ADDIS ABABA UNIVERSITY
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MAGNITUDE AND FACTORS ASSOCIATED WITH AN UNINTENDED PREGNANCY AMONG WOMEN ATTENDING ANTENATAL CARE IN ADDIS ABABA

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A Thesis to be submitted for the Degree of Master of Art in Population Studies ,Addis Ababa University, College of Development Studies, Center for Population Studies In partial fulfillment of the requirements for the Degree of Science in Population Studies

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Declaration

This is to certify that the thesis prepared by Meseret Tesfaye entitled Magnitude and factors associated with an unintended pregnancy among women attending antenatal care in Addis Ababa. In partial fulfillment of the requirements for the Degree of Science in Population Studies complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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Abbreviations

ANC	Anti Natal Care
AOR	Adjusted Odds Ratio
CDC	Communicable Disease Control
COR	Crude Odd Ratio
CP	Contraceptive
EDHS	Ethiopian Demographic Health Survey
HC	Health Center
MCH	Maternal and Child Health
NSL	Nifas Silk Lafto
PI	Principal Investigator
SDPs	Service Delivery Points
WHO	World Health Organization

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ABSTRACT

Background: Of an estimated 210 million pregnancies that occur in the world each year, 38% are unintended pregnancy, out of which 22% end in abortion. Unintended pregnancy is a global public health problem and its sequels are major causes for maternal and neonatal morbidity and mortality with its effect to maternal mental illness as well. Unintended pregnancies have negative consequences on the women themselves, for their children, siblings and the societies as a whole.

Objective: The purpose of this study was to assess the magnitude and factors associated with an unintended pregnancy among attending antenatal care in Addis Ababa.

Method: An institutional based mixed (quantitative and qualitative) cross-sectional study design was used. The study was conducted between March and April; 2018.Consquentive technique was used to select the study subjects. The sample size required for the study was354.A standardized interviewer administered questionnaire was used to gather information from study participants. Data was cleaned and entered into Epi-data and exported in to a Statistical Package for Social Sciences (SPSS) version 20 for analysis. Descriptive statistics such as frequencies and proportions was produced to describe the variables of interest. Furthermore, logistic regression including bivariate and multivariate analysis was used to identify determinants of an unintended pregnancy. Results were presented in tables, graphs and texts.

Results: Among the all respondents the unintended pregnancy was 30.3% while 69.7% of the pregnancy was wanted. Those who had history of abortion AOR [2.92(1.30, 6.55)] and respondents who have ever used contraceptive AOR [2.1 (1.6, 3.89)] were significantly associated with unintended pregnancy ($p<0.05$).

Conclusion and Recommendation: - This study found that there was a relatively high number of unintended pregnancies and needs education and intervention to decrease unintended pregnancy.

Key words: Unintended pregnancy, Hospital, Health Center, Clinic, Anti Natal Care.

CHAPTER ONE

INTRODUCTION

1.1 Background

Unintended pregnancy is a pregnancy that is reported to have been either unwanted, that is, the pregnancy occurred when no children or no more children were desired or mistimed, that is, the pregnancy occurred earlier than desired. Unintended pregnancy is a core concept that is used to better understand the fertility of populations and the unmet need for contraception (birth control) and family planning.

In 2012 worldwide 80 million mothers had unintended pregnancy (Singh and Darroch, 2012). Regionally, in more developed regions, it is 42 per 1000 women. In less developed regions, from 1000 pregnancies, 57 of them were unintended and the pregnancies end up with unplanned birth, abortion, and miscarriage. Unintended pregnancy is 36 percent higher in developing countries than developed countries (Singh, et al 2010).

Unintended pregnancy is a worldwide problem that affects women, their families, society and their nation. A complex set of social and psychological factor puts women at risk for unintended pregnancy. Abortion is a frequent consequence of unintended pregnancy and in the developing countries can result in serious long-term negative health effects including infertility and maternal death(Singh *et al*. 2010).Unintended pregnancies pose a major and continuing social and health challenge in Africa accounting for more than a quarter of the 40 million pregnancies that occur annually in the region. It is a key risk factor of adverse pregnancy and maternal outcomes including mortality and morbidity associated with unsafe induced abortions (Ochako and Izugbara, 2011).

Addis Ababa city administration is selected because it accommodates people with different cultural backgrounds, norms and values and it has a considerable diversity of socio-demographic status and also according to Addis Ababa health bureau family planning coverage higher compared to other areas.

1.2 Statement of the problem

Unintended pregnancy mainly results from not using contraception, or inconsistent or incorrect use of effective contraceptive methods (CDC, 2017), access to contraceptives, rape, low socioeconomic status and lack of education and information about contraceptive methods (Population Matters, 2010)

Globally it is estimated that there are 87 million cases of unintended pregnancies annually of which 46 million cases resort to induced abortion. Not all cases have access to safe abortion facilities thus 18 million cases end up with unsafe abortion services (Singh, et al 2015; WHO, 2009). From 210 million pregnancies that occur each year, 38% were unintended and out of these unintended pregnancies, 22% end with abortion. Two in five (40%) of these abortions were done on women aged less than 25 years and about 68 000 women die every year from complications of unsafe abortion (WHO, 2009).

The major factors for unintended pregnancy are different for different countries. There have been different factors associated with unintended pregnancy; sex without reliable contraception, sexual coercion, and poor sexual communication between partners, poverty, promiscuity and fear of hormonal contraceptives are some of the factors (Marston and King, 2006).Peer pressure, age, school performance, pocket money, substance use and watching pornographic video (Hong, *et al.* 2010; Amsale and Yemane,2012).

An estimated 50 million induced abortion were performed each year as result of unplanned pregnancies of which 95% of them were in developing countries. In most developing countries, about 20% - 60% of married women or about 120 million women that need to avoid pregnancy become pregnant (WHO, 2011).In sub-Saharan Africa, where about 86 unintended pregnancies occur for every 1000 women, one third of them end with unsafe abortion (Singh et al, 2010). In Ethiopia, the situation is not different from developing countries; women suffer from problem of unplanned pregnancy. According to the Ethiopian Demographic Health Survey (EDHS 2016), about25 % of total last pregnancy was unintended**.**

Unintended pregnancy is a global social and health challenge. In United States51 % of pregnancies are unintended, and North America is the only region of the world in which rates have not declined in the past decade (Singh et al, 2010).In sub-Saharan Africa it accounts for more than a quarter of the 40 million pregnancies that occur annually (Singh et al, 2010).According to the study conducted in Zambia, among the participants those involved in the study, 61.6% had an unplanned pregnancy and 47.7% had a terminated pregnancy (Chandaa, et al, 2016).

The study done in Kenya found that 24 percent of all the women had unintended pregnancy (Ikamari, et al 2013)**.** Amongst 3010 pregnant women, 1150 (38.2%) pregnancies were reported as unintended in Pakistan **(**Habib, et al, 2017**)** and the prevalence of unintended pregnancy among Canadian women was 27 % (Oulman ,et al, 2015)**.**

The findings of the study conducted in Gelamso, Ethiopia showed that out of the 413 pregnancies, 112 (27.1 %) were unintended of which 90(21.9 %) were mistimed, and 22(5.2 %) were unwanted (Mohammed et al, 2016). Another study done in Addis Ababa, Ethiopia found out that 36 %of the pregnant women attending ANC in Health center had unintended pregnancy experience (Tadele et al , 2015).

During the literature search, some of the variables have not been used in the previous studies, such as parity, behavioral character and private hospitals and clinics were not included in the study conducted in Ethiopia, so this is the gap in the previous justified for this study to be conducted. For this reason, this study intends to assess the magnitude and factors associated with an unintended pregnancy among currently pregnant women attending antenatal care in public and private health facilities in Addis Ababa.

1.3. OBJECTIVES

1.3.1 General objective

The ultimate objective of the study was to assess the magnitude and factors associated with an unintended pregnancy among attending antenatal care in Addis Ababa in 2018.

1.3.2 Specific objectives

1. To determine the magnitude of unintended pregnancy among attending antenatal care in Addis Ababa.
2. To identify association of factors with an unintended pregnancy among attending antenatal care in Addis Ababa.

1.4 Significance of the study

Addis Ababa has no adequate data about magnitude of unintended pregnancy and associated factors among currently pregnant women. Therefore, this study can fill the gap in the area of magnitude of unintended pregnancy and act as stepping stone for other researchers to conduct a research on the issue in Ethiopia. Health care providers working on reproductive issue can also use the findings of this study to reduce maternal mortality due to unintended pregnancy.

To make hospital service and health centers evidence based, the hospitals can use this research as to improve their service delivery quality because unintended pregnancy affects not only life of the mother but also child, family and country too.

The study results can be used to design and implement a proper intervention to reduce unintended pregnancy in Ethiopia.

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical Review

Interest in the definition and measurement of unintended pregnancy started in 1941 when fertility surveys were conducted. Around this time new contraceptive technology were being developed and there was an expansion of family planning programs**.** Kane and Staiger's economic model of risky sexual activity is based on rational choice theory. Rational choice theory is a framework for understanding and modeling social behavior. Kane and Staiger's model is predicated on the assumption that women make rational decisions about sexual activity, contraceptive usage, and pregnancy resolution based on a comparison of the respective costs and benefits of each alternative. One of the costs of risky sexual activity is an unintended pregnancy. Women choose the optimal alternative depending on their values and the information they have available to them (i.e., make an economically rational decision). The underlying premise of rational choice theory is that women make choices that are rewarding to them and avoid those that are not. In other words, rational choice theory expects women of childbearing age to respond to incentives (Natalie, 2013).

The Prototype/Willingness model, on the other hand, was designed specifically to apply to unplanned behaviors, such as adolescent smoking. In this model, behavior is socially reactive not rationally planned. The model makes three key assumptions about behavior, which can be applied to childbearing: (CDC, 2017) it is volitional (within one's control), but not necessarily rational or intentional; (Population Matters, 2010) it is social, in that it requires the cooperation of a partner; and (Singh et al, 2012) it has clear social images associated with it. The non - component is called "behavioral willingness," and the images associated with behavior are called "prototypes." The Prototype/Willingness model has been applied to adolescent childbearing – for example, the extent to which a teen's image of the typical or "prototype" unwed teenage parent is positively related to willingness to engage in unprotected sex, independent of intentions to use contraception. Rather than behavioral intentions, this model focuses on behavioral expectations and behavioral willingness. Although individuals may not intend to engage in risky behaviors,

they may find themselves in situations where the opportunity to do so arises. Applied to unintended childbearing, then, rather than ask, "Do you intend to have a birth?" this model asks, "Would you be willing to engage in sexual intercourse without contraception?" The primary distinction here is the reactive rather than deliberate nature of the decision. Similar to the reasoned action and planned behavior models, perceptions that others engage in the behavior and would approve of the behavior (subjective norms), as well as positive attitudes toward the behavior, increase intentions to engage in the behavior. In the prototype/willingness model, however, the focus is on willingness, and positive attitudes toward prototypes increase willingness.

The model can be summarized as follows: positive perceptions of norms, positive attitudes/beliefs/preferences, and positive prototypes increase behavioral expectations and behavioral willingness, which in turn increase the probability of the behavior. In addition, these attitudinal aspects of another domain, activities that compete with the behavior in question, are important as well. Because of its focus on unplanned risky behaviors, this model has great potential to contribute to our understanding of unintended childbearing (Barber et al, 2010).

The economic theory of fertility developed by Gary Becker and advanced by others to incorporate abortion decisions. The choice of having a child is one of potentially life-changing importance. Individuals are prone to make reproductive decisions after giving thought to the costs and benefits of having a child. Costs and benefits are defined in broad terms, which include, but are not restricted to, monetary gains and losses. Financial costs include costs directly related to child-rearing, but also opportunity costs, i.e. the expected loss of time or income related to certain alternative reproductive decisions. Also, psychological and physical costs and benefits may be taken into account when making reproductive decisions. The way in which individuals evaluate costs and benefits depends on certain individual-level traits, such as their education level, their marital status and whether or not they already have children. These individual traits are in part co-dependent on a person's life stage. Women's reproductive decisions are also influenced by their societal context. First, societal contexts most notably laws may influence the accessibility of effective contraceptives. As such, macro-level circumstances may affect the likelihood that women experience unintended pregnancies. However, they also

affect the likelihood that they terminate an unintended pregnancy. Laws are of vital importance here: pregnant women who seek to have an induced abortion may face considerable legal constraints. The degree to which women have access to safe abortion procedures varies within countries over time (Levels et al, 2012).

In summary, the present study will try to apply prototype/ willingness model. Because women who are willing but not intending, do not feel the need to think about consequences and may actually avoid such thoughts because they do not plan to take a risk. And also the prototype/ willingness model provide important information about the psychological processes underlying the decision among women to use contraceptives that can have impact on unintended pregnancy.

2.2. Empirical Review

Unintended pregnant women will have low physical and mental health, low self-care, poor health, high level of substance addiction, and depression during pregnancy (Khajehpour, et al 2013).Besides, fetus will be delivered by unskilled attendant, delivered as low birth weight, increased rate of hospitalization, and poor growth and inadequate immunization adversely leads to maternal and child death (Singh, et al 2012;Singh et al 2015).

Family planning is one of the most effective strategies in reducing maternal death due to unwanted pregnancy and risks of unsafe abortion. It can also prevent closely spaced and ill-timed pregnancies and births, which contribute to high infant mortality rate in developing world (Kassa, Berhane, Worku, 2012).

Many risk factors have been identified for unintended pregnancy. The literature suggests socioeconomic disadvantage, lack of social support, maternal age, parity and maternal behaviors such as smoking and alcohol consumption are the strongest risk factors (Khajehpour et al, 2013; Singh et al, 2015). These risk factors appear to be stable across cultures. A frequent consequence of unintended pregnancy is induced abortion, which is often unsafe in countries where the practice is illegal. Furthermore, births resulting from unintended pregnancy present more adverse maternal and child health outcomes such as delayed prenatal care, premature birth and negative physical and mental health effects (Kassa et al, 2012). All these factors increase health costs for

neonatal care and costs associated with long-term disabilities for women and babies (Singh et al, 2015; Wado etal, 2013).

The most common cause of reproductive mortality is pregnancy and its related problems (CDC, 2017). Unintended pregnancy is an important issue to address because the risk factors of unintended pregnancies are similar to those of maternal mortality, and unintended pregnancy is often an indicator of the presence of risk factors for maternal mortality (WHO, 2009).

Many women with unintended pregnancies delay their prenatal care and engage in adverse health behaviors through the first trimester of their pregnancy (Cheng, et al 2009).For example, mothers with unintended pregnancies are more than twice as likely to report an inadequate consumption of folic acid prior to their pregnancy, putting their newborn at risk of developing neural tube defects. Studies have also shown that women with unintended pregnancies report a greater risk to alcohol exposure during the first trimester, exposing their newborns to elevated risks of developing abnormal fetal growth and morphogenesis (Cheng, et al 2009).

The odds of experiencing an unintended pregnancy were statistically significantly increased if the mother was: less than 20 years of age, immigrated to Canada, had an equivalent of a high school education or less, no partner, experienced violence or abuse and had 1 or more previous pregnancies. Additionally, mothers who reported smoking, drinking alcohol and using drugs prior to becoming pregnant, were all associated with an increased likelihood of experiencing an unintended pregnancy (Oulman et al, 2015).

A study in Pakistan showed that in the multivariate analysis age < 20 years (AOR 3.5 [1.1-6.5]), being illiterate (AOR 1.9 [1.1-3.4]), living in a rural setting (1.7 [1.2-2.3]), having a pregnancy interval of = < 12 months (AOR 1.7 [1.4-2.2]), having a parity of >2 (AOR 1.4 [1.2-1.8]), having no knowledge about contraceptive methods (AOR 3.0 [1.7-5.4]) and never use of contraceptive methods (AOR 2.3 [1.4-5.1]) remained significantly associated with unintended pregnancy (Atif et al, 2017).

Urban women, furthermore, are less likely than rural women to have more children than that which they regard as ideal. Research from different countries also indicate that women with better education levels were less likely than those with less education levels to have more

children than that which they regard as ideal. Moreover, the higher education and the better socioeconomic status a woman had, and then it is less likely for her to have an unplanned pregnancy (Singh et al, 2010; Monea and Thomas,2011).

Previous Studies conducted in different countries showed wide ranges of correlates of unintended pregnancy. Study from Kenya showed the association between unintended pregnancy with marital status, Employment status, ethnicity and residence areas (Ikamari et al, 2013). The analysis of Nepali DHS revealed the association between unintended pregnancy and age of the women, religion, exposure to media, and knowledge of contraceptives (Adhikari et al, 2009). In a study done in Ethiopia, significant association was found between unintended pregnancy and high parity, longer estimate time to walk to nearest health care facility and economic status of the women (Kassa et al, 2012).

A study in Galamso revealed that marital statuses, having more than 2 children, and having no awareness of contraception were significantly associated with unintended pregnancy (Mohammed et al, 2016).

This study will assess to identify the factors like socio demographic (i.e. age, marital status, occupation, income, etc.), behavioral factors (i.e. Smoking, drinking alcohol, chat chewing and watching pornographic video) and reproductive and sexual behavior (i.e. previous pregnancies, information about contraception method, poor sexual communication and fear of hormonal contraceptives) as they have influence on the unintended pregnancy.

2.3 Conceptual framework

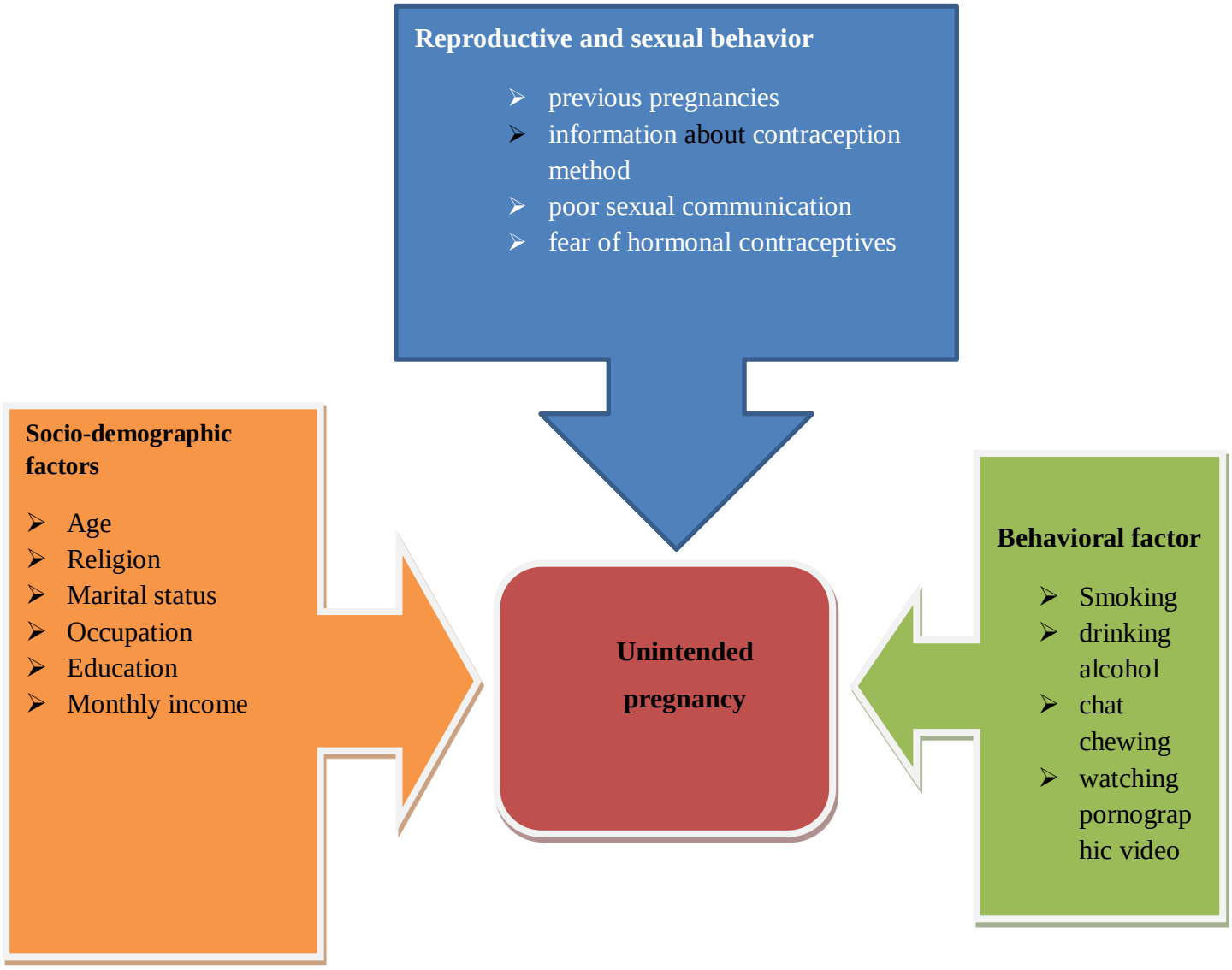


Figure. 1 Schematic presentation of Conceptual framework

CHAPTER THREE

METHODOLOGIES

3.1 Study Area and Period

This study was conducted in public hospitals, public Health Centers, private Hospitals and clinics at Addis Ababa, which is the Capital City of Ethiopia from March to April2018 in the anti natal care units of the service delivery points (SDPs). Administratively, Addis Ababa is divided in to 10 sub cities and 116 weredas with an area of 540 sq.kms and hosting around 4.6 Million populations. There are 13 public hospitals, 38 private hospitals, 95public health centers and more than 850 private clinics which provide different health care services (CSA, 2014).

3.2 Study Design

An institutional based cross-sectional study design with both quantitative and qualitative method was employed.

3.3 Population

3.3.1 Source of population

All pregnant women who are attending ANC at ANC follow up unit of service delivery points in Addis Ababa.

3.3. 2 Study population

All women attending ANC follow up at the selected SDPs in Addis Ababa.

3.4 Inclusion and Exclusion criteria

- **Inclusion criteria** are all pregnant women age greater than 18 and not ill.
- **Exclusion criteria** are pregnant women who are seriously ill.

3.5. Sample Size Determination and Sampling Technique

3.5.1 Sample Size for quantitative part

The sample size was estimated by using single population proportion formula and the proportion of the unintended pregnancy among pregnant women is 36 %which was reported from study conducted in Addis Ababa (Tadele et al, 2015),the level of significance (α) equals to 0.05 and marginal error of 5%.

Using single population proportion formula the sample size calculated:

$$n= \frac{(z\alpha/2)2* p\ (1-p)}{d2}$$

Where:

n = sample size desired

Z α /2= 1.96 (Z=score corresponds to 95% confidence level)

p = 36%

d2= 0.05 (Margin of error)

$$n= \frac{(1.96^2)(0.36(1-0.36))}{0.05^2} = 354$$

The final sample size was 354

3.5.2 Sample size for qualitative part

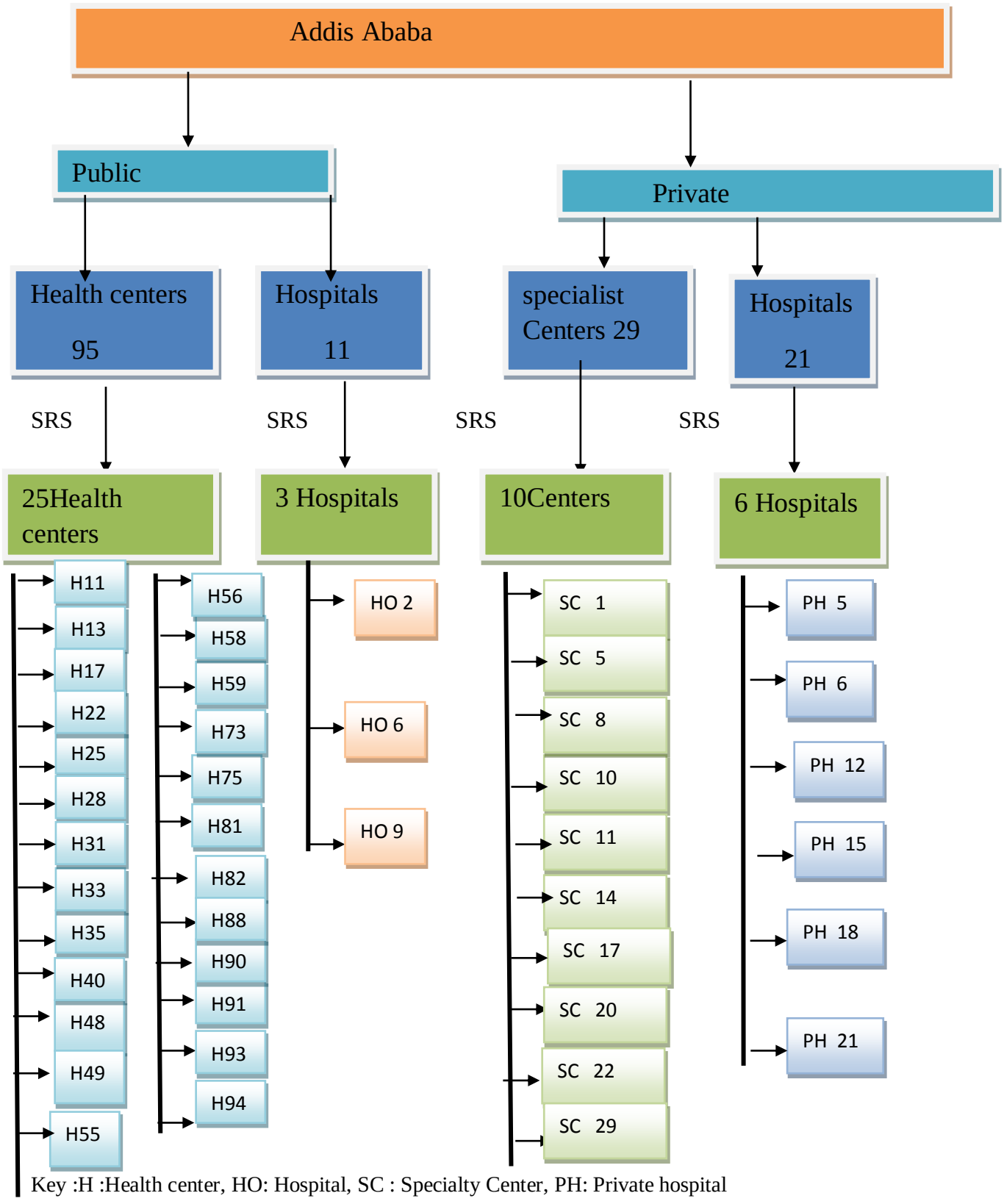
The sample sizes for qualitative part was determined on the basis of theoretical saturation the point in data collection when new data no longer bring additional insights to the research questions.

3.5.3. Sampling Technique

To select the study SDPs simple random sampling technique was utilized. From 11 public hospitals available in Addis Ababa 3were selected randomly, from 95 health centers 25were selected randomly, from 21 private General hospitals 6 were selected randomly and from 29 private specialist centers 10 were selected randomly by using simple random sampling

technique. Sample size was allocated proportionally for both health centers and hospitals. Then to select the study subjects consecutive sampling technique was used in order to gather information from currently pregnant women during the study period.

Among hospitals, health centers and specialty centers those selected randomly for the quantitative part one participants from health center and two participants from hospitals and specialty centers were included in the qualitative part. Since the sample size was based on theoretical saturation the point in data collection when new data no longer bring additional insights to the research questions, four from hospitals and specialty centers and four from health center were purposely included in the study.



Key :H :Health center, HO: Hospital, SC : Specialty Center, PH: Private hospital

Figure 2. Schematic presentation of sampling procedure

Table 1: List of selected health facilities included in the study, Addis Ababa, 2018

Health centres	Hospitals	Speciality centers	Private hospitals
HC2- Gelan health centre	HO 2- Gandhi Hospital	SC 1 –Dinberwa MCH	PH 5 – Kadisco
HC9-Bole wereda 17health centre	HO 6 – Yektit 12 Hospital	SC 5 – Ethiotebib MCH	PH 6 – Kidus Yared
HC17- Saris health centre	HO 9 – Tirunesh Budging Hospital	SC 8- Hymen MCH	PH 12 – Zenbaba
HC22- Gerji health centre		SC 10 – Nain MCH	PH 15 – T/Haimanot
HC25-Kality health centre		SC 11 – Brass MCH	PH 18 – Bethazata
HC28Bulbulahealth centre		SC 14 – Bethel MCH	PH 21 – Yerar
HC31Gotera health centre		SC 17 – Anania MCH	
HC33Kasanchis health centre		SC 20- Arada merie stops	
HC35 Kirkos health centre		SC 22 – Gotara merie stops	
HC40 Yeka wereda 6 health centre		SC 29 –Tsion higher clinic	
HC48Shegole health centre			
HC49Lideta health centre			
HC55Arada health centre			
HC56Inoto number2 health centre			
HC58 Shiromeda health centre			
HC59N/S/L/wereda9health centre			
HC73N/S/L/wereda 5 health centre			
HC75 N/S/L/wereda12health centre			
HC81Churchil health centre			
HC85kuas meda HC			
HC8 7 Addis ketema health centre			
HC90Kolfe health centre			
HC91 Alem banki health centre			
HC93Mikililand health centre			
HC94Kebena health centre			
HC40 Yeka wereda 6 health centre			

Key : HC :Health center, HO: Hospital, SC : Specialty Center, PH: Private hospital, N/S/L Nifas silk lafto, MCH, Maternal and child hospital

Table: 2 Proportional allocation of sample size for each health facilities, Addis Ababa, 2018

Name of health facility	Total population	Sample size	Name of health facility	Total population	Sample size
Gelanhealth centre	400	9	Dinberwa MCH	450	10
Bolewereda 17health centre	270	6	Ethiotebib MCH	390	9
Saris health centre	404	9	Hymen MCH	1546	35
Gerji health centre	181	4	Nain MCH	508	12
Kality health centre	365	9	Brass MCH	1400	31
Bulbulahealth centre	310	7	Bethel MCH	820	19
Gotera health centre	260	6	Anania MCH	236	5
Kasanchis health centre	192	4	Arada merie stops	300	7
Kirkos health centre	160	4	Gotara merie stops	380	9
Yeka wereda 6 health centre	142	3	Tsion higher clinic	250	6
Shegole health centre	140	3	Kadisco Hospital	160	3
Lideta health centre	156	4	Kidus Yared Hospital	160	4
Arada health centre	140	3	Zenbaba Hospital	120	2
Inoto number2 health centre	159	4	T/Haimanot Hospital	320	7
Shiromeda health centre	142	3	Bethazata Hospital	205	4
N/S/L/wereda9health centre	242	6	Yerar Hospital	92	2
N/S/L/wereda 6 health	223	5			
N/S/L/wereda12health centre	411	9			
Churchil health centre	100	2			
kuas meda HC	144	3			
Addis ketema health centre	290	6			
Kolfe health centre	178	4			
Alem banki health centre	196	4			
Mikililand health centre	146	3			
Kebena health centre	182	4			
Gandhi Hospital	670	24			
Yektit 12 Hospital	420	10			
Tirunesh Budging Hospital	833	20			

Key : HC :Health center, HO: Hospital, SC : Specialty Center, PH: Private hospital, N/S/L Nifas silk lafto, MCH, Maternal and child hospital

3.6 Study Variables

3.6.1Dependent variable

- Unintended pregnancy

3.6.2 Independent variables

- Socio demographic characteristics such as age, marital status, educational status, occupation, religion, average monthly income, place of residence.
- Behavioral factors such as Smoking, drinking alcohol, chat chewing and watching pornographic video.
- Other factors such as previous pregnancies, information about contraception method, poor sexual communication and fear of hormonal contraceptives.

3.7 Data Collection Procedure

Quantitative part

The data was collected for 30 days from selected service delivery points. It was collected by interviewing the currently pregnant women who are attending ANC at facility. Amharic Version questionnaire was used for interview. Nine data collectors who have BSc degree in nursing and midwifery were involved in the study. Two MSc Nurses supervised the data collection. For both data collectors and supervisors one day training was given on study objective and data collection technique. Each questioner was checked for completeness and consistency by supervisors and the principal investigator on daily basis.

Qualitative part

In-depth interview was conducted among pregnant women. The principal investigator conducted the interview by using developed interview guide. Informed Consent was taken from each participant for an in-depth interview.

3.8. Data Quality Management

Before actual data collection was started pretest was made on 5% of the study participants on facilities out of Addis Ababa. And necessary amendment was made on the questionnaire. To maintain the quality of the data structured and validated English version of questionnaire was adapted and translated to Amharic by language experts.

To ensure data quality, the data collectors were provided a one day training on the objective of the study, contents of the questionnaire and how to maintain confidentiality and privacy of the study subjects. The data collection process was closely monitored and collected data was checked for any incomplete content by supervisor and then by Principal investigator.

3.9. Data entry and analysis

Quantitative: The data entry and cleaning was undertaken using Epi-data version 3.5.1 and analysis was under taken using SPSS version 20. Each variable was checked for missed values. The strength of association between dependent and independent variables and its significance was computed using odds ratio with 95% confidence interval. Bivariate and multivariate regression analysis was conducted to evaluate relation of independent with dependent variable. Results were presented in tables, graphs and texts.

Qualitative: For the qualitative study each of the in depth interviews was tape recorded and transcribed and translated. Then narration was used to include into this thesis write up.

3.10 Ethical Considerations

Ethical clearance was obtained from the Ethical Review Committee of Center for Population Study, Addis Ababa University College of Developmental Studies and from Ethical Review Committee of Addis Ababa Health Bureau. Participants were informed about the objective of the study prior to the data collection and they were asked for their consent before participating in the study. Participation was voluntarily and participants had the right to refuse or withdraw whenever they want in the middle of data collection. Confidentiality was maintained by omitting their names and personal identifiers throughout the study.

3.11. Dissemination of Results

The result of this study will be submitted to Addis Ababa University, College of Development Studies, Center for Population Studies and to Addis Ababa Health Bureau. The findings will also be disseminated through publishing on national or international journal and presentations on scientific conferences.

CHAPTER FOUR

RESULT

4.1. Background characteristics of respondents

A total of 343 respondents participated in the study making the response rate 96.8%.One hundred nineteen (34.7%) respondents were from age group of <25 with the mean age of 28.34 years. From the study participants,178 (51.1%) were from public health facility while 165 (48.9%) were from private health facility. All of the study participants were urban residents. One hundred eighty six (54.2%) were Orthodox Christians, seventy eight (22.7%) were Muslim, sixty two (18.1%) were Protestant, thirteen (3.8) were catholic and four (1.2%) were among other categories which is wakefeta. Among the study participants, 321(93.6%) were currently in union. Regarding educational status, 258(75.2%) completed secondary and above while one in ten of the respondents did not have formal education. Among the respondents 135 (39.4%) were private employees and34.4% were housewives.Concerning monthly income, 184 (53.6%) reported earning greater than 1501 birr per month (Table3).

Table 3: Socio-demographic status of women attending anti natal care in public and private health facility of Addis Ababa, Ethiopia, 2018

Variables		Number	Percent
Type of facility Public		178	51.1
Private		165	48.9
Age of the	< 25	119	34.7
respondent	25-29	94	27.4
	30-34	73	21.3
	≥35	57	16.6
Marital status	Current not in union	22	6.4
	Current in union	321	93.6
Educational status	Not formal education	33	9.6
	Primary school	52	15.2
	Secondary and above	258	75.2
Religion	Orthodox	186	54.2
	Muslim	78	22.7
	Catholic	13	3.8
	Protestant	62	18.1
	Others	4	1.2
Occupation	House wife	118	34.4
	Student	22	6.4
	Government employee	68	19.8
	Private employee	135	39.4
Monthly income	<500	133	38.8
	501-1000	12	3.5
	1001-1500	14	4.1
	>1501	184	53.6

4.2. Sexual and Reproductive Behavior

4.2.1 Reproductive History of Study Participants

From the respondents, 240 (70%) of them had previously pregnancies history. Regarding frequency of pregnancy, 187 (54.5%) of them said two to three times. who a little above a quarter (27.9%) of the respondents who had a history of abortion, from which 4.5% had two attempts of abortion in their lifetime. Moreover, 41.8% of women who ever had an abortion before had an induced abortion. The majority of the respondents said they had intended pregnancy 239(69.7%). From the women who had unintended pregnancy, 72 (21%) wanted later (mistimed) and the rest 32(9.3%) said they have never wanted the pregnancy (Table 4).

Table 4: Reproductive history of women attending anti natal care in public and private health facility of Addis Ababa, Ethiopia, 2018

Variables		Number	Percent
Total number of life time pregnancy	1	103	30.0
	2-3	187	54.5
	4-6	53	15.4
Number of live children	None	20	8.3
	One	103	42.9
	Two	82	34.2
	Three	25	10.4
	Four	10	4.2
History of abortion	Yes	67	27.9
	No	173	72.1
Number of times respondent had abortion	Once	64	95.5
	Twice	3	4.5
Types of abortion	Induced abortion	28	41.8
	Spontaneous abortion	39	58.2
Wantedness of current pregnancy	Wanted	239	69.7
	Wanted later	72	21
	Never wanted	32	9.3

4.2.2 Family Planning Service in ANC Unit

The majority of the study participants responded they heard about family planning methods. The main sources of information for family planning methods in ascending order of magnitude are media (74.3%), hospital (71.8%), friends (44%), books (38.1%), and internet (35.8%).Regarding the type of methods known, Three hundred nineteen (93.5%) of the respondents mentioned pills, Three hundred seventeen (93.0%)of the respondents mentioned Injectable, Two hundred eight seven (84.2%) of the respondents mentioned Condom, Two hundred seventy (79.2%) of the respondents mentioned IUCD, Two hundred sixty five (77.4%) of the respondents mentioned as a type of family planning method they know.

Concerning the use of contraceptive method 249 (73%) of the participants said they have ever used any type of contraceptive and among them 130(52%) of them mentioned injectable as type of contraceptive ever used. Respondents were asked if they had discussion before contraceptive use for which 166, (66.6) said they had discussion with their husbands and among them 131 (52.4%) said they decided together with their husbands (Table 5).

Table 5: Family planning status of women attending anti natal care in public and private health facility of Addis Ababa, Ethiopia, 2018

Variables		Number	Percent
Awareness about family planning methods	Yes	341	99.4
	No	2	0.6
Source of information*	Media	255	74.3
	Hospital	245	71.8
	Friends	150	44.0
	Books	130	38.1
	Internet	122	35.8
Awareness of CP methods*	Pills	319	93.5
	Injectable	317	93.0
	Condom	287	84.2
	IUCD	270	79.2
	Implant	265	77.4
	Calendar	211	61.9
	Emergency contraceptive	179	52.5
Ever used any type of contraceptive	Yes	249	73.0
	No	92	27.0
Type of contraceptive used*	Injectable	130	52.0
	Pills	109	43.6
	Condom	67	26.6
	Implant	49	19.7
	Emergency contraceptive	33	13.3
	IUCD	32	12.9
	Calendar	21	8.4
Discussion before use	Yes	166	66.6
	No	83	33.4
Who decided for you to use family planning method	Wife	112	44.8
	Husband	6	2.4
	Wife and husband	131	52.4
	Others	1	0.4

***Percentage do not sum to 100as this is result of a multiple response question.**

4.2.3. Behavior of respondents

Regarding behavior of respondents 81 (23.6%), 45 (13.1%), 44 (12.8%) and 6 (1.7%), of the participants responded they drink alcohol, chew chat, watch pornography and smoke cigarette, respectively (Graph 1).

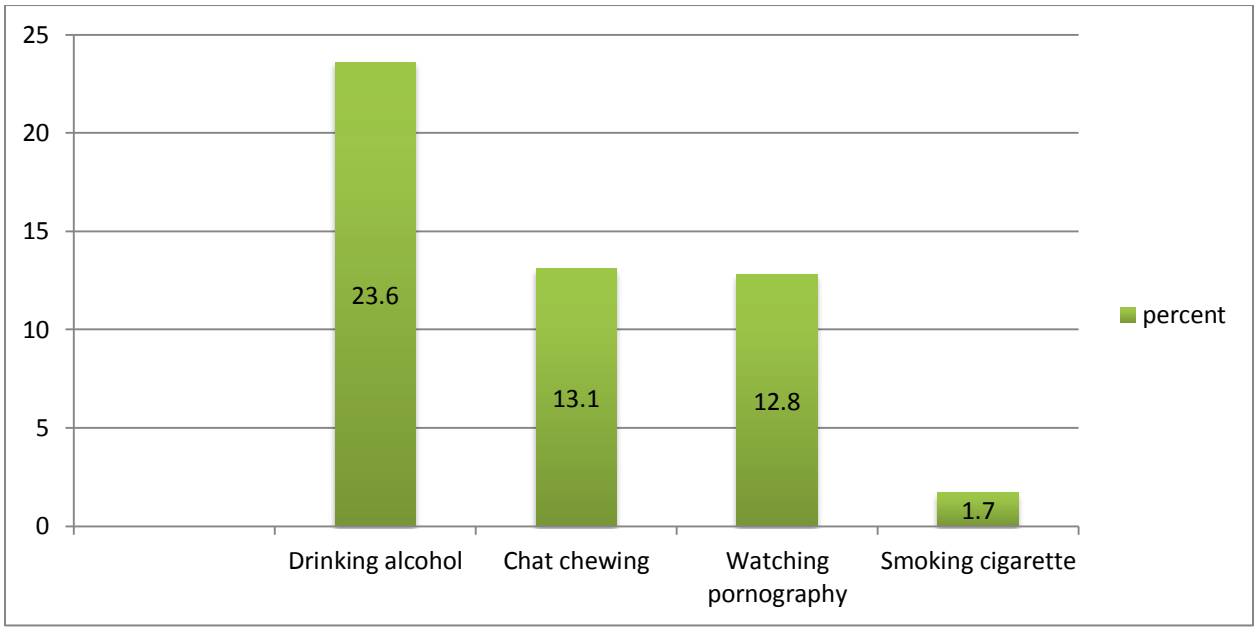


Figure 3: Behavior of respondent's women attending anti natal care in public and private health facility of Addis Ababa, Ethiopia, 2018

4.3. Determinants of unintended pregnancy

4.3. 1 Bivariate analysis and multivariate analysis

In the bivariate analysis, age, marital status, educational status and occupational status were found to be significantly associated with unintended pregnancy. Whereas, there is no association between income and unintended pregnancy.

Study respondents whose age group between 25-29 years were 0.48 times COR [0.48 (0.25-0.94)] less likely to have unintended pregnancy compared with those who are age group <25. Those who are currently not in union COR [4.49, (1.82, 11.07)] were 4.49 times more likely to have unintended pregnancy than those who are currently in union. From the respondents, those

who have no formal education COR [2.98 (1.42-6.23)] were 2.9 times more likely to have unintended pregnancy than those who have educational level of secondary and above. Those study participants who are students COR [4.43(1.71-11.43)], were found to be 4.43 times more likely to have unintended pregnancy than house wives.

From the data gathered concerning abortion and contraceptive status of respondents, those who had abortion, those who used contraceptive and those who decided the type of contraceptive they use by themselves were found to be significantly associated with unintended pregnancy in bivariate analysis. Those respondents who had abortion COR [1.81 (1.01, 3.27**)**] were 1.8 times more likely to have unintended pregnancy than those who has no history of abortion. Study participants who ever used contraceptive COR [1.95(1.10-3.48)] were 1.95 times more likely to have unintended pregnancy than those who did not ever use. Among the study participants, those who said they had no discussion about which contraceptive methods to use [COR [2.42 (1.39-4.19)] were 2.42 times more likely to have unintended pregnancy than those who had discussion. Regarding the question about decision on which contraceptive method to use those who said I decide COR [(4.12(1.68, 10.1)] were 4.12times more likely to have unintended pregnancy than those who said they decided together with their husbands.

Concerning the behavioral assessment of the respondents, drinking alcohol, chat chewing and watching pornography were found to be significantly associated with unintended pregnancy. Whereas, cigarette smoking showed no significant association with unintended pregnancy. Respondents who drink alcohol COR [1.98 (1.18-3.33)], who chew chat COR [2.03 (1.07-3.86)] and those who watch pornography COR [2.13 (1.11-4.06)] were 1.98 times, 2.03 times and 2.13 times more likely to have unintended pregnancy than those who do not drink alcohol, chew chat or watch pornography respectively (Table 6).

In the multivariate analysis majority of the variables which had significant association in the bivariate analysis showed significant association except for decision to use types of contraceptive, alcohol drinking, chat chewing and watching pornography. Study participants who are between age group 25-29 AOR [0.45(0.15, 0.73)] were 0.4 times less likely to have unintended pregnancy than those who are <25 years. The respondents who are current not in

union AOR [6.76 (1.12-18.13)] are 6.76 times more likely to have unintended pregnancy than current in union.

Some of reproductive and family planning factors have significant association in the multivariate association. Those who had history of abortion AOR [2.92(1.30, 6.55) were 2.92 times more likely to have unintended pregnancy than those who had not. Respondents who have ever used contraceptive AOR [2.1 (1.6, 3.89)] were 2.1 times more likely to have unintended pregnancy than those who do not. (Table 7).

Table 6: Association between socio-demographic status, Reproductive, family planning and behavior of women attending anti natal care in public and private health facility and unintended pregnancy, Addis Ababa, Ethiopia, 2018

Variables	**Categories**	**Unintended pregnancy**		**COR**	**95%CI**	**P value**
		Yes	No			
Age	<25	37	82	1		
	25-29	17	77	**0.48**	**(0.25,0.94)**	**0.032**
	30-34	27	46	1.30	(0.70,2.40)	0.40
	≥35	23	34	1.49	(0.77,2.89)	0.22
Marital status	Current not in union	14	8	**4.49**	**(1.82,11.07)**	**0.001**
	Current in union	90	231	1		
Educational status of respondent	Not formal education	18	15	**2.98**	**(1.42,6.23)**	**0.004**
	Primary school	12	40	0.74	(0.37,1.500	0.41
	Secondary and above	74	184	1		
Occupation	House wife	29	89	1		
	Student	13	9	**4.43**	**(1.71,11.43)**	**0.002**
	Government employee	20	48	1.27	(0.65,2.49)	0.47
	Private employee	42	93	1.36	(0.79,2.41)	0.24
Monthly income	<500	41	92	0.75	(0.33,1.68)	0.48
	500-1000	5	7	1.84	(0.37,9.08)	0.45

	1000-1500	6	8	1.53	(0.31,7.41)	0.59
	>1500	52	132	1		
Abortion	Yes	29	38	**1.82**	**(1.01,3.27)**	**0.043**
	No	51	122	1		
Use of contraceptive	Yes	84	165	**1.95**	**(1.10,3.45)**	**0.021**
	No	19	73	1		
Discussion about contraceptive	Yes	45	123	**0.41**	**(0.23,0.71)**	**0.002**
	No	39	44	1		
Who decided for you to use family planning method	My self	51	61	**4.12**	**(1.68,10.10)**	**0.002**
	My husband	1	5	**-**	**-**	**-**
	Me and My husband	31	101	**1**		
Cigarette smoking	Yes	3	3	1.97	(0.22,17.44)	0.54
	No	101	236	1		
Drinking alcohol	Yes	34	47	**1.98**	**(1.18,3.33)**	**0.02**
	No	70	192	1		
Chat chewing	Yes	20	25	**2.03**	**(1.07,3.68)**	**0.029**
	No	84	214	1		
Watching pornography	Yes	20	24	**2.13**	**(1.11,4.06)**	**0.021**
	No	84	215	1		

Table 7: Multivariate association between Age, marital status , Educational status of respondent, occupation, Abortion history ,use ,discussion and decision on types of contraceptive chat chewing ,drink alcohol and watch pornography , of women attending anti natal care in public and private health facility and unintended pregnancy, Addis Ababa, Ethiopia, 2018

Variables	**Categories**	**Un intended pregnancy**		**COR**	**AOR, (95%CI)**
		Yes	No		
Age	<25	37	82	1	1
	25-29	17	77	**0.48**	**0.45(0.15,0.73)**
	30-34	27	46	1.30	0.71(0.23,2.14)
	≥35	23	34	1.49	2.12(0.73,6.10)
Marital status	Current not in union	14	8	**4.49**	**6.76(1.12,18.43)**
	Current in union	90	231	1	1
Educational status of respondent	Not formal education	18	15	**2.98**	**7.4,(1.93,28.94)**
	Primary school	12	40	0.74	1.26(0.41,3.84)
	Secondary and above	74	184	1	1
Occupation	House wife	29	89	1	1
	Student	13	9	**4.43**	**6.96(2.07,13.7)**
	Government employee	20	48	1.27	2.63(0.85,8.10)
	Private employee	42	93	**1.36**	**2.61(1.02,6.86)**
Abortion	Yes	29	38	**1.82**	**2.92(1.30,6.55)**
	No	51	122	1	1
Use of contraceptive	Yes	84	165	**1.95**	**2.10(1.63-3.89)**
	No	19	73	1	1
Discussion about contraceptive	Yes	45	123	**0.41**	0.82(0.28,2.35)
	No	39	44	1	1
Who decided for you to use family planning method	Me	51	61	**4.12**	1.45(0.50,4.25)
	My husband	1	5	**-**	1.13(0.08,14.65)
	Me and My husband	31	101	**1**	1
Drinking alcohol	Yes	34	47	**3.27**	1.91(0.79,4.64)
	No	70	192	1	1
Chat chewing	Yes	20	25	**2.03**	1.50(0.44,5.10)
	No	84	214	1	1
Watching pornography	Yes	20	24	**3.08**	0.83(0.25,2.69)
	No	84	215	1	1

4.9. Qualitative Result

The interviewees were 8 pregnant mothers who were attending ANC at different health institutions.

Table 8: Socio-demographic characteristic of respondents for key informant interview in Addis Ababa, Ethiopia, 2018

Respondent	Facility	Age	Educational level	Occupation
R1	Ghandi Hospital	27	Secondary	House wife
R2	Ghandi Hospital	26	Secondary	House wife
R3	Shiromeda Health Center	32	Primary	House wife
R4	Shegole Health Center	24	Primary	House wife
R5	NSLworeda 12 Health Center	40	Primary	House wife
R6	YekaHealth Center	40	Primary	House wife
R7	Nain MCH	27	Degree	Government
R8	Anania MCH	31	Degree	Private

Key: MCH: Maternal and child hospital R:Respondent

Analysis of qualitative data

Respondent's reasons for the unwanted pregnancy

On assessment of the cause of unwanted pregnancy, majority of the interviewed respondents gave reasons related to contraceptive use. For example, a 27 years old pregnant woman said that:

R1 *"At that moment I didn't want to give birth because both mine and my husband's income was very low and we couldn't afford to raise more than two kids together with house rent fee. Therefore, we had a discussion to use either IUCD or Implant as a contraceptive. We decided on implant and we got that done. However, I started to get sick after few months. My menstrual cycle became irregular and when I was menstruating, I was bleeding heavily and I had pain on my breast. After 3 years, I came back to the hospital and got it removed. They consulted me to come back after I started menstruating to begin another contraceptive and until then I have to use condom. However, I got pregnant in between without my desire. I decided to have it since I do not want to abort for the second time."*

Another 26 years old woman also mentioned that

R2*"I was using injectable as a contraceptive. In between meaning few months after I took the second shot, I heard movement in my stomach and went for checkup where I found out that I am pregnant. However, I did not want to give birth before 5 years."*

And also a 32 years old pregnant mother explained that

R3"I was using implant as a contraceptive but after sometime I became very sick on my breast. When I went to health institution, they asked me the kind of the contraceptive I was using and they said it is the side effect of that. Based on that they consulted me to change another contraceptive or go to the health center, which I got the implant done. Then I went there and told them to get it removed. Shortly after that, I got pregnant. However, I did not want to get pregnant. I have enough children."

A 40 years old pregnant woman explained that

R5" At that time or for the future I do not want to have another child. I was using injectable contraceptive. Because of that, I had irregular menstruation cycle, heavy bleeding and anemia because of that. They gave me tablets for that and my menstruation cycle became regular. I also became careless because of my increasing age. In between that time, I went to the countryside for mourning and I stayed there for 2 weeks, which is past my appointment, and I got pregnant."

Another 40 years old pregnant woman mentioned health issue related to contraceptive use

R6 "I did not have any desire to get pregnant. As I told you, I almost used all types of contraceptives. However, I could not find any contraceptive, which is suitable for my health. Lastly, I was using implant and I got it removed because I had bleeding. I got pregnant shortly after that."

A27 years old women from Nain MCH says

R7"I was not ready to give birth because I'm not married we were cohabiting then he came to our work place stay for a week with me then we had sexual intercourse I had confidence on natural or calendar method but not worked then pregnancy was happened "

A 31 years old woman also mentioned contraceptive related reason

R8*"Unfortunately, my husband died of accident few years ago. Then, when I was struggling to raise my kids by myself, I met with my current boyfriend because of work.He is such a humble and descent person. We started to get to know each other and I become more and more comfortable with him. Eventually, we started having sex. Nevertheless, I never wanted to get pregnant. We were using contraceptives like pills and condom. However, I got pregnant because of unknown reason. I tried to abort but the health professionals said it is past 2 months and trying would harm me. So, I decided to accept the pregnancy keeping in mind I should live for my children."*

Only one of the respondents, a 24 years old pregnant mentioned a reason other than contraceptive related

R4 "I got pregnant immediately after we got married. I did not want to get pregnant at that time. However, I did not have a choice because my husband wanted to have children."

CHAPTER FIVE

DISCUSSIONS

This is a facility based cross sectional study that attempted to assess the prevalence and associated factors of unintended pregnancy at public and private health facilities, Addis Ababa, Ethiopia.

The study found that about one third of respondents (30.3%) had unintended pregnancy. This finding was comparable with the study done in Debre-markos Town where 32.9% of pregnancy was unintended (Addis, Hinsermu and Mulualem.2012). However high number of finding was reported among the study conducted in west Wollega where 36.5% of pregnant women had unintended pregnancy (Fetene T. Teshome etal, 2014). This higher prevalence of unintended pregnancy in this study than the current study could be due to place of residence, methodological difference and also could be due to low medical care help seeking in the rural area. And in the report of EDHS (2016) low number of (25%) unintended pregnancy was mentioned, which might be due to differences in the study setting where the present study focused only on pregnant women attending ANC at the health institution.

In the present study two out of ten pregnancies was mistimed. This finding was consistent with the finding in Debre-markos Town (Fetene T. Teshome et al, 2014) where 23% of the pregnancies were reported as they are mistimed. And also comparable study was reported in the case of research conducted in Addis Ababa among public Hospital showed the number of mistimed which was 21.1%. (Tadele et al, 2015).

In the regression model the factors that were significantly associated with unintended was occupation. House-wife AOR [0.054(0.07-0.42)] was significantly associated with unintended pregnancy. This finding was consistent with the finding in Debre-markos Town where the unemployment respondent's AOR 2.26(1.71-7.61) was associated with unintended pregnancy (Addis etal, 2012).

The current study found that who are between age group 25-29 AOR [0.45(0.15, 0.37)] were 0.45 less likely to have unintended pregnancy compared to with those who are age group <25.

This finding was incomparable with the study done in West Wollega Ganji woreda where Being in age between 35-45 was 6.51 times more likely to become unintended pregnancy as compared to age between 25-29 [(AOR 6.51: 95% CI, 2.73-15.48)] (Fetene, Teshome.2014). This reality might be due to the fact that as the desired number of children declines, the numbers of years during which women are potentially at risk of experiencing an unintended pregnancy increases (Jaeni, McDonald, Utomo, 2007).

In relation to association of contraceptive use and unintended pregnancy those used contraceptive were more likely to have unintended pregnancy compared to those not used contraceptive [(AOR 2.10: 95% CI, (1.63-3.89)]. This finding was incomparable with the finding in the Debre-markos Town where Women who have never used family planning are nearly one and half times more likely [(AOR, 1.51; 95% CI, 1.50-6.45)] to report unintended pregnancy as compared to women who have used family planning (Addis, Hinsermu and Mulualem Merga.2012). This difference could be due to the reason that reported in the current study which shows that a number of unintended pregnancies were occurred due to the gap between changes of the contraceptive type, most of the pregnant women in in-depth interview mentioned that when they changed from one type of contraceptive to another because of side effect they will wait for some days to start the changed one and then till that the pregnancy was happened.

Concerning to the history of abortion the current study found that 27.9%.Among them the majority were Spontaneous followed by induced abortion. In consistent result was reported in the study done in Addis Ababa among public health facilities where 48% had previous abortion with the majority were induced abortion. The difference could be due to difference of study subjects private and public versus only public (Tadele et al, 2015).

6. Strengths and limitation of the study

6.1 Strengths

- ❖ This study explored unintended pregnancy by covering Private and Public health facility
- ❖ Found base line information for future health plan.

6.2 Limitation

- ❖ Since the study design is cross sectional it cannot revealed cause effect

7 CONCLUSION AND RECOMMENDATION

7.1Conclusion

The study found that there was a relatively high number of unintended pregnancy and also came up discussion about contraceptive, history of abortion, use of contraceptive, occupation and age had significantly associated with unintended pregnancy. This indicates unintended pregnancy is one of the major reproductive health problems in the studied area of Addis Ababa.

7.2Recommendation

- Health care providers should consider women those change type of contraceptive because of side effect in order to prevent unintended pregnancy in between
- Health care providers those give service related to family planning should give special attention on students since they are more likely to have unintended pregnancy
- More information should be given for the community on family planning in relation unintended pregnancy.

8. References

Addis Kibret, Hinsermu Bayu and Mulualem Merga.2012.Prevalence of Unintended Pregnancy and Associated Factors among Pregnant Women Attending Antenatal Clinics in Debre-markos Town, North West Ethiopia

Adhikari R, Soonthorndhada K and prasartkul P. 2009. Correlates of unintended pregnancy among currently pregnant married women in Nepal. *BMC Int Health Human Rights; 9(17).*

Amsale , Yemane .2012 .Peer pressure is the prime driver of risky sexual behaviors among school adolescents in Addis Ababa. *Ethiopia World J AIDS; 2:159–164. doi: 10.4236/wja.2012.23021*.

Causes of unintended pregnancies in the UK. 2012. https://www.populationmatters.org/documents/pregnancies_unintended.(Accessed 20/05/2010)

CDC-Unintended Pregnancy Prevention-Reproductive Health,". 2017. http://www.cdc.gov/reproductivehealth/unintendedpregnancy/ (Accessed 15/11/2017)

Central Statistical Agency [Ethiopia] and ICF International. Ethiopia Demographic and Health Survey. 2016. Addis Ababa, Ethiopia and Calverton, Maryland, USA: Central Statistical Agency and ICF International.2016. http://www.measuredhs.com. Accessed on 15/11/2017.

Central Statistics Agency of Ethiopia. 2007.

Cheng D, Schwarz EB, Douglas E, Horon I. 2009. Unintended pregnancy and associated maternal preconception, prenatal and postpartum behaviors. Contraception.; 79(3):194–8 .

Elizaveta Oulman , Theresa H. M. Kim, Khalid Yunis and HalaTamim.2015 Prevalence and predictors of unintended pregnancy among women: an analysis of the Canadian Maternity Experiences Survey. Pregnancy and Childbirth 15:260

Faiza Mohammed, Abdulbasit Musa and Abdella Amano.2016 . Prevalence and determinants of unintended pregnancy among pregnant woman attending ANC at Gelemso General Hospital, Oromiya Region, East Ethiopia: a facility based cross-sectional study. *BMC Women's Health 16:56* DOI 10.1186/s12905-016-0335-1

Fetene Teshome, Abebe Gebremariam Hailu and Aaderajew Nigussie Teklehaymanot.2014. Prevalence of Unintended Pregnancy and Associated Factors among Married Pregnant Women in Ganji Woreda, West Wollega Oromia Region, Ethiopia. *Science Journal of Public Health; 2(2):92-101*

Hong Y, Li L, Yongyi B, Xunyu X, Shiyue L and Jay E.2010. Family and peer influences on sexual behavior among female college students in Wuhan. *Chin Women Health.; 50(8):767–782*

Jennifer S. Barber, Heather Gatny, YasaminKusunoki, and Jennifer Yarger.2010. Attitudes Predicting Pregnancies Reported in an Online Weekly Survey: Preliminary Results. Population Studies Center

Jaeni N, McDonald P and Utomo ID. 2007. Determinants of Unintended Pregnancy among Ever-Married Women in Indonesia: An Analysis of the IDHS. Australian Demographic and Social Research Institute.

Kassa Berhane and Worku .2012. Predictors of unintended pregnancy in Kersa, Eastern Ethiopia. *Reprod Health.;9:1–8.*

Khajehpour M, Simbar M, Jannesari S, Ramezani-Tehrani F, and Majd H.A. 2013. "Health status of women with intended and unintended pregnancies," *Public Health: 127(1) pp. 58– 64*

Lawrence Ikamari, ChimaraokeIzugbara and Rhoune Ochako .2013. Prevalence and determinants of unintended pregnancy among women in Nairobi, Kenya. *Pregnancy and Childbirth, 13:69*

Mark Levels, Ariana Need, RenseNieuwenhuis, Roderick Sluiter and WoutUltee. 2012. Unintended Pregnancy and Induced Abortion in the Netherlands. European Sociological Review

Marston C and King E. 2006. Factors that shape young people's sexual behavior: a systemic review. *Lancet; 368(9547):1581–6.*

Michael M. Chandaa , Katrina F. Ortbladb and Mwale M. 2016. Contraceptive use and unplanned pregnancy among female sex workers in Zambia.

Monea E and Thomas A.2011. Unintended pregnancy and taxpayer spending. Perspect Sex. *Reprod Health.; 43:88–93*

Muhammad Atif Habib, Camille Raynes-Greenow ,SidrahNausheen , Sajid Bashir Soofi , Muhammad Sajid , Zulfiqar A Bhutta and Kirsten I Black.2017 . Prevalence and determinants of unintended pregnancies amongst women attending antenatal clinics in Pakistan. *C Pregnancy and Childbirth 17:156* DOI 10.1186/s12884-017-1339-z

Natalie Dolores Hernandez. 2013. An Exploration of the Meaning and Consequences of Unintended Pregnancy among Latina Cultural Subgroups: Social, Cultural, Structural, Historical and Political Influences.

Ochako R, Izugbara C. 2011. Unwanted pregnancy and pregnancy termination among women in Nairobi. African Population and Health Research Center 25: 1-4.

Singh S and. Darroch J. E. 2012. "Adding it up: costs and benefits of contraceptive services," GuttmacherInst UNFPA, , http:// www.guttmacher.org/pubs/AIU-2012.

Singh, G. Sedgh, and Hussain R.2010 "Unintended pregnancy: worldwide levels, trends, and outcomes," *Studies in Family Planning; 41(4): pp. 241–250.*

Singh, Chalasani, Koenig, and Mahapatra.2012. "The consequences of unintended births for maternal and child health in India," Population Studies, vol. 66, no. 3, pp. 223–239.

Singh, and Thapa.2015 "Adverse consequences of unintended pregnancy for maternal and child health in Nepal," *Asia-Pacific Journal of Public Health*:27 (2),pp.1481–1491.

Tadele Kassie , Geteneh Moges, Ahmed Ali and Worku Tefera. 2015. Magnitude and factors associated with unintended pregnancy among pregnant women in Addis Ababa, Ethiopia. *Global journal of medicine and public health.*

Wado Y.D, Afework M.F and Hindin M.J. 2013 "Unintended pregnancies and the use of maternal health services in southwestern Ethiopia," *BMC International Health and Human Rights (13):1, 36.*

WHO. 2011. Unsafe abortion: global and regional estimates of the incidence of unsafe abortion and associated mortality, 6th Edition. Department of Reproductive Health and Research, WHO.

WHO. 2009. World health report: make every mother and child count. WHO, Geneva.

Annex I: English Version Questionnaire

Addis Ababa University,

College of Developmental Studies Center for population Studies

Informed consent statement

A Questionnaire for the Study of Determinants of unintended pregnancy attending ANC Addis Ababa, Ethiopia, 2018

Good morning/afternoon, my name is ---------- I am working with Meseret Tesfaye who is completing his master's Degree in Addis Ababa University College of Developmental studies, Center for Population Studies. This study is, part of the requirements for the fulfillment of the MSc programme he is enrolled. I would like to ask you questions about some important issues in relation to unintended pregnancy.

Whatever information you provide will be kept strictly confidential and will not be shown to other individuals. Participation in this study is voluntary, If you prefer not to respond to all questions or to some of the questions it is your right and your decision will not affect in any way the services you are receiving at the hospital/clinic and you don't have to answer any question if you don't, and you can stop the interview at any time. However, I hope that you will actively participate in this survey since your views are important. The study may require 15-20 Minuit. So please give me only some minutes to complete my questions.

At this time, do you want to ask me anything about the survey?

May I begin the interview now? (Circle)

1 = Yes 2 = No (End the interview)

Name & Signature of interviewer: _____ Date: _____

Name & Signature of Supervisor: _____Date: _____

Respondents ID number .....Health Institution code……

Part I: Background characteristics of pregnant women attending ANC clinic

Code	Questions	1. Responses
101	How old are you?	_____ (YRS)
102	What is your marital status?	1. Single 2. Married 3. Divorced 4. Widowed 5. Separated 6. Cohabiting(living together)
103	What is the highest level of education you obtained?	1. Not formal education 2. Primary 3. Secondary 4. Higher Education
104	What is your religion?	1. Christian 2. Muslim 3. Catholic 4. Protestant 5. Others(specify)_____
105	What is your occupation?	1. House wife 2. Student 3. Government employee 4. Private employee 5. Others
106	How much is your current monthly income?	_____ (Eth Birr)

Part II: Reproductive History of Pregnant women attending ANC clinic

Code	Questions	Responses
201	Have you ever been pregnant before the current pregnancy	1. Yes 2. No (if no go 207)
202	How many times have you ever been pregnant including this one?	_____ (in number)
203	How many live children do you have that were born to you?	_____(in number)
204	Have you had abortion before?	1. Yes 2. No (If No Go-----207)
205	If yes, how many times?	1. once 2. twice 3. three times 4. four and above
206	Was the abortion induced or spontaneous?	1. induced 2. spontaneous

207	When you got pregnant with your baby, did you want to get pregnant at that time ?	1. Yes wanted 2. Never wanted
208	IF yes for 207 do you think that you become pregnant at the right time?	1. Yes that is right time 2. No

Part III: Contraceptive history of pregnant women attending ANC clinic

Code	Questions	Reopens
301	Have you ever heard about methods family planning?	1. Yes 2. No(If no Go to …305)
302	If yes where did you hear it from?	1. Media 2. Books 3. Internet 4. Friends 5. Hospitals 6. Others_____
303	Types of contraceptive methods you are aware of?	1. Pills 2. Condoms 3. Injec tables 4. IUCD 5. Implant 6. Calendar/ Rhythm 7. Emergency contraceptive 8. Others_____
304	Have you ever used any type of contraceptive to delay or avoid pregnancy?	1. Yes 2. No (If no Go 306)
305	If yes which method have you used?	1. Pills 2. Condoms 3. Injectables 4. IUCD 5. Implant 6. Calendar/ Rhythm 7. Emergency contraceptive 8. Others
306	Do you have discussion about family planning with spouse method you used before using?	1. Yes 2. No
307	Do you have discussion about family planning with spouse used for yourself?	1. You 2. Your husband(partner) 3. You and your husband jointly

Part IV: Behavioral assessment of pregnant women attending ANC clinic

Code	Questions	Responses
401	Do you cigarette smoke?	1. Yes 2. No (If no go to …204)
402	For how many years have you been smoking?	_____
403	How many cigarettes per day do you smoke?	_____
404	Do you drink alcohol?	1. Yes 2. No
405	Do you chew chat?	1. Yes 2. No

Guide for in- depth Interview with currently pregnant women

Qualitative part

Greetings,…….I am currently doing a research to assess Magnitude and factors associated with an unintended pregnancy among pregnant women attending antenatal care in Addis Ababa to fulfill the requirement for masters in Population study. I am here to interview you on some issues which enable us to support the quantitative findings of the study from. Your response to this interview will remain confidential and anonymous.

Are you willing to participate in this study?

1- No (say thank you) 2- Yes (continue interviewing)

Area of Interview: ----------

Age (completed years): ---------- Years

Date of interview/in-depth (Ethiopian calendar) _____/_____/_____

Name of interviewer: ----------

Thank you for your participation in the interview.

In-depth interview guide

1. If you did not want the pregnancy, what was the reasons?
2. If the current pregnancy was mistimed what was the reasons?

Annex II: Amharic version questionnaire

አዲስ አበባ ዩኒቨርሲቲ

የሐገር ልማትና የስነ ሕዝብ ጥናት ትምህርት ክፍል

የስምምነት ማረጋገጫ

ጤና ይስጥልኝ ስሜ……ይባላል፡፡ እኔ ከመሰረት ተስፋዬ ጋር እየሰራሁ ሲሆን ይህ ጥናት በአዲስ አበባ ዩኒቨርሲቲ በድህረ ምረቃ ፕሮግራም የሁለተኛ ዲግሪውን በስነ ሕዝብ ጥናት መስክ ለመመረቅ ከሚያስፈልጉት መስፈርቶች አንዱና ዋነኛው ነው፡፡ የጥናቱ ዋና አላማ ነብሰጡር እናቶች ያልታቀደ እርግዝናን በተመለከተ ያለውን ስርጭትና ተያይዘው ያሉ ምክንያቶችን ለይቶ ለማወቅ እንዲሁም ችግሮቹን በተመለከተ መፍትሄ ለማግኘት የሚካሄድ ጥናት ነው፡፡

በዚህ መረጃ አሰባሰብ ላይ የሚሳተፉት እድሜያቸው ከ18 አመት በላይ የሆኑ ነብሰጡር እናቶች ሲሆኑ እርሶም መስፈርቱን አሟልተው ከተመረጡ እናቶች አንዷ ኖት፡፡ በዚህ ጥናት የሚገኘው መረጃ ለጥናቱ አላማ ብቻ የሚውል ይሆናል፡፡ ከእርሶ የሚገኘው መረጃ ሚስጥራዊነቱ የተጠበቀ ነው እንዲሁም የእርሶ ስም በዚህ መጠይቅ ውስጥ አይጠየቅም፡፡ በዚህ ጥናት በመሳተፎ ባልታቀደ እርግዝና ምክንያት የሚከሰቱትን ችግሮች ለመቅረፍ በሚደረገው ጥረት አካል በመሆኖ ተጠቃሚኖት እንድሁም በዚህ ጥናት በመሳተፎ ምንም አይነት ጉዳት ወይም በአገልግሎት ላይ ሊገጥሞት የሚችል ነገር የለም፡፡ በተጨማሪም የሚጠየቁትን ጥያቄ ሙሉ በሙሉ አለመመለስ ወይንም በከፊል መመለስ በፈለጉ ጊዜ ማቋረጥ መብትዎ ነው፡፡ መጠይቁ 15-20 ደቂቃ ይወስዳል፡፡

ለተጨማሪ መረጃ በስልክ ቁጥር 0911793554 ወይም በኢሜል አድራሻ meserett54@ gmail.com መጠቀም ይችላሉ፡፡

በፍቃደኝነት ስለሚያደርጉት አስተዋጾ በቅድሚያ እናመሰግናለን፡፡

ጥያቀውን ለመቀጠል ፈቃደኛ ኖት

1. አዎ…….. መጠይቁን ይቀጥሉ
2. ኣይደለም…….መጠይቁን ያቁሙና ያመስግኑ

መለያ ቁጥር ……..

መረጃው የተሰበሰበበት ቀን……/……/……

ክፍል I: ማህበራዊና ስነ ህዝባዊ መረጃዎች

ኮድ	ጥያቄ	መልስ
101	እዴሜዎ ስንት ነው?	_____ (በአመት)
102	የጋብቻ ሁኔታ?	1. ያላገባች 2. ያገባች 3. የተፋታች 4. ባሏ የሞተባት 5. የተለያዩ 6. አብረው የሚኖሩ
103	ከፍተኛው የትምህርት ደረጃ	1. መደበኛትምህርትያልሆነ 2. አንደኛደረጃ 3. ሁለተኛደረጃ 4. ከፍተኛትምህርት
104	ሃይማኖትዎ	1. አርቶዶክስ 2. ሙስሊም 3. ካቶሊክ 4. ፕሮቴስታንት 5. ሌላ(ይገለጹ)_____
105	ስራዎት ምንድን ነው?	1. የቤት እመቤት 2. ተማሪ 3. የመንግስት ቅጥረኛ 4. የግል ቅጥረኛ 5. ሌላ(ይገለጹ)_____
106	በራስዎ የሚያገኙት ወርሃዊ ገቢ ሥንት ነው?	_____ (ኢትብር)

ክፍልII: በቅድመ ወሊድ ክትትል ክፍል የሚመጡ እናቶች የስነ ተዋልዶ ታሪክ

ኮድ	ጥያቄ	አማራጭ
201	ከዚህ እርግዝናዎ በፊት አርግዘው ያውቃሉ?	1. አዎ 2. አይ (አይከሆነወደ-----207)
202	ከአሁኑ እርግዝናዎ ጋር ስንት ጊዜ አርግዘው ያውቃሉ?	_____ (በቁጥር)
203	ከወለዷቸው ልጆች ውስጥ በህይወት ያሉት ስንት ናቸው?	_____(በቁጥር)
204	ከዚህ በፊት ውርጃ ኖሮት ያውቃል?	1. አዎ 2. አይ (አይከሆነወደ-----207)
205	መልስዎ አዎ ከሆነ ለጥያቄ 304 ስንት ጊዜ ውርጃ ነበርዎት?	1. አንድጊዜ 2. ሁለትጊዜ 3. ሶስትጊዜ 4. አራት እና ከዚያ በላይ
206	ለ304 ጥያቄ መልስዎ አዎ ከሆነ የውርጃዎች ምክንያት ምንድን ነው?	1. ፈልጌ ነው ያስወረድኩት 2. በራሱ ጊዜ ነው ያስወረደኝ

207	የአሁኑን እርግዝና ሲያረግዙ በጊዜው ማርገዝ ፈልገው ነበር?	1. አዎ ፈልጌ ነው ያረገዝኩት 2. በጭራሽ ማርገዝ አልፈልግም ነበር
208	ለጥያቄ 207 መልስዎ አዎ ከሆነ ማርገዝ የፈለጉት	1. በወቅቱ ነው 2. ቆይቼ ነበር ማርገዝ የምፈልገው

ክፍልIII: / በቅድመ ወሊድ ክትትል ክፍል የሚመጡ እናቶች ስለ ወሊድ መከላከያ ያለቸዉ ታሪክ

ኮድ	ጥያቄ	ማራጭ
301	ስለቤተሰብ ምጣኔ ሰምተው ያውቃሉ?	1. አዎን 2. አይ(ከሆነወደ …305)
302	ለ301 ጥያቄ መልስዎ አዎ ከሆነ ከየትሰሙ?	1. ሚዲያ (ከቴሌቪዥንናራዲዮ) 2. መጸሕፍት 3. ከኢኒተርኔት 4. ከጓደኛ 5. ከሆስፒታል 6. ከሌላ (ይግለፁ)_____
303	ለ301 ጥያቄ መልስዎ አዎ ከሆነ ምንምን አይነት የእርግዝና መከላከያ ዘዴዎችን ያዉቃሉ? (ከአንድ በላይ መልስ ይቻላል)	1. ፒልስ / የሚዋጥ 2. ኮንዶም 3. መርፌ 4. አዩሲዲ/ በማህፀንየሚቀመጥ 5. ኢምፕላንት/ በክንድየሚቀበር 6. ካላንደር/ የወር አበባ ኡደትን በመጠቀም 7. ድንገተኛ የእርግዝና መከላከያ 8. ሌላ_____
304	የወሊድ መቆጣጠሪያ ተጠቅመው ያውቃሉ?	1. አዎ 2. አይ (አይ ከሆነወደ-----306)
305	ለ304 ጥያቄ መልስዎ አዎ ከሆነ የትኛዉን ዘዴ ተጠቅመዋል? (ከአንድ በላይ መልስ ይቻላል)	1. ፒልስ / የሚዋጥ 2. ኮንዶም 3. መርፌ 4. አዩሲዲ/ በማህፀንየሚቀመጥ 5. ኢሚፒላንት/ በክንድየሚቀበር 6. ካላንደር/ የወር አበባ ኡደትን በመጠቀም 7. ድንገተኛ የእርግዝና መከላከያ 8. ሌላ_____
306	ለ304 ጥያቄ መልስዎ አዎ ከሆነ ከመጠቀሞ በፊት ከባለቤትዎ ጋር ተወያይተው ያውቃሉ?	1. አዎ 2. አይ
307	ለ306 ጥያቄ መልስዎ አዎ ከሆነ የትኛውን ዘዴ መጠቀም እንዳለብዎ የሚወስነው ማነው?	1. እርስዎ 2. ባለቤትዎ 3. እርስዎናባለቤትዎ _____

ክፍል IV :የሱስ ተጠቃሚነትን በቅድመ ወሊዲ ክሊኒኪ

ኮድ	ጥያቄ	አማራጭ
401	ሲጋራ ያጨሱሉ?	1. አዎ 2. አላጨሰም (ከሆነወደ …404)
402	ለስንት አመት አጭሰዋል?	_____(በአመት)
403	በቀን ስንት ሲጋራ ያጨሳሉ?	_____(በቁጥር/ፓኬት)
404	አልኮል ይጠጣሉ?	1. አዎ 2. አይ
405	ጫት ይቅማሉ?	1. አዎ 2. አይ
406	የወሲብ ድርጊቶችን የሚያሳይ ፊልም አይተው ያውቃሉ?	1. አዎ 2. አላውቅም