ተማሪ 5. ወታደር 6. የቀንስራ 7. ሌላ ካለይጠቀስ	
108	የቤተሰባችሁ አባላት ብዛት ስንት ነው?	-----	

የእናተየዋን የማህጸንና የህጻኑን ሁኔታዎች

ይህ መጠይቅ የእናተየዋንና የማህጸንና የህጻኑን ሁኔታዎች የሚገልጽ ሲሆን በውስጡ አንዳንዶቹ ለመመለስ የሚከበዱ ሊሆኑ ይችላሉ ነገር ግን ግልጽ እንዲሆኑላቸው ጥያቄ መጠየቅ የሚችሉ መሆኑን እየገለጽኩ ወደ ጠያቂዎቹ አመራሰሁ

ተ.ቁ	ጥያቄዎች	መልሆች	ወደሚቀጥለውጥያቂ
101	ለስንተኛ ጊዜ ነው አሁን ስትወልጁ?	1. ልመጀመሪያ ጊዜ 2. ልሁልትገኛ ጊዜ 3. ልሶስተገኛ ጊዜ 4. ለአራተገኛ ጊዜ 5. ልአምስትና ከዚያ በላይ	
102	የአሁኑን እርግዝና አቅደሽ ነበር ያረገዝሽው?	1.አዎ 2.አይደለም	
103	ከአሁን በፊት ሰባት ወር ያልሞላው ውርጃ አጋጥሞሽ ያውቃል?	1.አዎ 2.አያውቅ	
104	ከሰባትወር በኋላ ሞቶ የተወለደ ልጅ አጋጥሞሽ ያውቃል?	1.አዎ 2.አያውቅም	
105	በአሁኑ እርግዝና ከሰባት ወር በኋላ የደም መፍሰስ አደጋ አጋጥሞሽ ያውቃል?	1. አዎ 2. አያውቅም	
106	ለመጨረሻ ጊዜ የወር አበባሽ መፍሰስ የጀመረው መቼ ነው?	1. ቀኑይ ጥቀሱ----- 2. አላስታውስም	
107	በአሁኑ እርግዝናሽ ወቅት የነፍሰጡር ክትትል የጀመርሽው በስንት ወርሽ ነበር?	1.----- 2. አላስታውስም	
108	ስንት ጊዜያህል ክትትል አድርገሻል?	1.----- 2. አላስታውስም	
109	በዚህ እርግዝና ወቅት ስለአምጋጉበሽ ምክር አግገንተሽሃል?	1.አዎ 2.አላገገኘሁም	

110	በዚህ እርግዝና ወቅት ከወትሮ የተለየ ተጨማሪ ምግብ ትወስጇኑ? ነበር?	1. አዎ 2. አልወሰድኩም	
111	በዚህ እርግዝና ወቅት ወይም ከዚህ እርግዝና በፊት በማንኛውም ጊዜ የቲታነስ ክትባት ወስደዋል?	1. አዎ 2. አልወሰድኩ	
112	በዚህ እርግዝና ወቅት የተሰጠሽ ወይም ገዝተሽ የወሰድሽው የደም ማነስ ኪኒን አለ?	1. አዎ 2. የለም	
113	በአሁኑ ጊዜ ሲጋራ ወይም ሌላ አይነት ትንባሆት ጠቀሜያለሽ?	1. አዎ 2. አልጠቀምም	
114	አልኮልነት ያለው መጠጥ ጠጥተሽ ታውቂያለሽ? (ጠላ፣ ጠጅ፣ አለቄ፣ ቢራ፣ ወይን. ወዘተ)	1. አዎ 2. አላውቅም	
115	የታወቀ ህመም አለብሽ?	1.አዎ 2. የለም 1.----- 2.----- 3.----- 4.-----	አዎ ከሆነ በዝርዝር ይመዝገብ
116	ከአሁን በፊት ትንሽ ልጅ ወልደሽ ታውቂያለሽ ወይም ከመጠን ያነሰ (በእናትየዋ አይታ)	1. አዎ 2. አላውቅም	
117	አሁን የተወለደው ህጻን ክብደት	በግራም-----	
118	አሁን የተወለደው ህጻን ጾታ	1. ወንድ 2. ሴት	

