ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCE DEPARTMENT OF NURSING AND MIDWIFERY POSTGRADUATE NURSING PROGRAM

ASSESMENT OF LATE INITIATION OF ANTENATAL CARE AND ASSOCIATED FACTORS AMONG ANTENATAL CARE ATTENDEES IN SELECTED HEALTH CENTERS OF ADDIS ABABA, ETHIOPIA, 2015

BY SERAWIT YILALA

A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES OF ADDIS ABABA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF SCIENCE IN MATERNITY AND REPRODUCTIVE HEALTH NURSING

June, 2015

Addis Ababa

Ethiopia

ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCE DEPARTMENT OF NURSING AND MIDWIFERY POSTGRADUATE NURSING PROGRAM

ASSESSMENT OF LATE INITIATION OF ANTENATAL CARE AND ASSOCIATED FACTORS AMONG ANTENATAL CARE ATTENDEES IN SELECTED HEALTH CENTERS OF ADDIS ABABA, ETHIOPIA, 2015

BY SERAWIT YILALA

ADVISOR; WORKNESH SINSHAW (MSC RH&PH, BSC, RN)

June, 2015

Addis Ababa,

Ethiopia

APPROVED BY THE BOARD OF EXAMINERS

This thesis, by Serawit Yilala is accepted in its present form by the board of examiners as satisfying thesis requirement for the degree of master in maternity and reproductive health nursing.

Internal examiner:

_____ _____ _____ ____/____/____

Full name Rank Signature Date

Research advisor:

_____ _____ _____ ____/____/____

Full name Rank Signature Date

Chair of department

_____ _____ _____ _____/_____/___

Full name Rank Signature Date

June /2015

Addis Ababa

Acknowledgment

First of all I would like to thank Nursing and Midwifery Department; College of Health Sciences, Addis Ababa University for its academic instructions and providing support to undertake this research.

I would like to extend my thanks to my advisor Worknesh Sinshaw (MSc, BSc, RN) for her unreserved advice while developing this thesis. I would also like to thank other committee members

I acknowledge the administrators and staff of the Addis Ababa City Administration Health Bureau, the respective sub-city health departments and health centers participated on the pre-test and actual study.

I am also delighted to acknowledge the pregnant women and the data collectors who participated in this study.

I would like to thank Hamlin fistula Ethiopia organization and Hamlin collage of midwives for sponsoring me to commence my education.

I am also delighted to acknowledge Ato Minilik Tsega for his assistance on data management and statistical analysis

Finally I would like to thank my family members, relatives and friends who supported me in one way or another to possess my studies and this research.

Abstract

Background:-Antenatal care is a type of care given for women during pregnancy and is a key strategy for reducing maternal and neonatal morbidity and mortality. The goal of ANC is to prevent health problems of pregnant women through detection of complications and treatment of pregnancy related illness. Thus, late antenatal attendance makes difficult to implement effectively the routine ANC strategies that enhance maternal wellbeing and good prenatal outcomes.

Objective:-The objective of this study is to assess the prevalence of late initiation of antenatal care and associated factors among antenatal care attendants in selected Health Centers of Addis Ababa, Ethiopia.

Methodology:-A quantitative cross-sectional institution based study was used to assess late initiation of antenatal care and factors associated with it in selected 10 health centers of Addis Ababa. Four hundred twenty six pregnant women who attend ANC were included in this study. Data was entered, coded and analyzed using SPSS, version 20. Descriptive statistics like frequencies and percentages was used to present the results.

Result:-Out of 407 pregnant mothers included in this study, 267 (65.6%) pregnant mothers started their first ANC visit early while the remaining 140 (34.4%) pregnant mothers started ANC late. In both cases, the timing of the first ANC booking ranged from 4 weeks to 32 weeks of gestation with mean timing of 13 weeks with standard deviation of 5.47 weeks. Multivariate analysis revealed that respondents with the educational level of high school and above, who had knowledge on the importance of ANC, those who received advise from HEW and media, those advised to be booked within 12 weeks of gestation and those who reasoned the time of booking was appropriate were more likely to be booked early compared to their counter parts (AOR= 3.346, 95%, CI: 1.618, 6.918), (AOR = 2.666, 95% CI: 1.266, 5.616), (AOR= 3.716, 95% CI: 1.671, 8.266), (AOR= 20.928, 95% CI: 4.499, 97.347), and (AOR= 14.765, 95% CI: 7.109, 30.667), respectively.

Conclusion:-The results of this study indicated that two-third of the respondents had started their ANC within the recommended time (65.6%) and the rest one-third were booked late (34.4%). The Respondents educational level, knowledge on the importance of ANC service utilization, Source of the information which contributed to book timely for the current pregnancy and the advice given on the time of first ANC booking are significantly and positively influenced early initiation of ANC in Addis Ababa. However, there is still more work is required to fully achieve ANC utilization in the recommended time.

Key words: Antenatal care, late initiation, timely booking, pregnancy, Addis Ababa

Table of contents **Page**

List of tables

List of figures

Acronyms

AAU	Addis Ababa University
AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal care
AOR	Adjusted Odds Ratio
CSA	Central Statistical Agency
CHW	Community health worker
EDHS	Ethiopian Demographic and Health survey
FANC	Focused Antenatal Care
FMOH	Federal Ministry of Health
HC	Health Center
HEW	Health Extension Worker
HIV	Human Immunodeficiency Virus
MCH	Maternal and Child Health
OR	Odds Ratio
SSA	Sub Saharan Africa
STI	Sexually Transmitted Infection
TBA	Traditional Birth Attendant
MMR	Maternal Mortality Rate
WHO	World Health Organization
SPSS	Statistical Package for Social Science

CHAPTER I

1. Introduction

1.1.Background

Maternal and neonatal morbidity and mortality have continued to be a major problem in developing countries despite several efforts were made to reverse the trend. Sub-Saharan Africa is still the riskiest region in the world for dying of complications in pregnancy and childbirth (1). Globally, the total number of maternal deaths decreased by 45% from 523 000 in 1990 to 289 000 in 2013. Similarly, global MMR declined by 45% from 380 maternal deaths per 100 000 live births in 1990 to 210 in 2013 yielding an average annual decline of 2.6%. Developing countries account for 99% (286 000) of the global maternal deaths with sub-Saharan Africa region alone accounting for 62% (179 000) (2).

Ethiopia is one of the countries with high maternal mortality. The MMR was 990 per 100,000 in the year 2000; it was 740 per 100,000 live births in 2005 and 420 per 100,000 in 2013. (2). Research has shown that most of the maternal and neonatal deaths are avoidable. Antenatal care is one of the key strategies for reducing maternal and neonatal morbidity and mortality directly through detection and treatment of pregnancy related illnesses, or indirectly through detection of women at risk of complications of delivery and ensuring that they could be deliver in a suitably equipped facility (3).Early ANC booking and regular follow-up of services usually provides opportunities for delivering health information and interventions (i.e., via early detection of modifiable preexisting medical conditions like Heart Disease, Diabetes Mellitus, Hypertensive disorders, HIV/AIDS, and severe anemia) that can

significantly enhance the health of the mother and fetus. More over antenatal care provides an important opportunity for discussion between a pregnant woman and a health care provider about health behavior during pregnancy and recognizing complications that may arise, and about delivery plan that will meet the needs of the individual woman. (4).

In the year 2001, the WHO issued guidance on a new model of ANC called goal-oriented or focused ANC, for implementation in developing countries. Within this new strategy, WHO recommends four antenatal care visits in low risk pregnancies and prescribes the evidence-based content for each visit. The visit is used to classify pregnant women into two groups based on previous history of pregnancy, current pregnancy state, and general medical conditions. These are those eligible to receive routine ANC (basic component) and the others are those who need special care of ANC. The first visit is recommended to be during first trimester; the second, close to week 26; the third around week 32; and the fourth and final visit between weeks 36 and 38 (5).

WHO recommended that all pregnant women should receive prenatal care at an early stage of pregnancy to prevent early complication related to pregnancy and provision of prenatal care like; tetanus toxoid immunization, intermittent preventive treatment of malaria, de-worming, iron and folic acid (6).In addition to this pregnant women should be offered screening for HIV infection and syphilis to reduce mother-to-child transmission (7, 8). Other interventions that can be linked to early ANC include ultrasound screening to identify congenital abnormalities, provision of information about birth preparedness and complication readiness plan, nutrition, family planning, breastfeeding, and health benefits of delivery with the assistance of skilled health provider.

1.2.Statement of the problem

According to the systematic review made on antenatal care as a means of increasing birth in the health facility and reducing maternal mortality, the minimum antenatal care visits recommended by WHO (4 visits) was possible only for less than about one-third of the pregnant women in some SSA countries like Niger (15%), Ethiopia (19%), Chad (23%), Burundi (33%), Mali and Rwanda (35% each) (9). Low prenatal coverage, few visits, and late booking are common problems throughout SSA posing difficulty in accomplishing the WHO recommendation.

In Ethiopia ANC services are provided free of charge in most government health institutions and at a little bit higher cost in private clinics. Despite to this, the EDHS 2014 report indicated that, about four in every ten Ethiopian women (43%) did not receive any antenatal care for their last birth in the five years preceding the survey. Seventeen percent of women made their first ANC visit before the fourth month of pregnancy where urban women made their first ANC visit more than a month earlier than rural women (10). The report revealed that there is still high prevalence of late ANC initiation in both urban and rural settings of the country.

When women initiate ANC late, they have an increased risk of poor pregnancy outcomes, maternal and neonatal mortality. Consequently pregnant women are missing the intended benefits of ANC which include early identification and management of pre-existing health conditions and complications of pregnancy to prevent life-threatening maternal and neonatal condition. Thus, late antenatal attendance makes difficult to implement effectively the routine ANC strategies that enhance maternal wellbeing and good prenatal outcomes. In this regard, the identification of factors associated with late ANC attendance is a major public health

objective which could help come up with strategies that could improve the quality ANC service provision and timing of first ANC attendance.

1.3. Significance of the study

Timely booking for ANC service have a great importance in seeking early screening for HIV infection and syphilis to reduce mother-to-child transmission and include ultrasound screening to identify congenital abnormalities. In addition to these, pregnant women should be offered other interventions that can be linked to early ANC components like provision of information about birth preparedness and complication readiness plan, nutrition, family planning, breastfeeding, and health benefits of delivery with the assistance of skilled health provider.

This study aimed at finding out factors influencing late initiation of ANC in Addis Ababa since limited study has been conducted to establish affirmative factors responsible for late ANC among women of Addis Ababa. The results of this study have implications for policy making, health care providers, educators and researchers, to improve or strengthen policies related to provision of ANC. The study would hopefully be used as base line information for concerned governmental bodies, nongovernmental organizations or health service providers to plan and act in motivating mothers to use to have ANC earlier and institutional delivery service so that maternal and infant mortality and morbidity shall be reduced. Moreover it is hoped that information obtained from this study will add to the existing body of knowledge in the area of maternal and child health. Consequently, the findings might help to enhance family and social support system for pregnant women in communities.

CHAPTER II

2. Literature Review

2.1.Focused antenatal care and coverage

Focused ANC contributes to good pregnancy outcomes. Benefits of FANC in influencing outcomes of pregnancy depend to a large extent on the timing and quality of FANC. FANC consists of early start of ANC with the first antenatal visit in the first trimester, followed by the second visit in the second trimester and two visits in the third trimester if the woman does not have any problem (11). Timely initiation of ANC has the following benefits: establishment of a helping relationship, provision of individualized health promotion messages, early identification, examination and management of maternal conditions which may become life-threatening (like HIV, malaria, syphilis, sexually transmitted diseases, anemia, heart disease, diabetes, malnutrition, tuberculosis and essential hypertension), or risk factors (like vaginal bleeding, abnormal fetal growth or abnormal fetal position) and preparation for birth and care of the newborn (12). Women who initiate ANC late miss out these intended benefits of FANC and encounter negative effects like lack of proper information and late identification and management of life threatening maternal and neonatal conditions. Late ANC is when a pregnant woman book for ANC after 12 weeks of pregnancy (12).

A cross- sectional study conducted in Zambia on the factors of late antenatal care booking among rural and urban women indicated the prevalence of late ANC attendance was as high as 72.0 % and 68.6% in rural and urban districts respectively (3). Another study in Durban,

South Africa indicated that 23.4% were “early bookers”, 47.9 were “late bookers” and 28.7% were “un-booked” for ANC. The Majority of women presented for formal “booking” late in pregnancy 47.9% booked at gestational age of six month after the last menstrual period (13)

According to the reports of EDHS 2014 study on the coverage of antenatal care, 40 percent of pregnant women received antenatal care from a skilled provider (34 percent from a nurse or midwife, and 6 percent from a doctor). Another 18 percent of women received ANC from a HEW. According to the report, the coverage of antenatal care is improved compared to the 2011 EDHS where 34 percent received antenatal care from a skilled provider. Trend data on the percentage receiving antenatal care from a skilled health provider shows that there was an impressive 48 percent increase in skilled antenatal care over the last fifteen years. More over about four in every ten Ethiopian women (43 percent) did not receive any antenatal care for their last birth in the five years preceding the survey. This represents a marked decline from three years ago when almost six in ten (57 percent) pregnant women did not receive any antenatal care (10).

A Cross Sectional study conducted at Mekelle city, indicated that 48% made their first visit in their first trimesters, and 42.4% in their second trimester of pregnancy and only 1.8% of women attended antenatal care in their third trimester of pregnancy (14). Similarly cross sectional study on timing of first Antenatal care booking at public health institutions in Addis Ababa, Ethiopia, reported that, the proportion of respondents who made their first ANC visit within the recommended time (before or at 12 weeks of gestation) is 246 (40.2%) while those who booked late (after 12 weeks of gestation) were 366 (59.8%). The timing of first ANC booking ranges from 1st month to 9th months of gestation (15).

2.2.Factors associated with late initiation of ANC

The reviewed literatures reported that, socio-demographic variables like maternal age, marital status, maternal education, occupation, ethnicity, religion, family income, residence, accessibility of service were found to be predictors that either positive or negative influence on timing of ANC booking. In addition to these obstetrics history, past and current experience of service utilization and awareness of care and pregnancy related complications have also similar influence on ANC booking.

The study conducted at Kembata-Tembaro Zone in Southern Ethiopia, in public health centers, indicated that, the prevalence of late entry to antenatal care was 68.6%. On this study multivariate analysis revealed that age, maternal education, family income, parity, previous utilization of antenatal care and type of pregnancy remained significant factors influencing late booking. The findings of this study showed that most women book antenatal care late. This seems to be because antenatal care is viewed primarily as curative rather than preventive in the study population (16)

2.2.1. Socio-demographic

a. Maternal Age

Younger and older women are different in their usage of maternal health services. In a cross-sectional survey of 306 pregnant women of urban dwellers in Zambia indicated that the majority of the participants were in the age category of 20-29 years, representing 52.0% of the study population (3). A study done on timing and factors associated with first antenatal care booking among pregnant mothers in Gondar Town; North West Ethiopia, result of logistic

regression analysis showed that pregnant mothers aged 25 and below were nearly two times more likely to commence ANC within the recommended time compared to their counter parts. Likewise mothers whose age at marriage above twenty years were two times more likely to start their ANC within the first three months of pregnancy than those who married during their teens (17). A cross sectional study conducted on timing of first Antenatal care booking at public health institutions in Addis Ababa, Ethiopia, reported that, out of 612 pregnant woman attending ANC, the majority of them(440pregnant women) were in the age group of 20 – 29. Out of these 184 (42 %) were booked within time (12 weeks of gestation and before) and the rest 256 (58%) booked late (After 12 weeks of gestation) (15).

Similarly antenatal care from a skilled provider is more common among women less than age 34 than among women age greater than thirty five (10). In contrary to the above, a study conducted in Bangladesh from prospective survey to assess maternal morbidity, reported that the older ages were more likely to use ANC (18).

b. Maternal Education

Education is found to be the most determinant factor in maternal health. Compared to women of low literacy level, educated women bear fewer children and achieve better child survival, because they avoid early marriages, teenage pregnancy, and high parity because they attend antenatal and postnatal more frequently. A study done in Kwale District, Kenya revealed that women with secondary education or above were more likely to attend for ANC (19). According to EDHS 2014 report, there is a direct relationship between a woman's education level and antenatal care from a skilled provider. The findings revealed that among non-

educated women 30%, among women who are primary educated 49%, secondary educated 79% and more than secondary 95.8% received ANC from skilled health provider (10).

A cross-Sectional Study done at University of Gondar Hospital, Northwest Ethiopia, indicated that, those having formal education were 1.06 times more likely to book earlier compared to those who cannot read and write. In this study, women having formal education were more likely to initiate ANC visit earlier than their counterparts. This could be explained by the fact that women with secondary school or higher education were more likely to attend ANC (4). Another study conducted in Tanzania indicated that women with primary education and above were twice more likely to be booked timely for ANC visit and acquire knowledge on birth and complications (20).

c. Marital status

The community based cross-sectional study conducted at Ayder Kebelle, Mekelle City to assess antenatal care utilization among child bearing mothers indicated that, approximately 4 (1.8%) of widowed and divorce women did not utilize ANC and 9(4%) married women from 190(85.3%) women's did not attend Antenatal care (14). A cross sectional study conducted to assess the activities of ANC clinics at a training health center in Debark, Northwest Ethiopia reported that married women attend ANC more commonly than divorced or widowed ones. Housewives and married women constituted the great majority of the attendees. This may reflect the general socio-demographic characteristics of the population (21).

d. Income

A cross-sectional study conducted in Kembata-Tembaro Zone, Southern Ethiopia, in antenatal clinic at Public Health Centers, showed that, among socio demographic factors, monthly income found to be a strong predictor for the late utilization of ANC. Among pregnant women who had a monthly income of less than 1000 ETB 229 (59.1%) attend ANC late as compared to those whose monthly income was greater than 1000 ETB 36 (9.3%) (16).

In other cross sectional study conducted in Addis Ababa public health centers revealed that, physical and financial accessibility alone cannot assure effective service utilization of ANC (15).

e. Accessibility of antenatal care services

Physical accessibility of health services has been an important determinant of utilization of health services in developing countries. WHO reported that distance from MCH services, and the time and the cost involved in traveling to services are significantly associated not only with ANC use but also with the use of institutional delivery, postnatal and infant care services (22). A Study conducted in Kalabo District of Zambia on maternity services indicated that, distance is a significant factor affecting delay to decide to seek care from health facilities. It also influences the delay caused by the travel time from home to the clinic (3).

2.2.2. Other factors

a. Partner involvement in decision making

Traditionally, maternal health care services have focused on women, with very little male involvement. Given that male involvement in maternal health care is a relatively new approach, and it touches on the sensitive nature of gender roles related to culture, social norms, values and beliefs; understanding people's perceptions about the program is critical for its success (23). A cross-sectional survey conducted among 2178 married males in Kathmandu, Nepal about involvement of males in antenatal care, highlighted that the couples in which male had a higher level of education were better informed and so were likely to be involved on birth plan, and were more socially or financially empowered to make the necessary decisions. This study revealed that men who were knowledgeable and obtained health education were more likely to accompany their spouses for ANC visit. Men with higher age, uneducated or had primary level education, had less involvement on ANC visit.This study highlighted that the reasons said by males for not to accompany their partners on ANC visit were: the belief that it is a woman's duty, being preoccupied with work, and a feeling of embarrassment. In addition, cultural diversities might affect a change in this attitude (24). A cross-sectional study carried out at the Obstetrics and Gynecology Department of Federal Medical Centre, Makurdi, Benue State of Nigeria showed that 82.6% of the women jointly decided with their spouses to book for ANC. Only few of the women reported lack of permission from their husbands for early initiation of ANC (25).

b. Attitude of health providers

A qualitative study conducted in Lilongwe, Malawi to determine factors influencing late ANC reported that, good health worker attitude or establishment of good relationship was cited by the key informants as some of the factors that can encourage women to start ANC in their areas and that bad health worker attitude can prevent women from starting ANC in time. The key informants felt that other midwives at the ANC were friendly while few midwives are harsh, not friendly especially when the woman is of high parity. Sometimes women are discouraged to go to ANC even though there are good midwives at the antenatal clinic because they are attended by unqualified personnel like the female ward attendants. It also came out clearly that even though women can meet midwives with good attitude at the ANC but they can be discouraged to start ANC by the behavior of midwives in the labor ward, who are harsh, unfriendly, rude, unconcerned and do not give any attention to women than the TBAs. As such, pregnant women choose to go for ANC late to get a card in order to be attended at the health facility when they are sick then go to the TBA for delivery as the TBA is friendly and attentive to their problems (26).

2.2.3. Obstetric factors

a. Parity

A facility based cross-sectional study conducted to assess factors associated with late initiation of antenatal care among pregnant women attending antenatal clinic at Kembata-Timabaro zone of Southern region, reported that among independent predictors parity has significant association with late initiation of ANC. Of the total respondents of this study,

24.2% of respondents were parity zero, while the rest 75.8% were parity one and above. The study revealed that women with one parity and above were more likely to register lately compared to those who have no parity (16). Another study conducted in Addis Ababa reported that as parity increases the experience of timely booking decreases (15). In contrary to this, another study showed that parity did not significantly influence gestational age at booking for ANC (25).

b. Previous obstetrics history

Facility based cross-sectional study conducted at the University of Gondar Hospital reported that, among the proportion of respondents who have had their first visit within the recommended time in the preceding pregnancy was 47.3%, while 56.9% of these pregnant women who booked ANC within the recommended time in the previous pregnancy were booked within the current pregnancy. Accordingly, those who visited ANC earlier in former pregnancy were more likely to book earlier for their current pregnancy showing that past experience of early ANC service utilization demonstrated timely booking in the current visit. In addition to this, the current study showed that those women who had no history of abortion were more likely to book earlier than women with abortion history. This depicted that women were appropriately informed on time of booking from counseling and health education sessions during previous pregnancies (4). In contrary to this the study conducted in public health center in Addis Ababa indicated that, pregnant women with past experience of ANC service utilization did not demonstrate timely booking of the service indicating that pregnant women were not informed about the appropriate time of booking or the information provided might be misleading (15).

c. Unintended pregnancy

In a cross-sectional survey of 306 pregnant women of urban dwellers in Zambia indicated that the intention to get pregnant was an important factor in their study. In contrast to women who planned their pregnancy, women who fell pregnant unintentionally were more likely to start ANC late. Younger women with unplanned pregnancy lacked information about ANC resulting in late attendance. They concluded that wanted pregnancies are more cared for by pregnant women and their spouses; this enable women to book for ANC timely (3).

Cross-sectional study conducted in selected Governmental Health Centers in Kembata-Tembaro Zone revealed that women with unplanned pregnancy were almost four times booked later compared to respondents with planned pregnancy(16).

2.3. Conceptual Framework

According to Anderson and Newman Socio-behavioral model which was used to conceptualize this study, individual's access to and use of health services is considered to be a function of three characteristics (27). These are predisposing factors (the socio cultural characteristics of individuals that exist prior to their need of health service), enabling factors (the logistical aspects of obtaining care) and need factors the most immediate cause of health service use, from functional and health problems that generate the need for health care services (Figure 1).

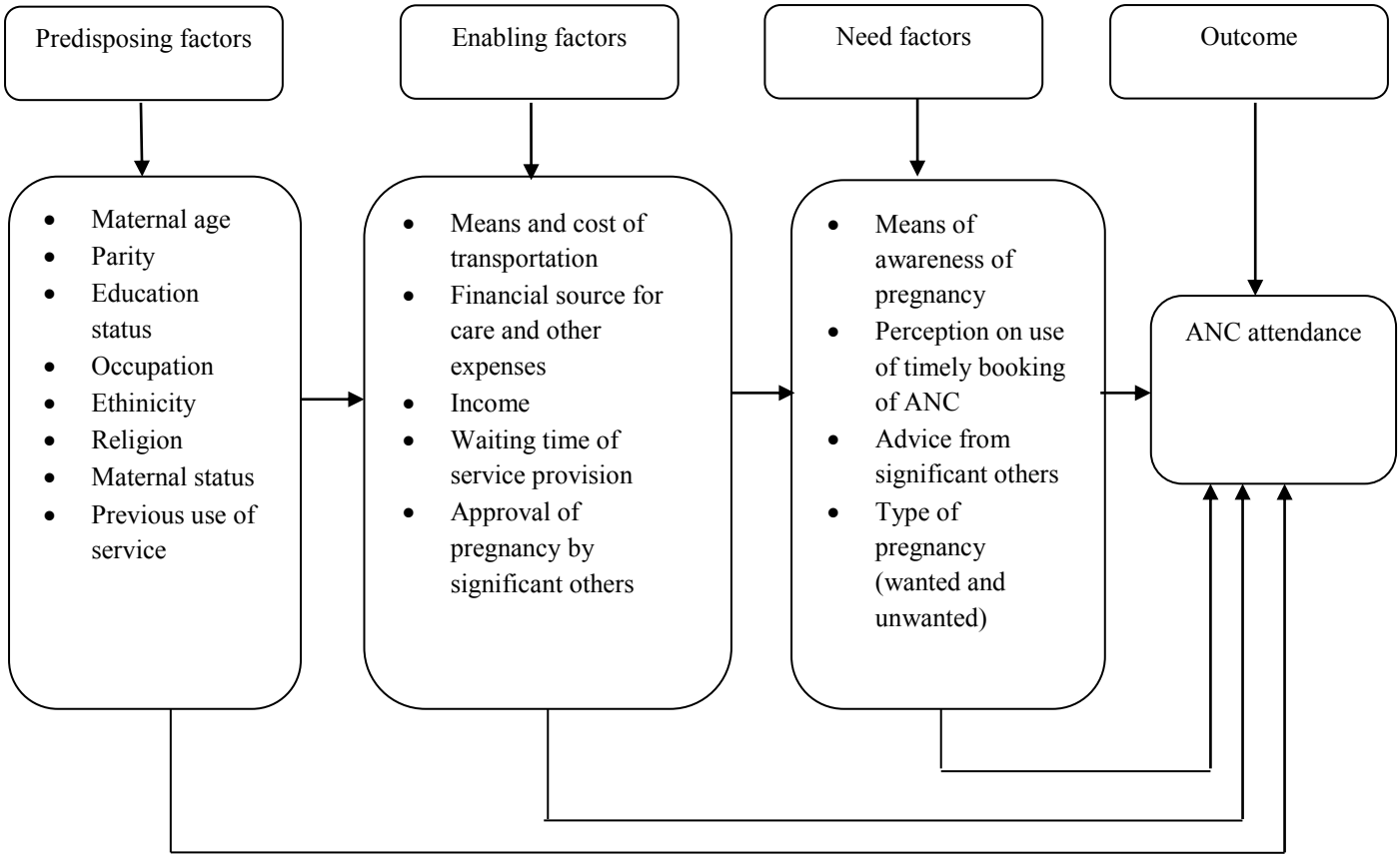

Figure 1: Conceptual framework for timely use of ANC (Source: Anderson, 1995)

CHAPTER III

3. Objectives

3.1. General objective

The general objective of this study is to assess the prevalence of late initiation of antenatal care and associated factors among antenatal care attendees in selected Health Centers of Addis Ababa, Ethiopia

3.2. Specific objectives

1. To find out the proportion of women who start ANC late
2. To determine factors influencing late attendance for antenatal care

CHAPTER IV

4. Materials and methods

4.1.Study area & period

The study was conducted in 10 randomly selected Governmental Health Centers in Addis Ababa city from May 4 to 20 June 2015. Addis Ababa is the capital city of Ethiopia, and the seat for the African Union. There are 10 sub cities and116 Woredas. Estimated population of Addis Ababa is 3,194,999 with annual growth rate of 2.1.Out of the total population 1,679,998 are females (28). The ANC coverage of the City Administration is about 94% which is the highest in the country (10).

The reason for selecting Addis Ababa City is that earlier studies showed that there is late initiation for ANC in Addis Ababa, and currently the status might be the same, and health center facilities were preferred because they are the first level of care facilities and mainly engaged in preventive health services. Whereas, hospitals are provide services to those clients referred from other settings, when complications arise and detected by skilled providers. Hence, the first ANC booking takes place in health centers. Most mothers follow their antenatal checkups at governmental health centers since the service is given free of charge.

4.2.Study design

A quantitative cross-sectional institution based study was conducted to assess the time of booking for the first time of antenatal care and factors associated with it.

4.3.Source population

All pregnant women who came to attend ANC at all Government Health Centers of Addis Ababa, during the study period.

4.4.The study population

Pregnant women who attended ANC at selected Health centers in Addis Ababa, during the study period

4.5.Inclusion and exclusion criteria

Inclusion criteria

- Pregnant mothers who are attending 1st ANC visit and above.
- Women who are mentally and physically capable of being interviewed.
- Those who are volunteer to participate in the study

Exclusion criteria

- Non- pregnant women
- Not willing to participate

4.6.Sample size determination and sampling technique

The sample size was estimated using sample size determination formula for a single population proportion formula. The previous studies done in Addis Ababa reported that the prevalence of late imitation of ANC was 59.8% (15). Therefore, the total sample size was calculated with the marginal error of 0.05, with 95% confidence interval. A contingency of

15% of the total sample size was considered for non-respondents. Based on these assumptions, a total sample size was calculated using the formula as indicated below:

$$n = \frac{(Z_{\alpha/2})^2 * p(1-p)}{d^2}, n = \frac{(1.96)^2 * 0.598(1-0.598)}{(0.05)^2} = 370, = 370 * \frac{15}{100} = 426$$

Where: n= sample size

Zα/2 = Z value at 95% CI [1.96]

p = prevalence of late initiation is = 59.8%

d = Margin of error tolerated is (0.05)

With the above inputs the sample size required including 15% contingency will be 426.

4.7.Sampling procedure

Though, the number of health centers found in each sub city are not equal in number, one health center was selected using a simple random sampling technique from the respective sub-city lists of health centers. Subsequently, an individual participant was included in to the study as long as she comes in the selected health centers during the allotted data collection period. The list of selected health centers are indicated in Fig 2.

To generalize the finding from the sample population to the reference population a proportional sampling method was used. One health center from each sub city was drawn using simple random sampling technique (by lottery). The daily average client flow of the selected health centers was taken from registry book of the selected health centers. The data was almost similar, which ranges from 22 to 24 clients per day and this number was then multiplied with monthly working days which is 22 day. The total sample size was

proportionally allocated for ten health centers depending on the client flow in each health center using the formula below.

$$n_h = \frac{N_h}{N} * n$$

- n_h is the sample size allocated to health center h,
- N_h is the number of clients who visit the selected health center h in a month,
- N the cumulated number of clients who have visited all the ten health centers in a month
- where n is the total sample size to be allocated
- h runs from 1 to 10

At the selected health institutions, study subjects were recruited for the study at ANC service when they come for follow-up or to begin the service. All the cases that were volunteer to participate during the study period were taken until the required sample size is obtained.

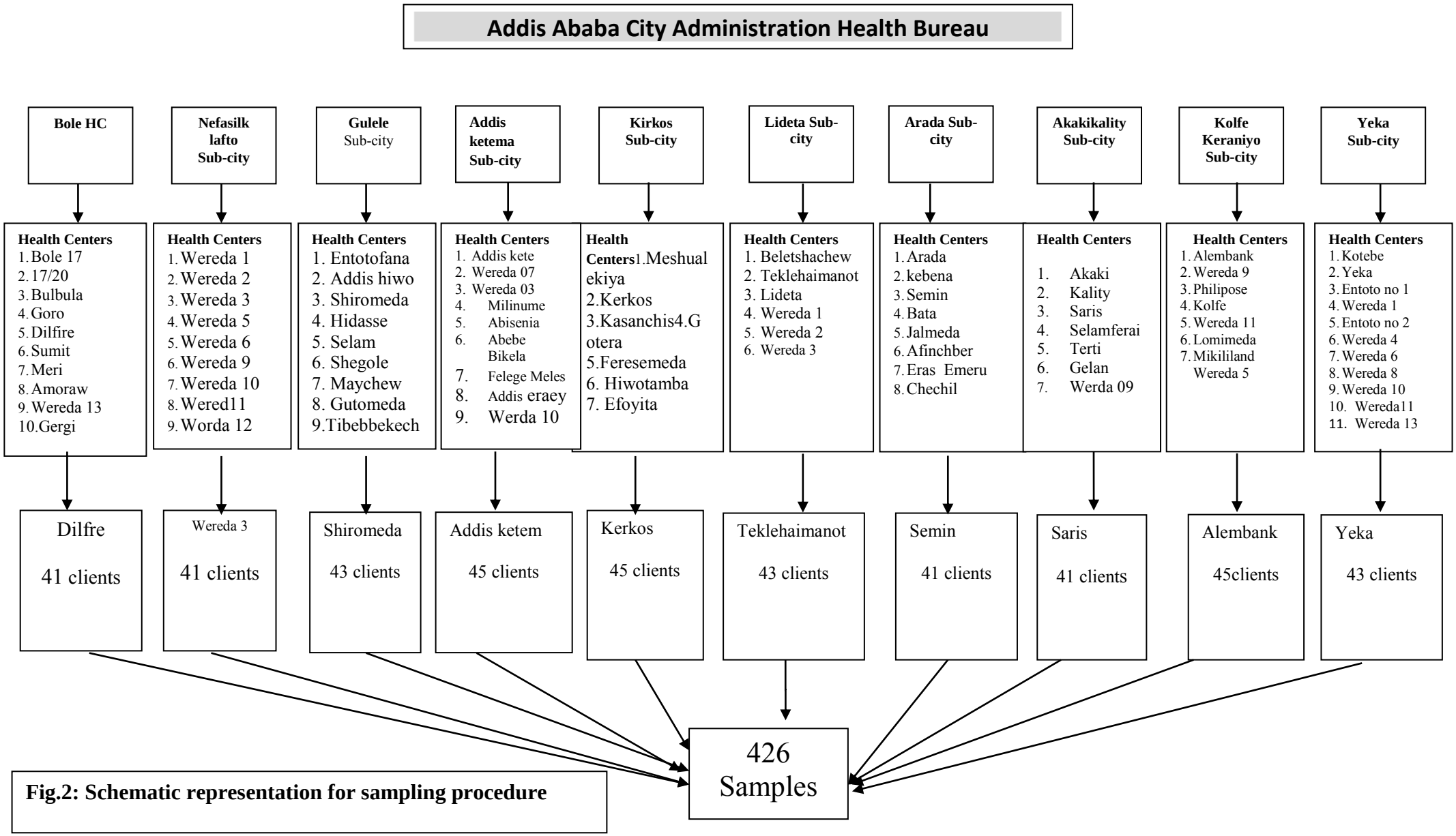

Fig.2: Schematic representation for sampling procedure

4.8. Variables of the study

Dependent variable

The only dependent variable of this research project was time of ANC initiation.

Independent Variable

Predisposing Factors: The socio-cultural characteristics of individuals that exist prior to their utilizing service (Maternal Age, Educational Status, Occupation, Marital Status, Ethnicity, Religion, Parity, Attitudes toward the care, how the pregnant valued the care, and Knowledge concerning and towards the service).

Enabling Factors: The logistical aspects of obtaining care (distance from health institution, means and cost of transportation and financial source for care and other expenses, income, availability of health personnel and facilities, and waiting time, acceptability and approval of pregnancy by them and significant others)

Need Factors: The most immediate cause of health service use, from functional and health problems that generate the need for health care services. (Awareness of pregnancy, perceptions on the use of early ANC seeking and any advice from significant others).

4.9. Operational definition of terms

Antenatal attendance

- Early attendance refers to initiating of ANC before and at the 12^{th} week of gestation

- Late attendance refers initiating ANC after 12th weeks of gestation or more. Delay in ANC: women who came for ANC after 12thweeks of gestation. This reference is taken from the last menstrual period of the pregnant women

Antenatal clients: Pregnant women attending the antenatal clinic in the health center.

Knowledge of obstetric complication(s): Any symptom of obstetric complication(s) reported by woman which might occur in women during pregnancy, delivery or within 6weeks after delivery.

Birth preparedness: A woman is considered as birth prepared if she is able to identify more than five component of birth preparedness.

Skilled provider: Persons with midwifery skills (physicians, health officers, nurses/midwives) who can manage normal deliveries and diagnose, manage or refer obstetric complications.

Predisposing Factors: The socio-cultural characteristics of individuals that exist prior to their utilizing service (Maternal Age, Educational Status, Occupation, Marital Status, Ethnicity, Religion, Parity, Attitudes toward the care, how the pregnant valued the care, and Knowledge concerning and towards the service).

Enabling Factors: The logistical aspects of obtaining care (distance from health institution, means and cost of transportation and financial source for care and other expenses)

Need Factors: The most immediate cause of health service use, from functional and health problems that generate the need for health care services (Awareness of pregnancy, perceptions on the use of early seeking ANC, and any advice from significant others).

Identified mode of transport:-Any kind of transport which is identified ahead by the women other family for the purpose of transportation to place of childbirth or for the time of obstetric emergencies reported.

4.10. Data collection procedure and Instrument

The data was collected by interviewing the pregnant women after getting informed consent. Five BSC Degree holder nurses, who are not working in the health centers were participated in data collection after being given an intensive two days training on the data collection tools and collection procedures by the principal investigator. They did data collection by using semi structured and pre-tested questionnaire. The questionnaire included questions on socio-demographic characteristics, obstetric factors etc. The questionnaire was originally be developed in English and then translated into Amharic. It was translated back to English by another person to ensure its consistency. Most of the items were adapted from existing literatures. The Amharic language questionnaire was used to collect data at all health centers during the study period. The pretested questionnaire was not included in the study. Supervision of data collectors was made two times at each health centers during the study period by the principal investigator and supervisors. The collected data was carefully checked for completeness as well as consistency. Any confusion on the data collection procedure and/or responses was handled timely.

4.11. Data processing & analysis

Data was entered, coded and analyzed using SPSS, version 20. Descriptive statistics like frequencies and percentages was used to present the categorical independent variables, and mean/standard deviation was used to describe a continuous variable. Frequency tables were used to present descriptive results.

For this study, bivariate logistic regression model was fitted as a primary method of analysis. Odds ratios (OR) was computed with the 95% confidence interval (CI) to see the ANC time of initiation in relation to the considered associated factors in this research. Independent factors, with a P-value <0.2 obtained in the bivariate logistic regression were entered into the multiple logistic regression models. Consequently, the most important associated factors were identified using the multivariate logistic regression analysis. Then an adjusted odds ratio (AOR) with 95% confidence interval was calculated for the significant predictive variables, and statistical significance was accepted at (P< 0.05). Logistic regression tables were also used to present the results.

The outcome variable was based on ANC time of initiation that an ANC Visit after the12thweek was taken as late ANC initiation and an ANC visit before or at 12thweek of gestation was taken as early initiation of ANC service.

4.12. Data quality assurance

Pretesting of the questionnaire was conducted on pregnant women attending ANC at Wereda 23 health center before the study period and appropriate modification was applied. The data collected for pretest purpose was not included in the main study.

All filled questionnaires were checked for completeness, accuracy, and consistency. Necessary corrections and changes were made. All supervision was carried out by the Principal Investigator throughout the data collection period. This helped to identify problems that had addressed on the questionnaires.

4.13. Ethical considerations

Ethical clearance & permission letter was obtained from the institutional review board of AAU, College of Health Sciences, School of Aligned Health Science, Department of Nursing and Midwifery. The health centers included in this study was asked permission using formal letters from the university, Addis Ababa City Administration Health Bureau and respective Sub City Health Departments/Offices. Oral and written informed consent was obtained from each study participants after the objectives of the study are explained. Participation of respondents was strictly made on voluntary basis. The participants was informed that the information collected was anonymous, can be withdrawn from the interview if theywere unhappy during interview & only those who were willing were interviewed. Confidentiality of responses was maintained throughout the research process. Personal privacy and cultural norms was respected properly. No names were used; however, the questionnaires were serial numbered for the purpose of data entry.

4.14. Result dissemination plan

The final result of this study will be submitted to AAU health Science College of Nursing and Midwifery, in order to make it available in the University; one copy will be submitted to the FMOH; one copy will be submitted to the Addis Ababa Health Bureau and Non-Governmental Organizations working around maternal health in the city. Besides, there will

be presentation of the research outputs to the college community and other concerned stakeholders. Manuscript will also be prepared and sent for publication to reputable journals.

CHAPTER V

5. Result

5.1.Socio-demographic characteristics of the respondents

Out of 426 pregnant women initially included in this study, 407 (95.5%) have responded to the interview. The rest 19(4.5%) did not respond to the interview due to various reason.

The majority of the study participants 128 (31.4%) were in the age group of 25 to 29 years followed by the age group of 30-34 (23.6%). The teen age and above40 years were less (4.2-4.4%) compared to other age groups. The age group ranges from 17 to 42 years and the median age of respondents was 28 year.

Regarding the ethnic composition of the respondents, the highest were Amahara126 (31%), and followed by Oromo91 (22.4%). The lowest proportion of respondents is Silte 39(9.6%). Respondents of Orthodox religion were the majority237 (58.2%) and the lowest were Catholic 41 (10%). Three hundred forty-seven out of 407 (85.3%) ANC attendees were married and live together with husband. With regard to educational status136 (33.4) were primary 113(27.8) secondary school levels and 60(14.7) were having diploma and above. Occupation status of most of the respondents were house wives and self-employed which is,165(40.5), 131(32.2) and 239(58.7) respectively. With regard to house holed income majority of them have income of above 1000 Eth birr per month (Table 1).

Table 1.Socio-demographic characteristics of the respondents by timing of first ANC visit at selected health centers, Addis Ababa Ethiopia, 2015.

Variables	Booking within time (12 weeks of gestation and before)	Booking late (after 12 weeks of gestation)	Total
	Number (%)	Number (%)	Number (%)
Age in years N=407			
15-19	11 (4.1)	7 (5.0)	18 (4.4)
20-24	60 (22.5)	22(15.7)	82 (20.1)
25-29	84 (31.5)	44 (31.4)	128 (31.4)
30-34	65 (24.3)	31 (22.1)	96 (23.6)
35-39	39 (14.6)	27 (19.3)	66 (16.2)
40-45	8 (3.0)	9 (6.4)	17 (4.2)
Ethnic group N=407			
Amahara	78 (33.5)	48 (27.6)	126 (31.0)
Oromo	61 (26.2)	30 (17.2)	91 (22.4)
Guragie	36 (15.5)	46 (26.4)	82 (20.1)
Tigre	34 (14.6)	17 (9.8)	51 (12.5)
Silte	15 (6.4)	24 (13.8)	39 (9.6)
Others	9 (3.9)	9 (5.2)	18 (4.4)
Religion N=407			
Orthodox	168 (62.9)	69 (49.3)	237 (58.2)
Muslim	65 (24.3)	55 (39.29)	120 (29.5)
Protestant	28 (10.5)	13 (9.3)	41 (10.1)
Catholic	6 (2.3)	3 (2.1)	9 (2.2)
Others	0	0	0
Marital status N=407			
Single [Never married]	8 (3.0)	14(10.0)	22 (5.4)
Married and live together currently	239 (89.5)	108 (77.1)	347 (85.3)
Cohabitation	14(5.2)	14 (10.0)	28 (6.9)
Separated, divorced or widowed	6 (2.3)	4 (2.9)	10 (2.5)
Educational level N=407			
Illiterate (cannot read and write	32(12.0)	32 (22.9)	64(15.7)
Illiterate can read and write	19(7.1)	15(10.7)	34(8.4)
Primery (1-8)	80(30.0)	56(40.0)	136(33.4)
Secondary (9-10)	82(30.7)	31(22.1)	113(27.8)
Diploma and above	54(20.2)	6(4.3)	60(14.7)
Occupation N=407			
Employed [wedge]	71 (26.6)	25 (17.9)	96 (23.6)
Employed self	95 (35.6)	36 (25.7)	131 (32.2)
House wife	97 (36.3)	68 (48.6)	165 (40.5)
Others	4 (1.5)	11 (7.9)	15 (3.7)
Household income per month			
Less than 400 ETH birr	19(7.1)	17(12.1)	36(8.8)
400 - 1000 ETH birr	71(26.6)	61(43.6)	132(32.4)
Above 1000 ETH birr	177(66.3)	62(44.3)	239(58.7)

5.2. Timing of first ANC visit

Out of 407 pregnant mothers included in this study, 267 (65.6%) pregnant mothers started their first ANC visit early while the remaining 140 (34.4%) pregnant mothers started ANC late in either second or third trimester. In both cases, the timing of the first ANC booking ranged from 4 weeks to 32 weeks of gestation with mean timing of 13 weeks with standard deviation of 5.47 weeks(Fig 3 and 4).

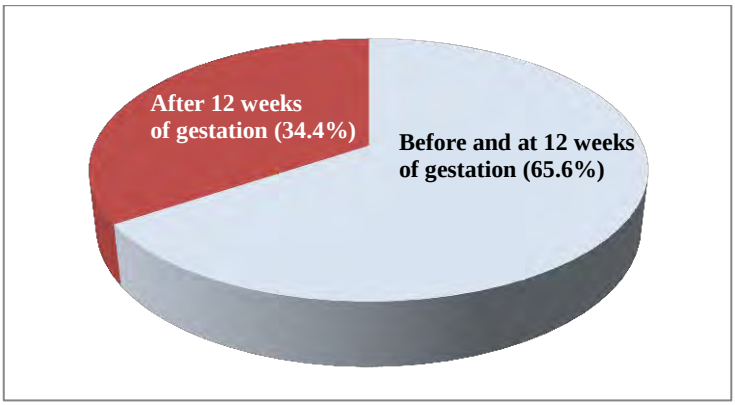

Fig 3. Proportion of respondents by gestational age of ANC visit

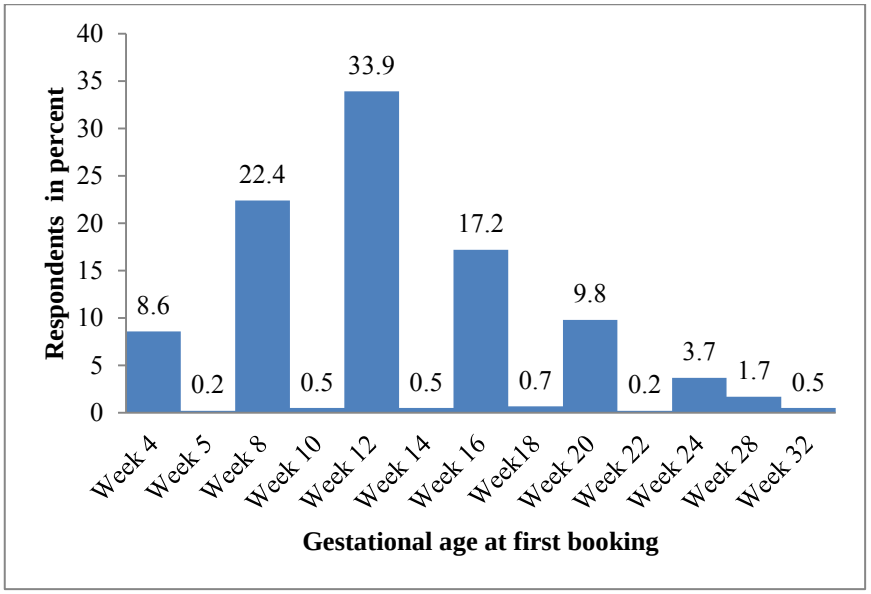

Fig 4. Percentage of respondents by weeks of gestation booked first ANC, Addis Ababa 2015

5.3. Obstetric history and timing of first ANC visits

Of the total respondents 185 (45.5%) were para zero, while the rest 222 (54.5%) were parity one and above. Among para zero women 135%50.6%) of them booked early for the current pregnancy whereas among multi parus women 132 (49.4%) were booked early for the current pregnancy. Three hundred ten (76.2%) had no history of abortion and the rest 97 (23.8) had history of at least one abortion. Among those who had no history of abortion the majority 206(77.2%) started ANC early for current pregnancy. With regard to the types of abortions, 71 (73.2) had spontaneous abortion, 16(16.5%) of the abortions were self-induced, and 10 (10.3%) had history of both types. Among all respondents 23 (5.7) had faced one or more child death (Table 2).

Table 2.Obstetric history of respondents by timing of first ANC booking at selected health centers, Addis Ababa Ethiopia, 2015.

Variables	Booking within time (12 weeks of gestation and before)	Booking late (after 12 weeks of gestation)	Total
	Number (%)	Number (%)	Number (%)
Parity N=407			
Para 0	135(50.6)	50(35.7)	185 (45.5)
Para 1-3	129(48.3)	85(60.7)	214 (52.6)
Four or more parity	3(1.1)	5(3.6)	8 (1.9)
Had history of abortion N=407			
Yes	61 (22.7)	36 (25.7)	97 (23.8)
No	206 (77.2)	104 (74.3)	310 (76.2)
Type of abortion N=97			
Spontaneous	44 (74.6)	27(71.1	71(73.2)
Induced	8(13.6)	8(21.1)	16(16.5)
Both spontaneous and induced	7(11.9)	3(7.9)	10(10.3)
Had history of child death N=407			
Yes	12 (4.5)	11 (7.9)	23 (5.7)
No	255 (95.5)	129 (92.1)	384 (94.3)

5.4. Knowledge and perception of respondents on ANC service utilization

Two hundred seventy five (67.6%) of the respondents have knowledge on the importance of ANC for the health of the mother and fetus and rated as highly important while the rest 94(23.1%) rated as medium and very few respondents said as the ANC has less importance to the health of mother and fetus. Among those who had knowledge of ANC and perceived it as it is highly important, 211(79.0%) of them booked early for the current pregnancy. Regarding the perception of correct time of ANC booking, 281(69.0%) of the interviewed women perceived within 12 weeks of gestation, while 126 (31.0%) were after 12 weeks of gestation. Of those who correctly perceived the recommended time, 212 (79.4%) booked early in the current pregnancy. Three hundred forty (83.5%) of respondents perceived that four and more ANC visits were necessary. On the contrary, 67 (16.5%) of them perceived that less than four ANC visits were sufficient throughout the whole pregnancy period (Table 3). Among the women who reported as four and more visits are necessary, 216(80.9%) booked early for the current pregnancy.

Table 3.Perception on ANC service utilization by timing of first ANC booking at selected health centers, Addis Ababa Ethiopia, 2015

Variables	Booking within time (12 weeks of gestation and before)	Booking late (after 12 weeks of gestation)	Total
	Number (%)	Number (%)	Number (%)
Perception on importance of ANC for both the mother& the fetus N=407			
Highly important	211 (79.0)	64 (45.7)	275(67.5)
Medium	45 (16.9)	49 (35.0)	94(23.1)
Less	10 (3.8)	22(15.71)	32(7.9)
Do not know	1(0.4)	5(3.6)	6(1.5)
Perception on timing of ANC booking N= 407			
Before 12 weeks of gestation	212 (79.4)	69 (49.3)	281(69.0)
After 12 weeks of gestation	55(20.6)	71 (50.7)	126(31.0)
Perception on number of ANC visits per pregnancy N=407			
One visit	0	2 (1.4)	2 (0.5)
Two to three visits	36 (13.5)	29 (20.7)	65 (16.0)
Four to six visits	157 (58.8)	74 (52.9)	231 (56.8)
More than six visits	59 (22.1)	22 (15.7)	81 (19.9)
Others (as per the appointment given)	15 (5.6)	13 (9.3)	28 (6.9)

5.5.Past history of ANC service utilization of the respondents

From 222 respondents who had history of previous pregnancy, 210(94.6) had experience of ANC for the pregnancy preceding the current. Among the pregnant women who had previous experience 126(96%) booked early for the current pregnancy. Out of 210 respondents who responded to the timing of first visit for pregnancy preceding the current pregnancy, 183(87.1) had their previous visit before or at 12 weeks of gestation while the rest 27 (12.9%) had their first visit after 12 weeks of gestation. Of those who started ANC on the recommended time for the previous pregnancy, only 113(89.7%) of them booked early for the current pregnancy. Fifty five (26.2) respondents who attended ANC for the pregnancy preceded the current reported that they spent less than 2 hours, 139(66.2%) spent 2-4 hours and 16(7.6) spent greater than 4 hours for the first visit. One hundred fifty four (73.3%) responded that the waiting time for repeated visits were less than 2 hours. Among those who had experience in ANC, 145(69.0%) of them reported that they paid for ultrasound and laboratory outside the health center for the service provided (Table 4).

Table 4. Past history of ANC service utilization by timing of first ANC booking at selected health centers, Addis Ababa Ethiopia, 2015.

Variables	Early booked (at 12 weeks of gestation and before)	Late booked (after 12 weeks of gestation)	Total
	Number (%)	Number (%)	Number (%)
Previous experience of ANC preceding the current N=222			
Yes	126(96.2)	84(92.3)	210 (94.6)
No	5(3.8)	7(7.7)	12 (5.4)
Time of ANC booking for previous pregnancy N=210			
Before and at 12 weeks of gestation	113(89.7)	70(83.3)	183(87.1)
After 12 weeks of gestation	13(10.3)	14(16.7)	27(12.9)
Waiting time for the previous pregnancy preceding the current (1st visit) N=210			
Less than 2 hours	24 (22.4)	31 (30.1)	55 (26.2)
2- 4 hours	74 (69.2)	65 (63.1)	139 (66.2)
Greater than 4 hours	9 (8.4)	7 (6.8)	16 (7.6)
Waiting time for the previous pregnancy preceding the current (2nd visit) N=210			
Less than 2 hours	79 (73.8)	75 (72.8)	154 (73.3)
2- 4 hours	26 (24.3)	26 (25.2)	52 (24.8)
Greater than 4 hours	2 (1.9)	2 (1.9)	4 (1.9)
Payments required for ANC service N=210			
Yes	93(73.8)	52(61.9)	145(69.0)
No	33(26.2)	32(38.1)	65(31.0)

5.6.History of current pregnancy and timing of first ANC visit

Three hundred ten (76.2%) respondents confirmed their current pregnancy by urine test offered by health provider, while 97(23.8) confirmed pregnancy when they missed one and more menses. Among those who confirmed their pregnancy by urine test 206(77.2%) of them booked early for the current pregnancy. Similarly, among those who confirmed their pregnancy by missed menses, 61(22.8%) respondents started their first ANC visit early. Of all respondents, 331(81.3%) were first informed the pregnancy to their husbands and 203(87.1%) of them started their first ANC visit on the recommended time. The rest 14 (3.4%), 18 (4.4%), and 39 (9.6%), inform to their mothers, sisters, and friends, respectively. Whereas, 5(1.2%) respondents did not inform to any one before ANC booking.

Three hundred fourteen (77.1%) respondents reported that their pregnancies were planned while 93 (22.9%) respondents reported that it was unplanned. Among those who had a planned pregnancy 224(83.9%) of them booked early whereas 90(64.3%) booked late. Of 314 pregnant women who had a planned pregnancy, 306(97.5%) of them included their husband in the plan and among which 219(97.8%) started their first ANC visit early. Out of the 93(22.9%) unplanned pregnancies,36(38.7%) were unwanted by the women after conception and similarly 42(45.2%) cases were unwanted by their husbands. From the unwanted pregnancy 29 (31.2) were wanted abortion (Table 5).

Table 5. History of current pregnancy by timing of first ANC booking at selected health centers, Addis Ababa Ethiopia, 2015.

Variables	Early booked (at 12 weeks of gestation and before)	Late booked (after 12 weeks of gestation)	Total
	Number (%)	Number (%)	Number (%)
Means to confirmpregnancy N=407			
By examination (Urine)	206(77.2)	104(74.3)	310(76.2)
Missed period one and more months	61(22.8)	36(25.7)	97(23.8)
To whom pregnancy was reported first? N=407			
Your Husband	203 (87.1)	128 (73.6)	331 (81.3)
Your Mother	7 (3.0)	7 (4.0)	14 (3.4)
Your Sister	11 (4.7)	7 (4.0)	18 (4.4)
Your Friend	11 (4.7)	28 (16.1)	39 (9.6)
Other	1 (0.4)	4 (2.3)	5 (1.2)
Is the current pregnancy planned? N=407			
Yes	224 (83.9)	90 (64.3)	314 (77.1)
No	43 (16.1)	50 (35.7)	93 (22.9)
If the pregnancy planned, did the plan include your husband N=314			
Yes	219 (97.8)	87 (96.7)	306 (97.5)
No	5 (2.2)	3 (3.3)	8 (2.5)
If the pregnancy unplanned is that wanted by you after conception? N= 93			
Yes	28 (68.1)	29 (58.0)	57 (61.3)
No	15 (34.9)	21 (42.0)	36 (38.7)
If the pregnancy unplanned is that wanted by your husband after conception? N= 93			
Yes	28 (65.1)	23 (46.0)	51 (54.8)
No	15 (34.9)	27 (54.0)	42 (45.2)
Have you wanted abortion? N=93			
Yes	8 (23.5)	21 (35.6)	29 (31.2)
No	26 (76.5)	38 (64.4)	64 (68.8)

5.7.History of current ANC utilization and timing of fist ANC visit

Among the respondents 346 (85.5%) of them reported that they received advise on ANC use before first booking while 61 (15.0%) of them did not receive advise from any one. Of those who received advise on ANC utilization 240(89.9%) of them started their ANC visit early. One hundred ten (31.8%) respondents received advice from community health workers, 106 (30.6%) from media, 66(19.1%) from husbands, and the rest 64(18.5%) received advice from mothers, sisters, and other individuals. Among the respondents who acquired advice from CHW and media sources, 172(71.7%) were only booked early.

Three hundred nine (89.3%) respondents reported that they were informed when to be booked and the rest 37 (10.7%) reported that the advice did not include when to book ANC. Among the respondents who were informed when to be booked ANC, 284 (91.9%) were informed as the correct time is before 12 weeks of gestation and among which 222 of them booked on the recommended time as per the advice. Whereas the rest 25 (8.1%) were informed as the correct time is after 12 weeks of gestation and almost all of them booked late as per the advice.

With regard to the reason why they preferred that time to come for first ANC visit, the majority 266(65.4%) reported as they perceived it is appropriate time. Other respondents 48(11.8), 38(9.3), 37((9.1) reported that they perceived from previous experience of timing, time constraints and unplanned pregnancy, respectively. In addition very few of them reported financial constraints and other personal reasons. Among the respondents who perceived as it is appropriate time 225(84.3%) of them started their first ANC visit on the recommended time whereas 41(29.3%) booked late (Table 6).

Table 6.History of current ANC visit by timing of first ANC booking at selected health centers, Addis Ababa Ethiopia, 2015.

Variables	Early booked (at 12 weeks of gestation and before)	Late booked (after 12 weeks of gestation)	Total
	Number (%)	Number (%)	Number (%)
Advise received on ANC for the current pregnancy N=407			
Yes	240 (89.9)	106 (75.7)	346 (85.5)
No	27 (12.1)	34 (24.3)	61 (15.0)
From whom advice received? N=346			
Community health workers	88 (36.7)	22 (20.8)	110 (31.8)
Media (Radio, TV and the like)	84 (35.0)	22 (20.8)	106 (30.6)
Husband	44 (18.3)	22 (20.8)	66 (19.1)
Mother	2 (0.8)	6 (5.7)	8 (2.3)
Sister	2 (0.8)	6 (5.7)	8 (2.3)
Friend	19 (7.9)	27 (25.6)	46 (13.3)
Other	1 (0.4)	1 (0.9)	2 (0.6)
Did the advice include time of booking? N=346			
Yes	205 (93.8)	84(79.3)	309 (89.3)
No	15 (6.2)	22 (20.7)	37 (10.7)
Advise time N= 309			
Before and at 12 weeks of gestation	222 (98.7)	62 (73.8)	284 (91.9)
After 12 weeks of gestation	3 (1.3)	22 (26.2)	25 (8.1)
Reason for booking for the current pregnancy N= 407			
1. Perceived it is appropriate time	225 (84.3)	41 (29.3)	266 (65.4)
2. Previous experience	18 (6.7)	30 (21.4)	48 (11.8)
3.Busytime	11 (4.1)	27 (29.3)	38 (9.3)
4. Economic factor	1 (0.4)	7 (5.0)	8 (2.0)
5. Unplanned pregnancy	10 (3.8)	27 (19.3)	37 (9.1)
6. Others	2 (.8)	8 (5.7)	10 (2..5)

Association of factors with timely booking of first ANC

This study revealed that there is a general improvement in flirt time antenatal booking. The majority 267(65.6%) booked on the recommended time. The multiple regression analysis indicated that educational level, knowledge on the importance of ANC for both mother and the fetus, source of information to book ANC received for current pregnancy, advice given on the time of first ANC booking, reason for booking for the current pregnancy significantly and positively affected booking ANC at the recommended time (Table 7).

Table 7. Association of factors with timely booking of first ANC at selected health centers of Addis Ababa, 2015

Predictors	AOR	95% C.I.		p-value
		Lower	Upper	
Education level				
High school and Above	3.346	1.618	6.918	**.001**
Elementary and below	1			
Perception on the importance of ANC for both mother and the fetus				
Have knowledge on ANC importance	2.666	1.266	5.616	.010
Have no knowledge on ANC importance	1			
Source of information received for current pregnancy				
Received advise on importance of ANC from Community HW & media (TV, radio)	3.716	1.671	8.266	**.001**
Received advise on importance of ANC from Family members (husband, mother, sister and the like)	1			
Advice given on the time of first ANC booking				
Advised to book on appropriate time (before and at 12 weeks of gestation)	20.928	4.499	97.347	**.000**
Advised to book late (after 12 weeks of gestation)	1			
Reason for booking for the current pregnancy				**.000**
Perceived it is appropriate time	14.765	7.109	30.667	.000
Other reasons	1			

CHAPTER VI

6. Discussion

Antenatal care is an essential part of modern health care. Any health care program that sincerely wishes to improve the health of its population must pay serious attention to the health of the pregnant woman and her fetus. According to the WHO recommendation, every pregnant woman should receive at least four ANC visits during pregnancy (6).

Improving maternal health care, particularly providing antenatal and delivery care, are important mechanisms identified to reduce maternal mortality and as such facilitate the attainment of the Millennium Development Goals on maternal health. The antenatal period clearly presents opportunities for reaching pregnant women with a number of interventions that may be vital to them and their infant's health and well-being. The focused ANC model recognizes that every pregnant woman is at risk of complications and recommends the first visit to be early in the first trimester (29).

Information that was gathered from this study showed that the prevalence of early antenatal care attendance is improved in Addis Ababa city. It indicated that two-third of the respondents had started their ANC within the recommended time and the rest one-third were booked late. The timing of first ANC booking ranged 4 weeks from last menstrual period to 32 weeks of gestation. This result indicates that the prevalence of late initiation is by far lower than what was reported in the previous study conducted in 2008, Addis Ababa where the prevalence of late ANC attendance was 59.8% (15), and study conducted in Zambia where the prevalence of late ANC attendance was 72.0 % in rural and 68.6% in urban districts

respectively (3). This improvement might be attributed with the current national emphasis given to the focused ANC, the massive work done in health improvement in the country within the past 5 years in general and in Addis Ababa city in particular (30). Time gap might also be the other reason. It is however in line with the EDHS, 2014report which indicated a 35% country level improvement in timely first ANC booking compared to the EDHS, 2011. The variation might be due to better access for information, health institution, extension service and transportation of the Addis Ababa population compared to the other urban dwellers (10).

In this study socio-demographic factors were found to be related to ANC attendance. Age of respondents in this study ranged from 17 to 42 years with median of age 28 years. The maternal age is not seen as a statistically significant factor for timely booking of ANC. This is in line with a study done in Zambia and Ethiopia where there was no effect of maternal age on ANC utilization (3, 15).

The gestational age at which women booked for ANC was significantly related to their level of education. Women with secondary level of education and above were more likely to be booked earlier than those who had primary education and less. This finding agrees with EDHS 2011 report where education was a strong predictor in the use of antenatal care services(31).The findings supported by the studies done in Addis Ababa, Bangladesh, EDHS 2014 which states as female education has a positive effect for maternal health service utilization. (10, 15, 18).More over educated women have better pregnancy outcome compared with uneducated women, possibly since they are better informed, are likely to make better choices, are more likely to develop and implement a birth plan, and are more socially or

financially empowered to make the necessary decisions in case of obstetric emergencies (31).Further analysis showed that occupation and house hold income did not significantly influence first booking for ANC. This finding is similar with that of the study conducted in Nigeria (25).

The result of this study showed that parity was a factor for early ANC visit. Women who had no previous birth experience were more likely to start first ANC visit early compared to those with parity one and above. This finding was similar with those of studies done in Addis Ababa, Debre-berehan and Tanzania where they found being in the first pregnancy was strongly associated with an earlier ANC attendance and as parity increases the chance of early booking will decrease (15, 32, and 33). This might be because young women with their first pregnancy and childbirth are more careful about their pregnancy and therefore require institutional care more than multi-parus women. In addition, younger women tend to be more educated than older ones and have more information.

The proportions of respondent with history of at least one abortion (induced and/or spontaneous) were 23.8%. Past obstetrics outcome did not showed statistically significant relation with early booking which is in line with the study done in Addis Ababa and India but contrary with study done in Bangladesh (15, 18, 34). Among all respondents 5.7% had faced one or more child death.

About two-third (67.5%) of the respondents perceived and rated that the importance of ANC for the health of the mother and fetus as highly important and is significantly affected early booking. Accordingly, those who had knowledge and perception of ANC earlier in former

pregnancy were more likely to book earlier for their current pregnancy (AOR = 2.666, 95% CI: 1.266, 5.616), showing that knowledge and experience of early ANC service utilization demonstrated timely booking in the current visit. This depicted that women were appropriately informed on time of booking from counseling and health education sessions during previous pregnancies.

Respondents who perceive that the correct time of ANC booking was within 12 weeks of gestation were more likely booked early within recommended time compared with respondents who perceive the correct time of ANC booking was after 12 weeks of gestation. This finding agrees with the findings of previous study conducted in Debre-Berehan and Mekele. It is a general truth that individuals with positive perception on importance and available service are more likely to use the service (32, 35).

Among 222 respondents who had history of previous pregnancy, 210 (94.6%) had experience of ANC for the pregnancy preceding the current. The analysis further indicated out of 210 respondents 183(87.1%) had their previous visit before and at 12 weeks of gestation. Among those who booked in the recommended time previously, 89.7% of them only booked in the recommended time for the current pregnancy. But the difference was not statistically significant. With regard to waiting time of their previous ANC visit, in both cases they stayed minimum 1 and maximum of 8 hour with mean of 2 hour and 45 min for the first visit. Whereas for the second visit they spent minimum 30 min and a maximum of 6 hour with mean 1hr and 30 minute for getting the required services. The waiting time for ANC visit in the previous pregnancy did not significantly affect early booking for the current pregnancy.

A large proportion of respondents 76.2% reported that they confirmed pregnancy by urine test offered by health providers, while the rest confirmed pregnancy when they missed one and more menses. This study showed that means of confirming pregnancy was not statistically significant for ANC booking. In this study the majority respondents 81.3% were first informed their pregnancy to their husbands. Of those who informed their pregnancy to their husband 87.1% booked at the recommended time. The findings of this study indicated that the majority of the respondents 77.1% had a planned pregnancy. Further analysis revealed that, those respondents with planned pregnancy were found to be more likely visiting within the recommended time compared to respondents with unplanned pregnancy. This finding agrees with the studies done in Addis Ababa, and Zambia which stated unwanted and unaware of pregnancy is factor for delay to seek ANC timely booking (3, 15). Among the respondents who had a planned pregnancy, 97.5% of them involved their husbands in the plan. This study is in line with the study done in Zambia, Uganda and Malawi which stated husbands involvement and wanted pregnancies are more cared for by pregnant women and their spouses; this enable women to book for ANC timely and increases the positive outcome (3, 36, 37).

The present study revealed 85.5% respondents reported that they received advice on ANC before being booked. Of those31.8%, 30.6% and 19.1% received the advice from health extension workers, media and their husbands, respectively. The multivariate analysis clearly indicated that the role of media and health extension workers has positive and significant influence on the use of ANC and early booking. In the current study, women having access to information through media and health workers were more likely to initiate ANC visit earlier compared to those received advise from family members and relatives (AOR 3.716, 95% CI:

1.671, 8.266). Among the pregnant women who have informed when to book ANC, 91.9% reported as they were informed to be booked within 12 weeks of gestation. The analysis showed that respondents who were informed to be booked within 12 weeks of gestation were more likely to book within the recommended time compared to respondents who were informed to book after 12 weeks of gestation (AOR= 20.928, 95% CI: 4.499, 97.347). These finding is similar with the study conducted in Metekel and India which suggested that proper information and advice on pattern of ANC utilization is important to book on the recommended time(38, 39). In addition the study conducted in Nigeria showed that media programs on ANC were very effective in changing a woman's behavior since its messages are like warning messages or even counseling (40). More over the findings of this study are highly supported by the reports of EDHS 2014, FMOH 2015 and Jacquelyn et.al 2014, where development and deployment of the HEW cadre played significant role in improving ANC service and gaining substantial increment in percentage of women making four or more antenatal visits at appropriate time in both urban and rural settings (10, 41, 42).

The study further tried to find out the reasons why pregnant women decided to start their first ANC visit for the current pregnancy. The majority 65:4% responded as it was appropriate time to start ANC visit and the rest reported different reasons such as their previous experience, had busy time and having unplanned pregnancy. Those pregnant women 84.3% who reasoned as it is appropriate time to start ANC visit were more likely booked earlier (OR= 14.765, 95% CI: 7.109, 30.667)compared to their counterparts.

Strength and Limitation of the study

Strength

- The questioner was pretested on similar setting and a necessary modification was made to minimize the difficulty during the data collection.
- It was able to meet its aim and the objectives and provided an understanding of the different factors that significantly determine the timings of first ANC visit.
- The results of this study could serve as a baseline data, since very limited study on the same area was made for Addis Ababa

Limitation

- The study has considered only pregnant women attending ANC at the governmental health institutions. However other pregnant women who visit private clinics, hospitals and NGOs who focus on maternity care are not included in this study. There could be socio-demographic differences to those pregnant mothers visiting other health institutions could have been reported.
- Since the data collectors were Health professionals there may be some social desirable responses for some of the variables.
- Lack of adequate similar studies in our country particularly in Addis Ababa to make comparative discussion.

Conclusion

Late antenatal care attendance is currently improved in Addis Ababa city due to the massive work done in maternity care in the past five years. The Respondents educational level, knowledge on the importance of ANC service utilization, Source of the information which

contributed to book timely for the current pregnancy and the advice given on the time of first ANC booking are significantly and positively influenced early initiation of ANC in Addis Ababa. Other factors like planned pregnancy and involving husbands in the plan and parity were also found to be factors associated with early ANC visit. The ANC service provided at the reach of pregnant women to make the services physically and financially accessible, training and deployment of sufficient health extension workers at locality base, awareness creation work done aggressively by different organization, the role of media in advocating ANC care and involvement of husbands in the pregnancy plan played big role for the improvements obtained in ANC booking in Addis Ababa city. However, there is still more work is required to fully achieve ANC utilization in the recommended time.

Recommendation

Keeping in view of the present research study findings, the following recommendations have been made:

- Given the prevalence of late initiation of ANC visit, there is need to investigate more factors that contribute to the current late entry to ANC among women.
- Repeated capacity building workshops should be organized for community health workers to enhance their capabilities for improving the efficiency of ANC services.
- There is a need to explore client-provider interactions in provision of ANC services in public MCH facilities. Such study will elucidate useful suggestions on improving, address provider needs and enhance client satisfaction
- Husbands should be encouraged to accompany wives during ANC visits to enhance women's confidence

- Further the government should continue the current endeavor which emphasizes the maternal health through communication program highlighting the importance of the antenatal care on print and electronic channels of mass media.

Finally, achieving proper ANC helps women to make at a state of optimal health throughout their pregnancies, improve the outcomes for infants, and ultimately improve the overall health and wellbeing of our future population.

References

1. UNICEF, 2009. Maternal and Newborn Health. www.unicef.org/protection/SOWC09-FullReport-EN.pdf
2. World Health Organization. 2014. Trends in maternal mortality: 1990 to 2013. Estimates by WHO, UNICEF, UNFPA, the World Bank and the United Nations Population Division.
3. Isaac Banda, Charles Michelo, Alice Hazemba. 2012. Factors Associated with late Antenatal Care Attendance in Selected Rural and Urban Communities of the Copperbelt Province of Zambia. Medical Journal of Zambia, Vol. 39, No. 3
4. Belayneh T, Adefris M, and AndargieG. 2014. Previous Early Antenatal Service Utilization Improves Timely Booking: Cross-Sectional Study at University of Gondar Hospital, Northwest Ethiopia. Available in the web site http://www.hindawi.com/journals/jp/2014/132494/
5. Villar J, Bergsjø P. New WHO antenatal care model: Randomized trial. World Health Organization. Geneva: WHO; 2002.
6. WHO. 2009. Pregnancy, childbirth, postpartum and newborn care: A guide for essential practice. Geneva: World Health Organization O'Callaghan M. F, Bororkowski J. G, Whitman TL, Maxwell S. E & Keogh D., 1999. A Model of Adolescent Parenting: The Role of Cognitive Readiness to Parent. Journal of Research on Adolescence, 9(2): 203–225
7. Allen D, Ammann A, Bailey H, et al. 2001. Revised Recommendation for HIV screening of pregnant women prenatal counseling and guidelinesconsultation.50 (RR19):59-86. Available from; URL: http://www.mmwrq@cdc.gov.

8. WHO/UNICEF; Antenatal Care in developing countries; Promises, achievements and missed Opportunities. An analysis of trends, levels and differentials, 1990-2001. 2004World Health Organization, Geneva, Switzerland, 2004.

9. Berhan Y and Berehan A. 2014. Antenatal Care as a Means of Increasing Birth in the Health Facility and Reducing Maternal Mortality: A Systematic Review. Ethiop J Health Sci. Special Issue. 93-104. DOI: http://dx.doi.org/10.4314/ejhs.v24i1.9S

10. Central Statistical Agency. 2014. Ethiopia Mini Demographic and Health Survey. Addis Ababa, Ethiopia

11. World Health Organization. Focused antenatal care: A better, cheaper, faster, and evidence based approach. 2005. Available from: http://www.maguels.org/techbriefs.tbzantenatal.pdf.

12. Focused antenatal care: planning and providing care during pregnancy. Available from; http://www.planetwire.org/get/3434.

13. Sibeko S, Moodley J. Health care patterns by pregnant women in Durban South Africa. SA Family Practice. 2006; 48 (10): 17

14. Kalayou K, Haftom G, Gerezgiher B, Hailemariam B and Alemayehu B. 2014. Assessment of Antenatal Care Utilization and its Associated Factors among 15 to 49 Years of Age Women in Ayder Kebelle, Mekelle City 2012/2013; A Cross Sectional Study. AJADD[2][1][2014]062-075???

15. Tariku A, Melkamu Y, and Kebede Z. 2010 “Previous utilization of service does not improve timely booking in antenatal care: cross sectional study on timing of antenatal

care booking at public health facilities in Addis Ababa," Ethiopian Journal of Health Development, vol. 24, no. 3, pp. 226–233.

16. Tekelab T and Berhanu B. 2014. Factors Associated with Late Initiation of Antenatal Care among Pregnant Women Attending Antenatal Clinic at Public Health Centers in Kembata-Tembaro Zone, Southern Ethiopia. Arts Res. J., Jan-April 2014, 3(2): 108-115. http://dx.doi.org/10.4314/star.v3i1.17
17. Worku T, Meseret S, and Amano A. Timing and factors associated with first antenatal care booking among pregnant mothers in Gondar Town; North West Ethiopia. Pregnancy and Childbirth 2014, 14:287
    accessed at http://www.biomedcentral.com/1471-2393/14/287)
18. Chakrborty N, Islam A. M, Islam R.C, Bari W.2003. Determinants of the use of maternal health services in rural Bangladesh., Health promotion International; 18 [4]: 327-337
19. Brown C.A, Sohani B.S, Khan K, Lilford R and Mukhwana W., 2008. Antenatal care and perinatal outcomes in Kwale district, Kenya. http://www.biomedcentral.com/1471-2393/8/2).
20. David P. Urassa, Andrea B. Pembe and Fatuma Mganga. 2012. Birth preparedness and complication readiness among women in Mpwapwa, Tanzania. Journal of Health Research 14:. DOI: http://dx.doi.org/10.4314/thrb.v14i1.8
21. Fantahun M, Kedir A, Mulu A, Adugna D, Meressa D, and Muna E. 2010. Assessment of antenatal care services in a rural training health center in Northwest Ethiopia. Ethiop. J. Health Dev. 2000;14(2):155-160http://ejhd.uib.no/ejhdv14-n2/ejhd-14-2-page155.htm
22. WHO, 2006. Provision of Focused Antenatal Care for Pregnant Women, Geneva.

23. Akintaro Opeyemi Akinpelu and Olabisi Isaiah Oluwaseyi. 2014. Attitude and Practice of Males towards Antenatal Care in Saki West Local Government Area of Oyo State, Nigeria. Advances in Life Science and Technology. Vol.22. www.iiste.orgISSN 2224-7181

24. Dharma Nand Bhatta. 2013. Involvement of males in antenatal care, birth preparedness, exclusive breast feeding and immunizations for children in Kathmandu, Nepal. BMC Pregnancy and Childbirth 2013, 13:14 doi:10.1186/1471-2393-13-14

25. Dennis Isaac Ifenne and Bernard TerkimbiUtoo. 2012. Gestational age at booking for antenatal care in a tertiary health facility in north-central, Nigeria. Niger Med J. 53(4): 236–239. doi: 10.4103/0300-1652.107602

26. Catherine Haulesi Chiwaula. 2011. Factors Associated with Late Initiation of Antenatal Care (ANC) among Women of Lilongwe. A Dissertation Submitted to College of Medicine in Partial Fulfillment of the Requirements of the Master of Public Health Degree. UNIVERSITY OF MALAWI College of Medicine

27. Andersen RM. Revisiting the behavioral model and access to medical care: does it matter? 1995, J Health Soc Behav, 36 [March]:1-10. [Abstract]

28. Central Statistical Agency.2013. Population Projection of Ethiopia for All Regions At Wereda Level from 2014 – 2017

29. Maine D. 1991. Safe motherhood program: Options and Issues. Center for Population and Family Health. Columbia University: New York

30. Ministry of Health Ethiopia, PMNCH, WHO, World Bank, AHPSR and participants in the Ethiopia multi stakeholder policy review (2015). Success Factors for Women's and Children's Health: Ethiopia
31. Ethiopia Central Statistical Agency and ICF International. 2012. 2011 Ethiopia Demographic and Health Survey: Key Findings. Calverton, Maryland, USA: CSA and ICF International.
32. Amtatachew M. Zegeye, Bikes D. Bitew and Digsu N. Koye. 2013. Prevalence and Determinants of Early Antenatal Care Visit among Pregnant Women Attending Antenatal Care in Debre Berhan Health Institutions, Central Ethiopia, African Journal of Reproductive Health. 17(4):130
33. Karin Gross, Sandra Alba, Tracy R Glass, Joanna Armstrong Schellenberg and Brigit Obrist. 2012 . Timing of antenatal care for adolescent and adult pregnant women in south-eastern Tanzania. Pregnancy and Childbirth, 12:16
34. Chandiok N, Dhillon B.S, Kambo I, et al. Determinants of ANC utilization in rural areas of India, 2006, J Obstet Gynecol India January/February; 56 (1): 47-52.
35. Girmatsion Fisseha, Gebremeskel Miruts, Mulu Tekie, Abraha W/Michael, Dejen Yemane, Tesfay Gerezigiher. 2015. Predictors of Timing of First Antenatal Care Booking at Public Health Centers in Mekelle City, Northern Ethiopia. Journal of Gynecology and Obstetrics; 3(3): 55-60
36. Othman Kakaire, Dan K Kaye and Michael O Osinde. 2011. Male involvement in birth preparedness and complication readiness for emergency obstetric referrals in rural Uganda. Reproductive Health 2011, **8**:12. online at: http://www.reproductive-health-journal.com/content/8/1/12

37. Fatch W. Kalembo, Maggie Zgambo, Atupele N. Mulaga Du Yukai mail Niman and I. Ahmed, 2013. Association between Male Partner Involvement and the Uptake of Prevention of Mother-to-Child Transmission of HIV (PMTCT) Interventions in Mwanza District, Malawi: A Retrospective Cohort Study. Vhttp://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0066517
38. Gurmesa Tura. 2009. Antenatal Care Service Utilization and Associated Factors in Metekel Zone, Northwest Ethiopia, Ethiop J Health Sci. Vol.19, No. 2.
39. Kulkarni M.S and Nimbalkar M.R. *2008.* Influence of Socio-Demographic factors on the use of Antenatal Care *.Indian J. Prev. Soc. Med Vol. 39 No.3& 4*
40. Hajara Umar Sanda. 2014. Media Awareness and Utilization of Antenatal Care Services by Pregnant Women in Kano State- Nigeria Journal of Social Science Studies Vol. 1, No. 2
41. Ministry of Health Ethiopia, PMNCH, WHO, World Bank, AHPSR and participants in the Ethiopia multi stakeholder policy review. 2015. Success Factors for Women's and Children's Health: Ethiopia
42. Jacquelyn Caglia, Annie Kearns, Ana Langer, 2014. Country level programs Health extension workers in Ethiopia. Delivering community-based antenatal and postnatal care

Annex i. Information sheet and consent form:

Good morning, Good afternoon, good evening (According to its convenience). My name is _____I came from faculty of Health Science, Addis Ababa University. I am here to gather information about ANC follow up of mothers, so I want to ask you some questions. Would you mind if I take some minutes with you? Your name will not be included in the information, I promise to keep the confidentiality of your reply. It takes us about 30 minutes to complete the interview. Though it seems long time the study helps to improve the ANC service for all pregnant women. As a result, I kindly request you to participate in genuinely answering the interview.

I agree to participate ☐ I don't agree to participate ☐

I have been briefly informed about the study and I clearly understood the objective. Since it doesn't affect my personal life/health, I don't need any remedy. Consequently, I hereby approve my consent to take part in the study as an interviewee with my signature.

Signature_____

Date_____

Annex ii. Questionnaire

Questionnaire No. ☐

Date: _____

Health Institution: _____

Interviewer: _____

No	Questions	Responses Code	Code
Socio-demographic variables			
1.	Age	_____Year	
2.	Ethnic	1.Amahara 2. Oromo 3. Guragie 4. Tigre 5. Silte 6. Others [Specify]_____	
3.	Religion	1. Orthodox 2. Muslim 3. Protestant 4. Catholic 5. Others [specify]_____	
4.	Marital status	1. Single [Never married] 2. Married and live together currently 3. Cohabitation 4. Separated, divorced or widowed	
5.	Educational level [Grade completed	1. Illiterate [cannot read and write] 2. Illiterate [able to read and write] 3. Primary [1-8] 4. Secondary [9-10] 5. College diploma and above	
6.	Occupation	1. Employed [wedge] 2. Employed self 3. House wife 4.Others[specify]_____	
7.	Income per month	Less than 400.00 ETB 400 – 1000 ETB 1000 – 2000 ETB above 2000 ETB	
8.	Transportation cost that you paid for coming & back to this health service	1. No pay for transportation 2. if pay, Specify in ETB:_____	
Obstetric history			
9.	Gravida including abortions	1. Number of Pregnancies:_____ 2. Number of abortions _____	
10.	If there is abortion	1.Number of Spontaneous:_____ 2.Number of Induced:_____	

No	Questions	Responses Code	Code
11.	Para [Number of Births]	1. Number of children alive_____ 2. Number of children died:_____ 3. Number of still birth_____	
Knowledge of ANC			
12.	How do you rate the importance of ANC for your health?	1. Highly important 2. Medium 3. Less 4. Do not know	
13.	How do you rate the importance of ANC for the fetus?	1. Highly important 2. Medium 3. Less 4. Do not know	
14.	When do you think it is appropriate time to begin the ANC after amenorrhea?	_____ month	
15.	How many time do you think a women need to go for ANC in a health facility during pregnancy	1. One Visit 2. Two to Three Visits 3. Four to Six Visits 4. More than Six Visits 5.Others [Specify]:_____	
Past history of service utilization			
16.	Have you ever attended ANC?	1. Yes 2. No	
17.	If yes, for Q 16, for which pregnancy you attended?	1st pregnancy 1. Yes 2. No	
		2nd pregnancy 1. Yes 2. No	
		3rd pregnancy 1. Yes 2. No	
		4th pregnancy. 1. Yes 2. No	
		5th pregnancy 1. Yes 2. No	
18.	If you attended ANC before this pregnancy, At what months you started the service for the recent pregnancy	_____ months	
Past Service Related Variables			
19.	What is the maximum waiting time you spend to complete checkup?	1. For the first Visit _____hrs 2. For the repeat Visits _____hrs	
20.	Is there any payment you were asked for checkup?	1. Yes 2. No	
21.	If yes for Q 20, for what services you paid?	1. For consultation [card and Examination] 2. For laboratory 3. For ultrasound 4. For drugs 5. Other [specify]_____	

No	Questions	Responses Code	Code
22.	If you paid for any service charge, what is the maximum money you paid for a visit?	_____Birr	
23.	Is there any missed investigation in previous, due to shortage [inadequacy] of money?	1. Yes 2. No	
24.	If yes for Q 23, what?	1. Consultation [card and Examination] 2. Laboratory 3. Ultrasound 4. Drugs 5. Other [specify	
25.	Rate the following items of service in terms of your satisfaction	1. Staff approach	1. Highly satisfied 2. Satisfied 3. Medium 4. Not satisfied 5. Highly not satisfied
		2. Laboratory	1. Highly satisfied 2. Satisfied 3. Medium 4. Not satisfied 5. Highly not satisfied
		3. Waiting time	1. Highly satisfied 2. Satisfied 3. Medium 4. Not satisfied 5. Highly not satisfied
		4. Privacy	1. Highly satisfied 2. Satisfied 3. Medium 4. Not satisfied 5. Highly not satisfied
		5. Charge of service	1. Highly satisfied 2. Satisfied 3. Medium 4. Not satisfied 5. Highly not satisfied
History of current pregnancy			
26.	How do you know your pregnancy?	Missed period once	1. Yes 2. No
		Missed period twice	1. Yes 2. No
		Missed period three and more	1. Yes

No	Questions	Responses Code	Code
			2. No
		Physiological changes	1. Yes 2. No
		Other signs like nausea	1. Yes 2. No
		By examination [urine test]	1. Yes 2. No
		Other [specify]	
27.	Is this pregnancy planned?	1. Yes 2. No	
28.	If this pregnancy is planned, did the plan include your husband?	1. Yes 2. No	
29.	If this pregnancy is not planned, was it wanted by you after conception?	1. Yes 2. No	
30.	If this pregnancy is not planned was it wanted by your husband after conception?	1. Yes 2. No	
31.	To whom did you tell you become pregnant for the first time?	1. Your Husband 2. Your Mother 3. Your Sister 4. Your Friend 5. Other (specify)_____	
History of current ANC			
32.	Before your first attendance of the ANC, was there any one who advised you to come?	1. Yes 2. No	
33.	If yes for Q 32, to above question, from whom you get advice?	1. Community health workers (HEW) 2. Media (radio/TV) 3. Husband 4. Mother 5. Sister 6. Friend 7. Other (specify)	
34.	If you were advised to attend ANC by someone, Did he/she informed you when to start?	1. Yes 2. No	
35.	If you are advised on the time to start ANC, When does he/she advise you to start?	_____months after Amenorrhea	
36.	In the present pregnancy, when did you start the follow up?	1. After _____months of amenorrhea 2. I don't know the exact months	
37.	Why you decide to start	1. I perceive it is appropriate time	

No	Questions	Responses Code	Code
	[begin] the follow up at this time?	2. From my previous Experience 3. Busy time 4. Economic factor [money constraints] 5. Because of unplanned pregnancy 6. Others [specify]_____	
38.	After your first visit, when did the Health workers appointed you for the second follow-up	_____months of the first visit	
39.	If your pregnancy were unplanned or unwanted, did you want to undertake abortion?	1. Yes 2. No	

This is all what I want to ask you. Thank you for spending your time and valuable information you gave us. Do you have any question that I can address for you?

_____

_____

_____

የመረጃናየፈቃደኝነትማረጋገጫ

ሀ. የጥናቱ መረጃ

እንደምን አደሩ፣ እንደምንዋሉ፣ እንደምን አመሹ (እንደ አስፈላጊነቱ)

እኔ ስሜ_____እባላለሁ፡፡ የመጣሁት ከአዲስ አበባ ዩኒቨርስቲ ህክምና ፋክልቲ ነው፡፡ ከወሊድ በፊት የሚደረግ የጤና ክትትልን በሚመለከት አነስተኛ ጥናት ለማድረግ መረጃ እየሰበሰብኩ በመሆኑ አንዳንድ ጥያቄዎችን ላቀርብልዎ እፈልጋለሁ፡፡ ስምዎት ከመረጃው ጋር አይካተትም፤የ ሰጡኝን መረጃ ሁሉ በሚስጥር እንደምጠብቅልዎ ቃል እገባለሁ፡፡ ይህንንም ለማድረግ ከእኔ ጋር ወደ ግማሽ ሰዓት እንቆያለን፡፡ ይህ ጊዜዎትን የሚይዝ ቢሆንም መላውን ሴቶች ሊጠቅም የሚችል የአገልግሎት ጥራት ማሻሻያ ለማድረግ የሚያግዝ በመሆኑ እንዲተባበሩኝ እጠይቅዎታለሁ፡፡ የተወሰኑ ደቂቃዎች ባነጋግርዎ ፈቃደኛ ነዎት?

ፈቃደኛ ነኝ ☐ **ፈቃደኛ አይደለሁም** ☐

ለ. የፈቃደኝነት ማረጋገጫ

የምርምር ጥናቱ ክፍል የሆኑ መረጃዎችና ሂደቶች ተብራርተውልኛል፡፡ እኔም በተብራራልኝ መንገድ ተረድቻለሁ፡፡ ምርምሩ ምንም አደጋ የማያስከትል በመሆኑ ለሚያደርጉት ተሳትፎ የካሳ ክፍያ አይኖረውም፡፡ ስለዚህ በዚህ የምርምር ጥናቱ ላይ ለመሳተፍ ፈቃደኛ መሆኔን በፊርማዬ አረጋግጣለሁ፡፡

ፊርማ_____

ቀን_____

መጠይቅ	**ቀን**

የመጠይቅ ቁጥር	

የጤና ድርጅት ስም	
የጠያቂ ስም /ኮድ	

ተ.ቁ.	ጥያቄ	መልስ	ኮድ
	አጠቃላይ መረጃ		
1	እድሜ	ዓመት	
2	ብሔረሰብ	1. አማራ 2. ኦሮሞ 3. ጉራጌ 4. ትግሬ 5. ስልጤ 6. ሌላ (ይገለጽ)	
3	ኃይማኖት	1. ኦርቶዶክስ 2. መስሊም 3. ፕሮቴስታንት 4. ካቶሊክ 5. ሌላ (ይገለጽ)	
4	የጋብቻ ሁኔታ	1. ፈጽሞ ያላገባ 2. ያገባና አሁን አብሮ የሚኖር 3. አብሮ በመኖር የሚደረግ ግንኙነት 4. ያገባና አብሮ የማይኖር፣ (የፈታ፣ በሞት የተለየ)	
5	የትምህርት ደረጃ	1. ያልተማረ (ማንበብና መጻፍ የማይችል) 2. ያልተማረ (ማንበብና መጻፍ የሚችል) 3. አንደኛ ደረጃ (1-8 ክፍል) 4. ሁለተኛ ደረጃና (9-10 ክፍል እና ሰርተፊኬት) 5. ዲኘሎማ እና ከዚያ በላይ	
6	የሥራ ሁኔታ	1. ደመወዝተኛ (ተቀጣሪ) 2. በግል የሚሰራ 3. የቤት እመቤት 4. ሌላ /ይገለጽ/	
7	የቤትሥ የወር ገቢ በገንዘብ ሲተመን ምን ያህል ነው?	ከ400 ብር በታች	
		ከ400 - 1000 ብር ከ1000 ብር በላይ	
8	ወደዚህ ጤና ድርጅት ለመድረስና ለመመለስ የከፈሉት የገንዘብ መጠን በብር	1. ምንም አልከፈልኩም 2. የከፈሉ ከሆነ የገንዘብ መጠን ብር	

9	**አጠቃላይ የወሊድ መረጃ**		
	ስንት ጊዜ አርግዘዋል? (የአሁኑን ጨምሮ)	1. እስከወሊድ የደረሰ እርግዝና ብዛት	
		2. የውርጃ ብዛት	
10	ውርጃ ካጋጠመዎት	1. በራሱ ጊዜ የወጣ ብዛት	
		2. እርስዎ ያስወረዱት ብዛት	
11	ስንት ልጆች ወልደዋል?	1. በሕይወት ያሉ ብዛት	
		2. ከተወለዱ በኋላ የሞቱ ብዛት	
		3. ሞተው የተወለዱ ብዛት	
የቅድመ ወሊድ /የነፍሰጡር/ ምርመራ ክትትል እውቀት			
12	የቅድመ ወሊድ (ነፍሰጡር) ምርመራ ለጤናዎት አስፈላጊነቱን እንዴት ይገነዘቡታል	1. በጣም አስፈላጊ ነው	
		2. በመጠኑ አስፈላጊ ነው	
		3. በጣም አነስተኛ ነው	
		4. አላውቀውም	
13	የነፍሰጡር (የቅድመ ወሊድ) ምርመራ ለሽሉ /በማህፀንዎ ውስጥ ላለው ልጅ አስፈላጊነቱን እንዴት ይገነዘቡታል?	1. በጣም አስፈላጊ ነው	
		2. በመጠኑ አስፈላጊ ነው	
		3. በጣም አነስተኛ ነው	
		4. አላውቀውም	
14	የነፍሰጡር /ቅድመ ወሊድ/ ምርመራ የወር አበባዎ ቀርቶ መቼ ቢጀመር ጥሩ ነው ብለው ያስባሉ?	ወር	
15	በአንድ የእርግዝና ወቅት ስንት ጊዜ ተመላልለው ምርመራ ቢያደርጉ በቂ ነው ብለው ያስባሉ?	አንድ ጊዜ	
		ከሁለት እስከ ሶስት ጊዜ	
		ከአራት እስከ ስድስት ጊዜ	
		ከስድስት ጊዜ በላይ	
		ሌላ ካለ ይግለጹ	

	የቀድሞ እርግዝና አገልግሎት አጠቃቀም ታሪክ		
16	የቅድመ ወሊድ /የነፍሰጡር ምርመራ/ ተከታትለው ያውቃሉ?	1. አዎ	
		2. አላውቅም	
17	የነፍሰጡር ምርመራ ተከታትለው የሚያውቁ ከሆነ የትኛውን እርግዝና ነው?	የመጀመሪያ እርግዝና 1. አዎ	
		2. አይደለም	
		ሁለተኛ እርግዝና 1. አዎ	
		2. አይደለም	
		ሦስተኛ እርግዝና 1. አዎ	
		2. አይደለም	
		አራተኛ እርግዝና 1. አዎ	
		2. አይደለም	
		አምስተኛ እርግዝና 1. አዎ	
		2. አይደለም	
18	ከዚህ እርግዝና በፊት የነበረውን እርግዝና የቅድመ ወሊድ ተከታትለው ከሆነ ክትትሉን የጀመሩት የወር አበባዎ ቀርቶ በስንት ጊዜ ነው?	ወር	
	የአገልገሎት አጠቃቀም መረጃዎች (ከዚህ ቀደም ለነበረው እርግዝና)		
19	ለቅድመ ወሊድ ምርመራ ሲመጡ ምርመራውን ለማድረግ የሚፈጅብ ዎት ጊዜ ምን ያህል ነበር?	1. ሰዓት ለመጀመሪያ ጊዜ 2. ሰዓት ለቀጣዩ ጊዜያት	
20.	ለነፍሰጡር /ቅድመ ወሊድ ምርመራ ገንዘብ መክፈል ተጠይቀው ነበር?	1. አዎ 2. የለም	
21	መልስዎ አዎ ከሆነ ለምን ጉዳይ ነበር የከፈሉት?	1. ለካርድ 2. ለላብራቶሪ 3. ለአልትራሳውንድ 4. ለመድኃኒት 5. ሌላ /ይገለጽ/	
22	የነፍሰጡር /ቅድመ ወሊድ/ ምርመራ የከፈሉት ገንዘብ ካለ በአንድ ምርመራ ከፍተኛው የከፈሉት ገንዘብ ምን ያህል ነው?	1. ከ10 ብር በታች 2. ከ11-20 ብር 3. ከ21-50 ብር 4. ከ50 ብር በላይ	
23	በገንዘብ እጥረት ምክንያት ያላደረጉት ምርመራ አለ?	1. አዎ 2. የለም	
24	በገንዘብ እጥረት ምክንያት ያላደረጉት ምርመራ ካለ የትኛውን ነው ያላደረጉት?	1. ለካርድ 2. ለላብራቶሪ 3. ለአልትራሳውንድ 4. ለመድኃኒት 5. ሌላ /ይገለጽ/	

25	የሚከተሉትን የአገልግሎት አሰጣጥ በእርስዎ የእርካታ መጠን ይግለፁት	1. የባለሙያዎች አቀራረብ	1. በጣም እረክቻለሁ 2. ረክቻለሁ 3. መካከለኛ ነኝ 4. አልረካሁም 5. በጣም አልረካሁም
		2. የላብራቶሪ ምርመራ	1. በጣም እረክቻለሁ 2. ረክቻለሁ 3. መካከለኛ ነኝ 4. አልረካሁም 5. በጣም አልረካሁም
		3. ምርመራው የሚፈጀው ጊዜ	1. በጣም እረክቻለሁ 2. ረክቻለሁ 3. መካከለኛ ነኝ 4. አልረካሁም 5. በጣም አልረካሁም
		4. ገበና አጠባበቅ	1. በጣም እረክቻለሁ 2. ረክቻለሁ 3. መካከለኛ ነኝ 4. አልረካሁም 5. በጣም አልረካሁም
		5. የአገልገሎት ክፍያ	1. በጣም እረክቻለሁ 2. ረክቻለሁ 3. መካከለኛ ነኝ 4. አልረካሁም 5. በጣም አልረካሁም

የአሁኑ እርግዝና መረጃዎች			
26	ማርገዝዎትን በምንድን ነው ያወቁት?	1. የወር አበባ መቅረት /መምጣት/ ከነበረበት አንድ ወር መዘግየት	1. አዎ 2. አይደለም
		2. የወር አበባ መቅረት /መምጣት ከነበረበት ሁለት ወር መዘግየት/	1. አዎ 2. አይደለም
		3. የወር አበባ መቅረት /መምጣት ከነበረበት ሦስት ወርና ከዚያ በላይ/	1. አዎ 2. አይደለም
		4. የሰውነት ለውጥና /የጡት ጫፍ መለወጥና የመሳሰሉት;	1. አዎ 2. አይደለም
		5. ማቅለሽለሽና የመሳሰሉት	1. አዎ 2. አይደለም
		6. የሽንት ምርመራ በማድረግ	1. አዎ 2. አይደለም
		7. በሌላ መንገድ /ይገለጽ/	1. አዎ 2. አይደለም
27	ይህ እርግዝናዎ ያቀዱት ነበር?	1. አዎ	
		2. አይደለም	
28	ይህ እርግዝናዎ በእቅድ ከሆነ በባለቤትዎ ይትወቅ ነበር ነበር ?	1. አዎ 2. አይደለም	
29	ይህ እርግዝናዎ ያለእቅድ ከሆነ ከተረገዘ በኋላ በእርስዎ ይፈለግ ነበር ?	1. አዎ 2. አይደለም	
30	ይህ እርግዝናዎ ያለእቅድ ከሆነ ከተረገዘ በኋላ በባለቤትዎ ይፈለግ ነበር ?	1. አዎ 2. አይደለም	
31	መጀመሪያ ማርገዝዎትን ያበሰሩት /የነገሩት/ ለማን ነው ?	1. ለባለቤትዎ 2. ለእናትናዎ 3. ለእህትዎ 4. ለጓደኛዎ 5. ለሌላ /ይገለጽ/	

የአሁኑ የቅድመ ወሊድ ክትትል መረጃዎች			
32	የቅድመ ወሊድ ነፍሰጡር /ምርመራ አስፈላጊነት ለዚህ ምርመራ ወደ ጤና ድርጅት ከመምጣትዎ በፊት ስለ ጥቅሙ ምክር የሰጠዎት ነበር?	1. አዎ 2. አይደለም	
33	የቅድመ ወሊድ ነፍሰጡር /ምርመራ አስፈላጊነት ጥቅምን እንዴት አወቁት? ተመክረው ከሆነ ምክሩን የሰጠዎት ማነው?	1. የህብረተሰብ ጤና ሠራተኞች 2. በራዲዮ/በቴሌቪዢን 3. ባለቤትዎ 4. እናትናዎ 5. እህትዎ 6. ጓደኛዎ 7. ሌላ /ይገለጽ/	
34	ምክር የሰጠዎት ሰው መቼ ምርመራ ማድረግ መጀመር እንዳለብዎት ነግሮዎታል?	1. አዎ 2. አልነገረኝም	
35	የነፍሰጡር ምርመራ መቼ ማድረግ እንዳለብዎት ተነግሮዎት ከሆነ ወር አበባ ቀርቶ መቼ መጀመር እንዳለብዎት ነው የነገረዎት ?	ከ ወር በኋላ ትክክለኛውን ጊዜ አላውቅም	
36	የአሁኑን የነፍሰጡር ምርመራ ክትትል ወር አበባዎ ቀርቶ ከስንት ወር በኋላ ነው የጀመሩት?	ከ ወር በኋላ	
37	በዚህን ጊዜ ምርመራ ለማድረግ ለምን ፈለጉ?	1. ትክክለኛ የምርመራ ጊዜ በመሆኑ 2. ከበፊቱ በዚህ ጊዜ ምርመራ ስለማደርግ 3 ጊዜ ስለሌለኝ 4. በገንዘብ ችግር 5 እርግዝናው የታቀደ ባለመሆኑ 6. ሌላ /ይገለጽ/	
38	ለመጀመሪያ ጊዜ ለምርመራ ከመጡ በኋላ ሁለተኛውን ክትትል ከመቼ ወር በኋላ እንዲመጡ ነው የተነገረዎት?	ከ ወር በኋላ	
39	ይህ እርግዝናዎ ያለ እቅድ እና ያለፍላጐት ከሆነ ለማስወረድ አስበው ነበር?	1. አዎ 2. አይደለም	

ጊዜዎትን ሰውተው ይህን ጠቃሚ መረጃ ስለሰጡኝ በጣም አመሰግናለሁ። ሌላ አስተያየት ካለዎት ሊነግሩኝ ይችላሉ።

_____

_____

DECLARATION

I the under signed, declared that this thesis is my original work and has not been presented for a degree in this or any other university, and all source materials used for the thesis have been fully acknowledged.

Name of the student :– Serawit Yilala Gebeto (BSc, Midwife, RN)

Signature _____

Date _____

Name of the primary adviser:- Worknesh Sinishaw (RH in Public Health, BSc in nursing, RN)

Signature _____

Date _____