



**የቅዱስ ጳውሎስ
ሆስፒታል ሚሊኒየም ሕክምና ኮሌጅ
St. Paul's Hospital Millennium Medical College**

School of Public Health

**UTILIZATION OF PRECONCEPTION CARE AND ASSOCIATED
FACTORS AMONG PREGNANT WOMEN IN BISHOFTU, OROMIA,
ETHIOPIA, A FACILITY BASED STUDY**

**A Thesis to be submitted to the School of Public Health, St. Paul Hospital
Millennium Medical College in partial fulfillment of the requirements for the
Degree of Master of General Public Health**

Yohannis Gzehagn Adera, MD

January, 2024

Addis Ababa, Ethiopia

St. Paul's Hospital Millennium Medical College

Graduate Study Program

School of Public Health

**UTILIZATION OF PRECONCEPTION CARE AND ASSOCIATED
FACTORS AMONG PREGNANT WOMEN IN BISHOFTU, OROMIA,
ETHIOPIA, A FACILITY BASED STUDY**

Yohannis Gazehagn Adera, MD

Primary Advisor: Yoseph Worku, MD, MPH

Co-advisor: Birhanu Teshome, MPH

**A Thesis to be submitted to the School of Public Health, St. Paul Hospital
Millennium Medical College in partial fulfillment of the requirements for the
Degree of Master of General Public Health**

January, 2024

Addis Ababa, Ethiopia

ACKNOWLEDGMENT

First, I would like to thank God for keeping me safe and helping me develop this thesis from the beginning.

I cannot express enough thanks to my advisor Dr. Yoseph Worku, and Mr. Birhanu Teshome, who has been selflessly committed to guide me. I do offer my sincere appreciation for the learning opportunity they have given me.

I would like to extend my appreciation to St. Paul Hospital Millennium Medical College, the School of Public Health Department, for allowing me to access essential materials for my work; and all the librarians and internet center coordinators for their assistance.

My completion of this thesis could not have been accomplished without your support, my dear friend Dr. Abenezer Abraham, thank you for your senior guidance. All my classmates, it has been such a great time that we have been together, and I will not forget your unreserved encouragement during our stay.

Finally, my thanks also go to my beloved family, whose words meant great comfort and relief while I was at my work. May God keep you safe.

ACRONYMS/ABBREVIATIONS

ANC	Antenatal Care
CDC	Centers for Disease Control and Prevention
CI	Confidence Interval
EDHS	Ethiopian Demographic Health Survey
FMOH	Federal Ministry of Health
HIV	Human Immunodeficiency Virus
LDC	Least Developed countries
LMIC	Lower- and Middle-Income Countries
MMR	Maternal Mortality Ratio
OR	Odds Ratio
PCC	Preconception Care
SPSS	Statistical Package for Social Science
STI	Sexually Transmitted Infections
UK	United Kingdom
USA	United States of America

Table of Contents

ACKNOWLEDGMENT.....	i
ACRONYMS/ABBREVIATIONS.....	ii
List of Figures	v
List of Tables	vi
Abstract.....	vii
1. INTRODUCTION	1
1.1 Background.....	1
1.2 Statement of The Problem.....	2
1.3 Significance of The Study.....	4
2. LITERATURE REVIEW	6
2.1 Utilization of Preconception Care.....	6
2.2 Factors Associated with Preconception Care Utilization.....	7
2.2.1 Socio-Demographic and Economic Factors.....	7
2.2.2 Reproductive, Obstetric and Medical Health Factors	8
2.2.3 Knowledge and Attitude of Preconception Care.....	9
2.3 Conceptual Framework.....	10
3. OBJECTIVES	11
3.1 General Objectives.....	11
3.2 Specific Objectives	11
4. METHODS AND MATERIALS.....	12
4.1 Study Area and Period	12
4.2 Study Design.....	12
4.3 Source Population	12

4.4 Study Population.....	12
4.5 Eligibility Criteria	12
4.6 Sample Size Determination.....	13
4.7 Sampling procedure	14
4.8 Study Variables.....	15
4.8.1 Dependent Variable	15
4.8.2 Independent Variables	15
4.9 Operational Definition	16
4.10 Data Collection Tools and Techniques	18
4.11 Data Quality Control.....	18
4.12 Data Management and Analysis	18
4.13 Ethical Consideration.....	19
5.2 Reproductive and Medical Health Characteristics.....	22
5.3 Knowledge on preconception care	24
5.1.4 Attitude toward preconception care	26
5.1.5 Preconception care utilization.....	29
5.1.5 Factors Associated with Preconception care.....	30
6. Discussion.....	32
6.1 Strength and Limitation of the study.....	34
7. CONCLUSION AND RECOMMENDATION	36
7.1 Conclusion	36
7.2 Recommendations.....	36
8. REFERENCES	37
9. ANNEXES	41
9.1 Annex -1: Information sheet and consent form.....	41
9.2 Annex 2: English version questionnaire	41

9.3 Annex: Questionnaire Amharic Version.....	49
Declaration.....	66

List of Figures

FIGURE 1: FACTORS ASSOCIATED WITH PRECONCEPTION CARE UTILIZATION	10
FIGURE 2: SAMPLING PROCEDURE AMONG PREGNANT WOMEN COMING FOR ANC FOLLOW UP IN BISHOFTU PUBLIC HEALTH FACILITIES	14
FIGURE 3: PRECONCEPTION CARE UTILIZATION OF WOMEN ATTENDING ATENATAL CARE CLINICS OF PUBLIC HEALTH FACILITIES IN BISHOFTU, OROMIA, ETHIOPIA,2023	30

List of Tables

TABLE 1: SOCIODEMOGRAPHIC CHARACTERSTICS OF WOMEN ATTENDING ATENATAL CARE CLINICS OF PUBLIC HEALTH FACILITIES IN BISHOFTU, OROMIA, ETHIOPIA,2023 (N=417).....	20
TABLE 2: REPRODCTIVE AND MEDICAL HEALTH CHARACTERSTICS OF WOMEN ATTENDING ATENATAL CARE CLINICS OF PUBLIC HEALTH FACILITIES IN BISHOFTU, OROMIA, ETHIOPIA,2023	22
TABLE 3: KNOWLEDGE ON PRECONCEPTION CARE OF WOMEN ATTENDING ATENATAL CARE CLINICS OF PUBLIC HEALTH FACILITIES IN BISHOFTU, OROMIA, ETHIOPIA,2023(N=417).....	24
TABLE 4: ATTITUDE TOWARD PRECONCEPTION CARE OF WOMEN ATTENDING ATENATAL CARE CLINICS OF PUBLIC HEALTH FACILITIES IN BISHOFTU, OROMIA, ETHIOPIA,2023(N=417).....	25
TABLE 5: PARTNERS KNOWLEDGE ON PRECONCEPTION CARE OF WOMEN ATTENDING ATENATAL CARE CLINICS OF PUBLIC HEALTH FACILITIES IN BISHOFTU, OROMIA, ETHIOPIA,2023(N=415)	27
TABLE 6: PARTNERS ATTITUDE ON PRECONCEPTION CARE OF WOMEN ATTENDING ATENATAL CARE CLINICS OF PUBLIC HEALTH FACILITIES IN BISHOFTU, OROMIA, ETHIOPIA,2023(N=415).....	28

Abstract

Background: Preconception care is a combination of preventive, promotive health, and social services that are given for women and couples before conception. It consists of biomedical, behavioral, and social health interventions for couples and women before conception. It has vital role in reducing maternal and child mortality, and improving health status of the mother and the child by both direct and indirect effects.

Objective: To determine the magnitude of preconception care utilization and its associated factors among pregnant women attending ANC follow up in public health facilities in Bishoftu city, Oromia region, South-East Ethiopia 2023.

Methods: Institutional based cross-sectional was conducted among 417 women attending ANC clinic in public health facilities in Bishoftu city, Oromia, Ethiopia, from April 20 to June 20, 2023. The collected data was entered into Epi data 3.1.0, then exported to SPSS V.27 for data analysis. Binary logistic regression was used to fit each independent variable into a bivariable logistic regression model separately to explore the association with the dependent variable. Independent variables with a p-value < 0.25 in bivariable logistic regression was considered for multivariable logistic regression analysis. The level of significance was ascertained by odds ratio (OR) with a 95% confidence interval (CI) at a p-value < 0.05.

Results: Among the study participants 140(33.60%) of them had utilized preconception care services from public health facilities. family planning before current pregnancy, Adujested odds ratio (AOR=13.875; 95% CI (6.261, 30.749)), multiy Parity (AOR=17.083; 95% CI (7.035, 41.482)), good maternal knowledge on preconception care (AOR=9.622;95% CI (4.250, 21.785)), and positive maternal attitude toward preconception care (AOR=5.471; 95% CI (2.459, 12.173)) were significantly associated with preconception care utilization

Conclusion: This study showed that preconception care utilization in this study area is low. Family planning use before this pregnancy, multiparity, good knowledge on preconception care and positive attitude toward preconception care were factors which had positive significant association with preconception care utilization

Keywords: preconception care utilization, factors affecting preconception care.

1. INTRODUCTION

1.1 Background

Maternal and child mortality is a major public health concern globally. In order to reduce both maternal and child mortality, a continuum health care package is essential. These services begin from the period of pre-pregnancy and extends to adulthood. However, there are gaps in this continuum care package, and the gaps are mostly evident in preconception care, which is not seriously considered by all stakeholders.(1)

Preconception care is a combination of preventive, promotive health, and social services that are given for women and couples before conception. It consists of biomedical, behavioral, and social health interventions for couples and women before conception. It has vital role in reducing maternal and child mortality, and improving health status of the mother and the child by both direct and indirect effects.(2)

Preconception care services consists of; management of maternal nutritional disorders, screening, and treatment of Human Immunodeficiency Virus(HIV), and other Sexually Transmitted Infections(STIs), family planning services, screening, and treatment of vaccine preventable diseases, prevention and treatment of substance abuse including tobacco, and alcohol use, treatment of subfertility, and infertility, addressing maternal mental health, screening, and treatment of maternal chronic diseases, and prevention of unplanned pregnancies.(3)

Preconception care has a tremendous impact in reducing maternal, and childhood mortalities, and morbidities. Adequate utilization of preconception care will prevent unplanned pregnancies, reduces induced abortions, decreases pregnancy complications, reduces still births, preterm birth, and low birth weights. Furthermore, it has significant benefit in reducing birth defects, neonatal infections, and vertical transmission of Sexually Transmitted Infections(STIs).(4–6)

The magnitude of utilization of preconception care is higher in developed countries; however, in sub-Saharan Africa, it is very low. According to a systematic review and meta-analysis done in Africa, prevalence of utilization of preconception care was found to be 18.72%.(7) Another systematic review and meta-analysis done in 2020 in Ethiopia showed that, the prevalence of utilization of preconception care was 16.27%,(8) which is also very low.

There are several factors that are associated with the utilization of preconception care. Some of the significant factors are knowledge about preconception care, preventing medical conditions, pregnancy intentions, age, parity, occupation, marital status, educational status, and health facility related factors. In developing countries knowledge about the services and accessibility of the services are determinantal factors for utilization of preconception care.(8–11)

1.2 Statement of The Problem

Preconception care is a collective of biomedical, psychological ,and social health services that are given to women or couples before pregnancy, with the aim of improving maternal and child health.(2) delivering optimum quality, and timely health services for improving maternal and childhood health needs a complete package of continuum health care. These services are given as preconception care, prenatal care, intrapartum care, and postpartum care. Due to the improvement in human medicine and technology, the prenatal, intrapartum, and post-partum health care services being delivered in both developed and developing countries are improving. However, there is still significant gap in preconception care utilization. Particularly in Lower-middle-income-countries(LMIC), utilization of preconception care is very low.(1,12,13)

The preconception services have justified benefits in improving the overall maternal, and child health outcomes. Utilization of preconception care prevents unintended pregnancy, induced abortions, still births, spontaneous miscarriages, adverse birth outcomes, and vertical transmission of Sexually Transmitted Infections (STIs). The positive health benefit of preconception begins from healthier mothers, healthier babies, and extends to healthier adolescent and adults. The service package also addresses maternal mental health which is also a neglected issue in the routine maternal and child health care. Furthermore, the availability and utilization of preconception care have huge role in reducing maternal and childhood mortality, and morbidity. (2,14,15)

Maternal and child mortality is decreasing globally; however, it still remains one of the essential public health issues to be addressed vigorously. The condition is worst in least developed countries. According the 2022, Goalkeepers gates foundation report, the global Maternal mortality ratio(MMR),in 2021, was estimated to be 158.8 per 100,000 live births.(16) Maternal mortality ratio (MMR) was very high in least developed countries (LDC), which was 40 times higher than Europe. Sub-Saharan Africa was leading with the highest Maternal mortality ratio(MMR) from

South Sudan(17). In 2020 there was 5 million death in the first five years of life, and 2.4 million death was neonatal death.(18)

According to Ethiopian demographic and health survey(EDHS) 2016, in Ethiopia, maternal mortality was, 412 per 100000 live births.(19) Ethiopian mini demographic and health survey done in 2019, showed that infant mortality rate was 47 deaths per 1,000 live births and the under-5 mortality rate was 59 deaths per 1,000 live births respectively.(20) Integrating the preconception services with other maternal and child care interventions can help in reducing maternal and child mortality and morbidity both directly and indirectly.(21)

Preconception care utilization is higher in developed countries than in developing countries. According to facility based cross-sectional study from China, the prevalence of Preconception care utilization was 42.2%,(22). A facility based cross-sectional study done in London. And Nepal showed the prevalence of preconception care utilization to be 27%(23), and 26% respectively.(24)

However, the utilization of preconception care was very low in Africa. According to systematic review and meta-analysis, the prevalence of preconception utilization was 18.72% in Africa.(7) In Ethiopia the prevalence of preconception care(PCC) utilization was 16.27% according to systematic review and meta-analysis done in 2020.

In Ethiopia the prevalence of utilization of preconception care is low and varied from place to place(8). From community based cross-sectional study, it was found to be 9.6% in Adet,(25) 14.25% in West Shoa,(26)16.2% in Mizan,(27)respectviley. Furthermore, from facility based cross-sectional study done in Hosana,the prevalence of preconception care utilization was 19.65%.(28)

Although, preconception care is the essential tool to fill the gap in the continuum of care, it is not well implemented and utilized in developing nations. Poor utilization of preconception care is a very severe and neglected maternal and child health care area. Still 40% of pregnancies miss essential preconception care services, and 4/10 women had unintended pregnancies, due to poor utilization of preconception care.(29) Considering the benefits in improving the overall maternal and child health, preconception care utilization should be implemented in full scales and all stakeholders should involve in the action.

Several factors were associated with utilization of Preconception care. Maternal educational status, knowledge about preconception care, husband support, family planning use, history of adverse birth outcome, and challenges in visiting health facilities are some of the factors associated with utilization of Preconception care.(9,10,30–32)

In our country utilization of preconception care is not well studied, there are few researches in the field. The magnitude of Preconception care utilization is not established country wide. Although, there are several factors associated with utilization of Preconception care, all possible factors are not included in the previous studies, particularly partner or spouse related factors are not well studied. Our study will investigate partners' knowledge and attitude as a factor contributing to utilization of preconception care, which is not included in the other studies.

Among the few studies done in our country, almost all of them are community based cross-sectional studies, which are prone to high non-response rate, to solve this problem Our study will be a facility based cross-sectional study.it will be conducted on pregnant women and by assessing preconception care utilization for the recent pregnancy, it will reduce recall bias. With the aim of investigating the magnitude of utilization of preconception care and associated factors in our study area; our study will fill the gap in knowledge in the field of study. Furthermore, to my knowledge, another study has never been conducted in the area.

1.3 Significance of The Study

The study will contribute to the available knowledge in the area and in solving g practical problems in the field. There will be a huge benefit from this study both for individuals and the community as a whole. The health professionals who work in different public health facilities in Bishoftu city will also be benefited from the study in terms of gaining new insight and knowledge about the magnitude of the problem and the gap in service delivery.

The local community will also be benefited from the study in gaining new knowledge and attitude about preconception care, and its impact on maternal and child health outcomes. Bishoftu health office will use the study results to identify gaps in the service delivery and to implement new strategies to enhance preconception care service delivery.

FMOH can also use the study results in order to review the policies regarding preconception care and can implement programs to integrate preconception care services with other maternal and child

health services. All other stakeholders including Non-governmental organizations can use the result of this study and will fund projects that will enhance preconception care utilization. Furthermore, the result of this study will be published on scientific journal and will be used as a new knowledge resource.

2. LITERATURE REVIEW

2.1 Utilization of Preconception Care

The prevalence of preconception care utilization is higher in developed countries than in developing countries. According to facility based cross-sectional study done in United states of America(USA), the prevalence of preconception care utilization was 81% for women and 38% for men.(33) In addition to this a facility based cross-sectional study from United Kingdom(UK) showed that 51% of the women had utilized preconception care.(23) Another facility based cross-sectional study done in china showed the prevalence of preconception care to be 42.2%.(22) In developed nations the magnitude of preconception care utilization is high because of the development in health infrastructure and integrated policies of health programs.

In contrast to the higher magnitude of preconception care in developed nations, the situation in developing nations was so different. According to facility based cross-sectional study done in Bangladesh, Sir lanka, and Nepal, the prevalence of preconception care utilization was found to be 33%(34), 27.2%(35), and 26%(24) respectively. This shows that the magnitude of the coverage of preconception care in developing countries is far behind the developed nations.

In Africa the magnitude of preconception utilization was found to be very low. According to systematic review and meta-analysis done in Africa, the prevalence of preconception care utilization was 18.72%.(7) A facility based cross-sectional study done in Nigeria showed that 18.8% pregnant women had utilized preconception care.(36) A descriptive community based mixed cross-sectional study from Kenya revealed that 20.3% pregnant women had utilized preconception care.(31) Overall the coverage of preconception care in Africa is very low.

In Ethiopia the prevalence of preconception care utilization was very low. According to systematic review and meta-analysis done in Ethiopia the magnitude of preconception care utilization was found to be 16.27%.(8) A community based cross-sectional study done in Adet, West Shoa, Mekele, and West Guji Zone revealed the prevalence of preconception care utilization to be 9.6%(25), 14.5%(26), 18.2%(37), and 22.3%(30) respectively. Furthermore, one facility based study conducted in Hossana showed that 19% pregnant women utilized preconception care.(28)

2.2 Factors Associated with Preconception Care Utilization

2.2.1 Socio-Demographic and Economic Factors

According to facility based cross-sectional study from Kenya, maternal age ≥ 30 was significantly associated with higher likelihood of utilizing preconception care.(10) This finding was supported with a facility based studies done in Brazil, Nigeria and China, which showed older maternal age to be positively correlated with utilization of preconception care.(22,36,38) however, a community based cross-sectional study from Mizan Aman showed a contrasting finding which stated, younger age women were more likely utilized preconception care.(39)Although, a facility based study done in Nigeria revealed no association between maternal age and preconception care utilization.(40)

A community based cross-sectional study from Southern Ethiopia showed mothers with educational level of collage and above had higher likelihood of utilizing preconception care than those below them.(9) A facility based cross-sectional from Nigeria was also consistent with this finding and showed mothers who had university degree had higher utilization of preconception care.(40) According a community based cross-sectional studies done in Guji Zone and Mizan Aman, mothers who attended secondary and tertiary education had 4.46(30) and 2.16(39) times more likely in utilizing preconception care services. A community based cross-sectional study done in Adet was also consistent with the above findings in presenting maternal educational status as a significant determining factor for utilization of preconception care.(25)

A community based cross-sectional study from West Shoa indicated women who had a better family income were four times more likely to utilize preconception care.(26) A community based cross-sectional study done in Guji Zone was consistent with finding and stated that mothers with a better wealth status were 4.23 times more likely to utilize preconception care.(30) A similar cross-sectional study from Mizan Aman showed positive correlation between wealth status of the mother and utilization of preconception care.(39)

According to a community based cross-sectional study from Northern Ethiopia, mothers with any kind of challenge in visiting health facilities were 76% less likely to utilize preconception care.(37) Similar cross-sectional studies from Southern Ethiopia and Mizan Aman Town were consistent with above findings and showed mothers who spent less than 30 minutes to get to health facilities were 69%(9) more likely to utilize preconception care and 1.4(39) times more likely to utilize preconception care services respectively.

However, a facility based cross-sectional study from Nepal showed no significant association between socio-demographic factors and the utilization of preconception care.(24)

2.2.2 Reproductive, Obstetric and Medical Health Factors

A facility based cross-sectional study from Nigeria indicated significant association between parity and utilization of preconception care. primiparous women had 41% more chance of utilizing preconception care than their multiparous counterparts.(40) a similar cross-sectional study from china supported the above finding.(22)However, a community based cross-sectional from Adet contradicted with the above statement and showed multiparous women had 2.3 times more likelihood of utilizing preconception care than primiparous women.(25) Despite this a cross-sectional study from Kenya indicated no association between parity and utilization of preconception care.(10)

According to facility based study from Hossana those mothers who had previous adverse birth outcomes had 3.15 times more likelihood of utilizing preconception care than those who didn't have adverse birth outcome.(28) a community based cross-sectional study from Mekele also supported this and showed there were 5 times more likelihood of utilizing preconception care for mothers with previous adverse birth outcomes.(37) A similar cross-sectional study from Mizan Aman was also in favor of this and indicated mother who had never experienced adverse birth outcomes were 68% less likely to utilize preconception care services.(39)

A facility based cross-sectional study from Brazil revealed higher utilization of preconception care in women who had planned their pregnancy.(38) A systematic review and meta-analysis done in Africa also indicated mother who had pregnancy intention were 2.5 times more likely to utilize preconception care.(7) Additionally a facility based cross-sectional study from china was consistent with the above finding and indicated unplanned pregnancy as significant negative predictive factor for preconception care utilization.(22)

According to a community based cross-sectional study done Iran mothers who had chronic medical conditions had higher likelihood of utilizing preconception care.(41) A similar cross-sectional study from Mekele indicated mothers who had chronic medical conditions were 6 times more likely to utilize preconception care than those without chronic conditions.(37) However, a systematic review and meta-analysis from Africa contradicts the above finding and indicated mothers with chronic medical conditions were 29% less likely to utilize preconception care.(7)

A community based cross-sectional study from Guji Zone indicated those mothers who made reproductive health decisions with their partner were 4.7 time more likely to utilize preconception care services.(30) A similar cross-sectional study from Mekele was consistent with this finding and indicated mothers who had partners' support were nearly 14 times more likely to utilize preconception care than those who didn't get the support.(37)

2.2.3 Knowledge and Attitude of Preconception Care

According to a community based cross-sectional study from Southern Ethiopia those mothers who had a good knowledge of preconception care had 34% higher chance of utilizing preconception care.(9) A facility based cross-sectional study done in Addis Ababa was also consistent with this finding and indicated mother with adequate knowledge of preconception care were 10.34 times more likely to utilize preconception care than those with poor knowledge of preconception care.(42)

Furthermore, a community based cross-sectional studies done in West Shoa, Guji Zone, and Mekele were consistent with above finding and indicated mothers who had a good knowledge of preconception care were 4(26), 2.34(30), and 2(37) times more likely to utilize preconception care respectively. A similar study from Mizan Aman also indicated women with positive attitude about preconception care had 40% higher chance of utilizing preconception care services.(39) Although maternal knowledge of preconception care was a significant positive predictive factor for utilization of preconception care partners' knowledge of preconception care was not included in any of the above studies.

2.3 Conceptual Framework

The following diagram shows the conceptual framework that indicates how the outcome variable Preconception care (PCC) utilization interacts with the lists of independent variables from the Socio-demographic and Economic factors, Reproductive, Obstetric and Medical factors, and Knowledge and Attitude of preconception care from the reviewed literature by the researcher.

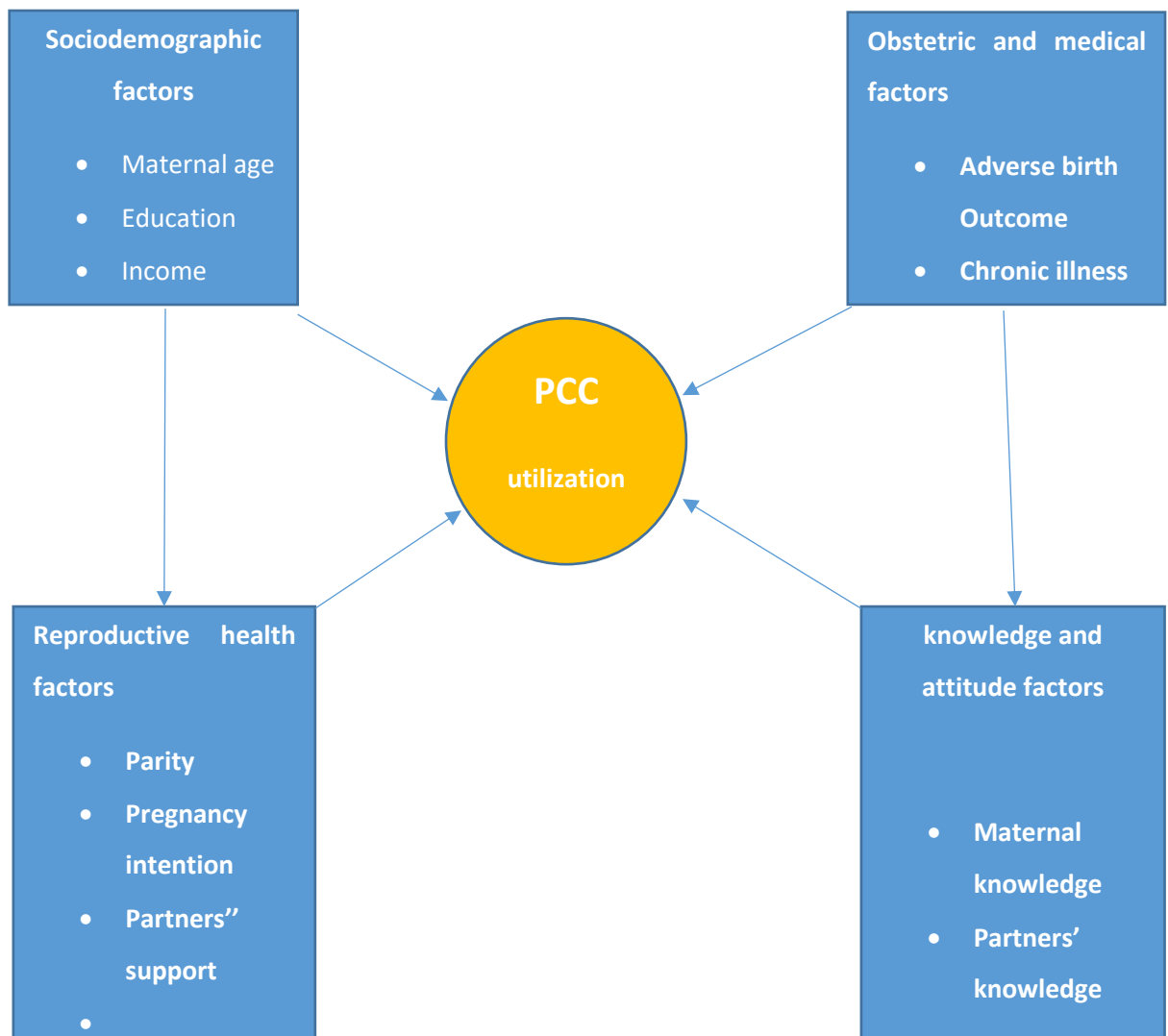


FIGURE 1: FACTORS ASSOCIATED WITH PRECONCEPTION CARE UTILIZATION (ADOPTED BY THE INVESTIGATOR)

3. OBJECTIVES

3.1 General Objectives

- To determine the magnitude of preconception care utilization and its associated factors among pregnant women attending ANC follow up in public health facilities in Bishoftu city, Oromia region, South-East Ethiopia 2023

3.2 Specific Objectives

- To determine the magnitude of preconception care utilization among pregnant women attending ANC follow up in public health facilities in Bishoftu city, Oromia region, South-East Ethiopia 2023
- To identify factors associated with preconception care utilization among pregnant women attending ANC follow up in public health facilities in Bishoftu city, Oromia region, South-East Ethiopia 2023

4. METHODS AND MATERIALS

4.1 Study Area and Period

The study was conducted in Bishoftu City, which is found in East Showa Zone, Oromia, South-East Ethiopia. It is located 47 KM from the capital Addis Ababa.. According to the data from the Ethiopian Central Statistical Agency, the total population as of July 2021 was 197,557; of this, 93,631 were males and 103,926 females.(43) According to data from Bishoftu Health Office, the City has 14 kebeles. There is one general public hospital, one private primary hospital, four public health centers, one private health center, and sixteen private clinics.(44) The study was conducted in Bishoftu General hospital, Bishoftu,Babogaya,Cheleleka, and Ketta health centers respectively. The monthly average number of pregnant mothers attending ANC follow up in the above public health facilities were 275,128, 138, 113, and 196 respectively.(44) The study was conducted from April 30, 2023, to June 30, 2023, GC.

4.2 Study Design

The study design was a facility-based cross-sectional study

4.3 Source Population

All pregnant mothers who came to Bishoftu public health facilities for ANC follow up

4.4 Study Population

All randomly selected pregnant women who came to Bishoftu public health facilities for ANC follow up during the data collection period.

4.5 Eligibility Criteria

Inclusion criteria

All pregnant women who were 18 years old and above, who came to Bishoftu public health facilities for ANC follow up and lived in Bishoftu for the last six months

Exclusion criteria

Severely ill, was excluded in the study.

4.6 Sample Size Determination

Sample size was determined for each specific objective. For the first objective, the sample size was calculated using the single population proportion formula, which is given as

$$n = \frac{z^2 p(1 - p)}{D^2}$$

Taking the proportion of preconception care utilization of 56.2% from the previous facility based cross-sectional study done in Addis Ababa(42), assuming 95% CI, 0.05 significance level, and taking the margin of error of 0.05, the sample size was calculated as follows

$$n = \frac{1.96^2 * .562(1-.562)}{(.05*.05)}$$

$$= 379$$

Taking the non-response rate of 10%, the final minimum sample size was, 379*1.1= 417, this was the sample size for the first objective.

The sample size for the second objective was calculated using EPI INFO v 3.1.0 with the following assumptions.

Associated factors	% outcome in unexposed groups	Odds ratio		power	Confidence level	Sample size	Reference
Parity	31.7	4.64		80%	95%	67	(42)
Knowledge of PCC	10.4	7.22		80%	95%	61	

4.7 Sampling procedure

The study was conducted in Bishoftu General hospital, Bishoftu, Babogaya, Cheleleka, and Ketta health centers respectively. The monthly average number of pregnant mothers attending ANC follow up in the above public health facilities were 275,128, 138, 113, and 196 respectively. The the total sample size was proportionally allocated to each respective health facilities.

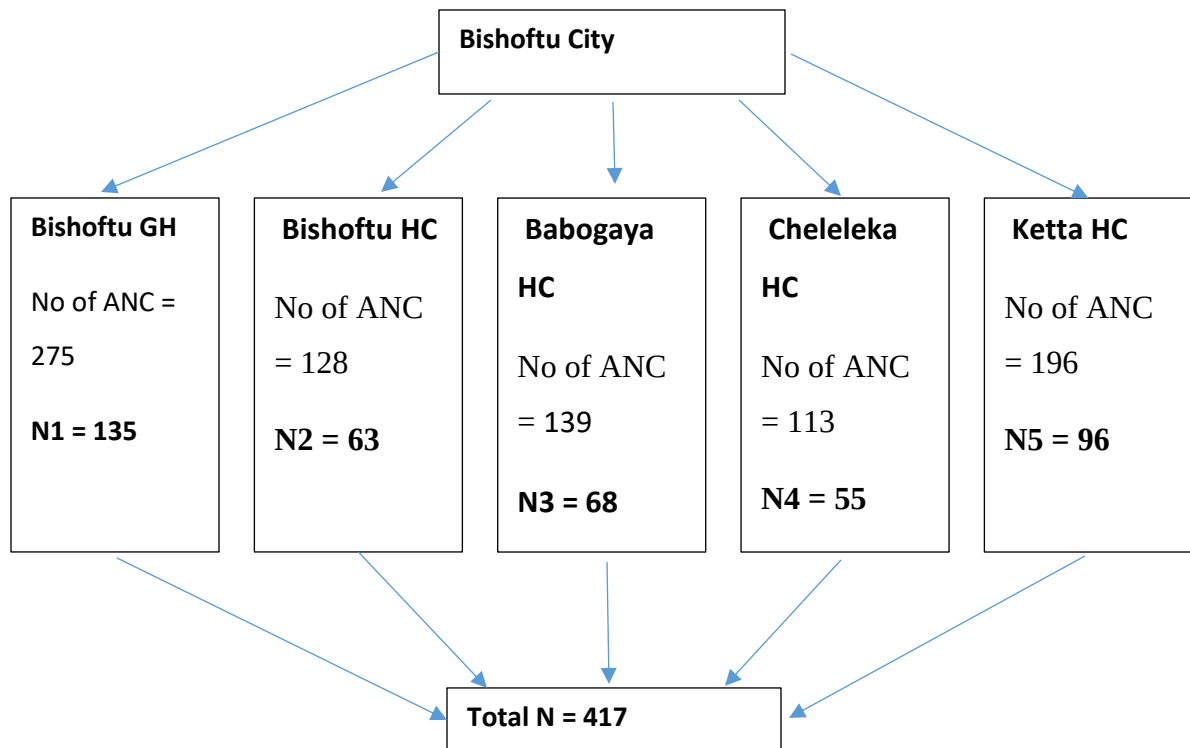


FIGURE 2: SAMPLING PROCEDURE AMONG PREGNANT WOMEN COMING FOR ANC FOLLOW UP IN BISHOFTU PUBLIC HEALTH FACILITIES

Then, a systematic random sampling technique was used to select each study participant from each health facility. Systematic sampling technique was used to select participants by considering the

Kth value. The Kth value was calculated by multiplying the total monthly expected number of mothers coming for ANC follow up by two which is the study period in months and dividing by sample size, which was $(851 * 2) / 417 = 4$. Then the 1st mother was selected by lottery method and then every fourth women were taken until the required sample size will be fulfilled.

4.8 Study Variables

4.8.1 Dependent Variable

- Preconception Care Utilization

4.8.2 Independent Variables

Socio-demographics and Economic factors

- Maternal Age in years
- Marital status
- Maternal educational status
- Husband education
- Maternal Occupation
- Husband occupation
- Average monthly income
- Ethnicity
- Religion
- Time spent to reach health facility

Reproductive Health Factors

- Gravidity
- Parity
- Previous use of family planning
- Frequency of Antenatal care
- Partners' support for PCC
- Planned current pregnancy

Obstetric and Medical Factors

- Experienced pregnancy related complication previously
- Type of pregnancy related complication
- Experienced adverse birth outcomes previously
- Type of adverse birth outcome
- Medically confirmed disease
- Type of medically confirmed disease

Knowledge and Attitude of PCC

- Maternal knowledge of PCC
- Maternal Attitude of PCC
- Partners' knowledge of PCC
- Partners' Attitude of PCC

4.9 Operational Definition

Preconception care services

Preconception care services assessed by this study are screening & treatment for chronic medical diseases, screening & treatment for STIs, HIV testing & counselling, diagnosis & treatment for infertility/sub-fertility, getting vaccination for tetanus, taking folic acid supplementation, follow-up and care for preexisting chronic medical condition, follow-up and care for previous adverse pregnancy & birth outcomes, weight management, diet modification, avoiding smoking & drinking alcohol, avoiding teratogenic & illicit drugs, avoiding chemical/radiation exposure in occupational, environmental and medical settings.(28)

Utilization of preconception care

If a women received at least one type of intervention, either advice or treatment, and lifestyle modification care (screen for any disease and get treatment, take folic acid, take vaccine, get counseling, modify diet, cessation of alcohol, cessation of cigarette smoking, stop taking of illegal drugs, plan pregnancy, create healthy environment) at least once before being pregnant were considered as mother utilized PCC.(30)

Maternal knowledge on preconception care

Women level of knowledge was measured using 10 questions measuring level of knowledge on preconception care. Each question had one correct answer. The score for each correct answer was one point and the score for each incorrect answer was zero point. Responses for each question was added and the total score was in range from 0–10 points. Those respondents who scored $\geq$ mean was labeled as having “good knowledge” and those respondents who scored $<$ mean was labeled as having “poor knowledge”(26,28)

Maternal Attitude towards preconception care

Women attitude towards preconception care was measured using 12 Likert scale questions with five scales (strongly agree, agree, neutral, disagree, and strongly disagree). The score was (strongly agree = 5, agree = 4, neutral = 3, disagree = 2, and strongly disagree = 1) for positive statements and vice versa for negative statements and the total score was in range from 12–60 points. Responses for each question was added & divided by 12; which was the total number of questions to compute for mean. Those respondents who scored $\geq$ mean & $<$ mean was labeled as “positive attitude” and “negative attitude” respectively.(28,45)

Partners’ Knowledge on preconception care

Partners’ level of knowledge will be measured using 10 questions measuring level of knowledge on preconception care. Each question had one correct answer. The score for each correct answer was one point and the score for each incorrect answer was zero point. Responses for each question was added and the total score was in range from 0–10 points. Those respondents who scored $\geq$ mean was labeled as “good knowledge” and those respondents who scored $<$ mean was labeled as “poor knowledge.”(28)

Partners’ Attitude towards preconception care

Partners’ attitude towards preconception care was measured using 12 Likert scale questions with five scales (strongly agree, agree, neutral, disagree, and strongly disagree). The score was (strongly agree = 5, agree = 4, neutral = 3, disagree = 2, and strongly disagree = 1) for positive statements and vice versa for negative statements and the total score was in range from 12–60 points. Responses for each question was added & divided by 12; which was the total number of questions to compute for mean. Those respondents who scored $\geq$ mean & $<$ mean were labeled as “positive attitude” and “negative attitude” respectively.(45)

4.10 Data Collection Tools and Techniques

The questionnaire was prepared based on the reviewed previous literatures and CDC preconception care guideline.(28,30,37,45) The questionnaire was prepared in English and then translated to Amharic and Afan Oromo. The questionnaires were composed of eight parts, the first part was socio-demographic that comprises of 10 items. Part 2 was reproductive and medical health that comprised of 12 items. The third part was maternal knowledge of preconception care related, and it contains 10 items. The fourth part was about maternal attitude toward preconception care, which contains 12 items of 5-point Likert scale to measure attitude towards preconception care. Response categories are 5-point Likert scales ranging from 1 strongly disagree to 5 strongly agree. During analysis, the Likert scale items will be categorized into two response categories to compute women's attitude on preconception care. All scores were summed and transformed to percentage. The fifth and sixth parts were the same knowledge and attitude assessment questions for maternal partners. The seventh part of questionnaires was related to preconception care utilization, which comprises 15 yes /no format response that measures, the outcome variable.(28,30,37,45)

4.11 Data Quality Control

Five midwives were recruited for the data collection task, and a supervisor was also assigned to monitor the data collectors on the data collection tasks. Training was given for the data collection team for two days, and the training focused on the study's objective, data collection tools, data collection procedures, and confidentiality of the client's information. The questionnaires' was pretested in other unselected public health institutions on 21 random mothers by taking the recommended 5% of the estimated sample size. The researcher supervised the data collection team; through all the processes, there was a data audit for completeness and legibility for each data collection form.

4.12 Data Management and Analysis

The collected data was checked for clarity and completeness, then coded, verified, and categorized. After that, it was entered into Epi data 3.1.0, then exported to SPSS V.27 for data analysis. Frequency tables, and pie charts were used to present the information.

Descriptive statistics such as frequencies, proportions, and summary statistics were computed. First, simple binary logistic regression was used to explore the association with the dependent

variable. Independent variables with a p-value < 0.25 in the simple/bivariate logistic regression was considered for multivariable logistic regression analysis. The goodness of fit of the tests was checked using Hosmer and Lemeshow tests which showed (p value of 0.994, with chi-square of 1.070). there is no multicollinearity between independent variables.

Factors that will independently be associated with utilization of preconception care was identified using multivariable logistic regression, and the level of significance was ascertained by odds ratio (OR) with a 95% confidence interval (CI) at a p-value < 0.05

4.13 Ethical Consideration

Ethical clearance was obtained from St. Paul's Hospital Millennium Medical College, the School of Public Health, Ethical Review Committee. A letter of permission and support was written to the Bishoftu health office and the public health facilities in Bishoftu. The study subjects were informed about the study's objective, their right to refuse to participate, and the confidentiality of their information. Informed consent was obtained from all the study participants.

5. RESULT

5.1 sociodemographic characteristics of the study participants

A total of 417 study participants were involved in the study and the response rate was 100%. The majority of the mothers, 357(85.6%) were in the age category of 20-30 and only 13(3.1%) of them were under 20 years. Almost all of them, 414(99.3%) were married. About 233(55.9%) of them were Oromo and 239(57.3%) were Orthodox. More than half of them, 251(60.2%) had attended secondary education and 195(46.5%) of them were merchants. The majority of them, 397(95.2%) had monthly income above 2000 ETB and about 296(71%) of them were able to reach health facility within 30 minutes.

TABLE 1: SOCIODEMOGRAPHIC CHARACTERISTICS OF WOMEN ATTENDING ANTENATAL CARE CLINICS OF PUBLIC HEALTH FACILITIES IN BISHOFTU, OROMIA, ETHIOPIA, 2023 (N=417)

Variable	Category	Frequency	Percentage
Age	<20	13	3.1
	20-29	357	85.6
	>=30	47	11.3
Marital status	Married	414	99.3
	Single	3	.7
Ethnicity	Oromo	233	55.9
	Amhara	155	37.2
	Gurage	24	5.8
	Others	5	1.2
Religion	Orthodox	239	57.3
	Muslim	60	14.4
	Protestant	117	28.1
	Catholic	1	.2

Educational level	No formal education	15	3.6
	Read and write	23	5.5
	Primary education	40	9.6
	Secondary education	251	60.2
	Diploma and above	88	21.1
Husband Educational level (n=415)	No formal education	4	1.0
	Read and write	16	3.8
	Primary education	30	7.2
	Secondary education	180	43.2
	Diploma and above	185	44.4
Maternal occupation	Government employee	46	11.0
	Merchant	195	46.8
	Farmer	6	1.4
	House wife	134	32.1
	Daily labourer	14	3.4
	others	22	5.3
Husband occupation (n=415)	Government employee	113	27.1
	Merchant	138	33.1
	Farmer	8	1.9
	Daily labourer	34	8.2
	others	122	29.3

Monthly income in ETB	1001-1999	20	4.8
	>= 2000	397	95.2
Time to reach health facility	< 30 minutes	296	71.0
	>= 30 minutes	121	29.0

5.2 Reproductive and Medical Health Characteristics

More than half of the of them, 214(51.3%) were multigravidas and about 113(27.3%) of them were primiparous. Almost all of them 392(94%) had received antenatal care 2-3 times and more than half of them, 226(54.2%) had used family planning before current pregnancy The majority of them, 325(80.5%) had planned their current pregnancy. Very few of them, 6(1.4%) had experienced pregnancy complication and the most common pregnancy complication was preeclampsia 3(.7). about 10(2.4%) of them had experienced adverse pregnancy outcome and the most common adverse pregnancy outcome was abortion 5(1.25). about 14(3.4 %) had medically confirmed disease and the most common disease was chronic hypertention 6(1.4%).

TABLE 2: REPRODUCITIVE AND MEDICAL HEALTH CHARACTERSTICS OF WOMEN ATTENDING ATENATAL CARE CLINICS OF PUBLIC HEALTH FACILITIES IN BISHOFTU, OROMIA, ETHIOPIA,2023(N=417)

Variable	Category	Frequency	Percentage
Gravidity	1	202	48.4
	2-3	214	51.3
	4-5	1	.3
Parity	1	113	27.1
	2-3	101	24.7
	4-5	1	.3
ANC use frequency	1	8	1.9
	2-3	392	94.0

	4-5	17	4.1
Family planning use before current pregnancy	No	191	45.8
	Yes	226	54.2
Pregnancy complication in previous pregnancies	Yes	6	1.4
	No	247	59.2
	Primigravida	163	39.1
Type of pregnancy complication	Preeclampsia	3	.7
	Gestational DM	1	.2
	RH incompatibility	2	.5
	Not developed	247	59.2
	Primigravida	163	37.9
Adverse pregnancy outcome in previous pregnancy	Yes	10	2.4
	No	244	58.5
	Primigravida	163	39.1
Type of Adverse pregnancy outcome (n=10)	Congenital anomaly	2	20
	Abortion	5	50
	Still birth	3	30
Medically confirmed disease	No	403	96.6
	Yes	14	3.4
Type of medically confirmed disease(n=14)	Diabetes mellitus	4	28.57
	Chronic Hypertension	10	71.4
Pregnancy intention	Unplanned	82	19.7
	Planned	335	80.3

5.3 Knowledge on preconception care

More than half of the study participants, 261(62.5%) knew that womens' health and life style before pregnancy can influence both fertility and the health of the mother and child. however, almost all,412(98.8%) did not know preparation and maintainece of health before getting pregnant. About 165(39.5%) of them didn't know women or couple should plan pregnancy and visit health facility before pregnancy. More than half of them 61% didn't know that chronic medical condition such as Diabetes, Hypertention and others can affect the fetus. More than two third of them didn't know life or behavioral factors can affect the fetus. About 104(24.9%) didn't know how frequentely preconception care services need to be provided. Regarding overall knowledge participants on preconception care, 125(30%) of them had good knowledge on preconception care.

Regarding partners' knowledge on preconception care, more than half of the study participants, 361((86.6%) knew that womens' health and life style before pregnancy can influence both fertility and the health of the mother and child. however, almost all,416(99.8%) didn't know preparation and maintainece of health before getting pregnant. About 202(48.4%) of them didn't know women or couple should plan pregnancy and visit health facility pregnancy. About 416(99.8%) didn't know that chronic medical condition such as Diabetes, Hypertention and others can affect the fetus. More than two third of them didn't know life or behavioral factors can affect the fetus. About 104(24.9%) didn't know how frequentely preconception care services need to be provided. Regarding overall knowledge participants on preconception care, 100(23.98. %) of them had good knowledge on preconception care.

TABLE 3: KNOWLEDGE ON PRECONCEPTION CARE OF WOMEN ATTENDING ATENATAL CARE CLINICS OF PUBLIC HEALTH FACILITIES IN BISHOFTU, OROMIA, ETHIOPIA,2023(N=417)

Knowledge Questions	Response	Frequency	Percent
	Yes	261	62.58

Women's health and lifestyle before pregnancy can influence both the fertility and the health of mother and child.	No	156	37.42
women should prepare & maintain their health before getting pregnant	Yes	5	1,20
	No	412	98.80
women/couples should plan pregnancy, and visit health facilities before pregnancy?	Yes	252	60.43
	No	165	39.57
chronic medical conditions such as DM, hypertension and others can affect the fetus?	Yes	162	38.85
	No	255	61.15
behavioral or environmental conditions such as smoking, drinking alcohol and chemical exposure can affect the fetus?	Yes	127	30.46
	No	290	69.54
preconception care and counseling are needed for all reproductive age women?	Yes	52	12.47
	No	365	87.53
Improving maternal health, improving pregnancy outcome and reducing unplanned pregnancy are benefits of preconception care	Yes	198	47.48
	No	219	52.52
preconception care is important for both the mother and the baby	Yes	102	24.46
	No	315	75.54
All health professionals are appropriate to provide preconception care services	Yes	155	37.17
	No	262	62.83
Preconception care services should be provided continuously	Yes	51	12.23
	No	366	87.77

Table 4: attitude toward preconception care of women attending antenatal care clinics of public health facilities in Bishoftu, Oromia, Ethiopia, 2023 (n=417)

Attitude questions	SA	A No (%)	N No (%)	D No (%)	SD No (%)
--------------------	----	----------	----------	----------	-----------

	No (%)				
Preconception care is a high health care priority for all women/couples planning pregnancy	67(16.07)	121(29.02)	75(17.98)	80(19.18)	74(17.75)
Women with medically confirmed diseases should only receive preconception care services.	6(1.44)	11(2.64)	14(3.36)	377(90.41)	19(4.57)
Women who had pregnancy complications or adverse birth outcomes previously should only receive preconception care services.	54(12.95)	86(20.62)	100(23.98)	90(21.58)	87(20.86)
Preconception care services should be provided for reproductive age women	112(26.86)	98(23.50)	67(16.07)	73(17.51)	67(16.07)
Preconception care services should be provided for married women	58(13.91)	90(21.58)	123(29.49)	89(21.34)	59(14.15)
Preconception care services should be provided for unmarried women	3(.72)	8(1.92)	7(1.69)	10(2.39)	389(93.29)
Preconception care services are not important for adolescent girls	33(7.91)	29(6.95)	33(7.91)	89(21.34)	233(55.86)
Husbands should accompany their wives while seeking any preconception care services	4(.96)	393(94.24)	8(1.92)	6(1.44)	6(1.44)
Preconception care services should be provided by male health professionals.	77(18.47)	67(16.07)	123(29.49)	60(14.39)	90(21.58)
Preconception care services should be provided by female health professionals.	124(29.74)	134(32.13)	67(16.07)	47(11.27)	45(10.79)
Preconception care services should be provided by traditional birth attendants	50(11.99)	68(16.31)	167(40.05)	89(21.34)	43(10.31)
Preconception care does not have any effect on birth outcome	56(13.43)	54(12.95)	122(29.26)	90(21.58)	95(22.78)

5.1.4 Attitude toward preconception care

About 121(29.0%) of the study participants strongly agreed on preconception care to be high health care priority for all women or couples planning pregnancy. Almost all of them, 406(97.4%) disagreed that women with medically confirmed disease should only receive preconception care services. About 393(94.2% of the study participants agreed that partners should accompany their

wives while seeking any preconception care services. Regarding over all attitude toward preconception care, 155(37.4%) had positive attitude toward preconception care.

Regarding partners' attitude toward preconception care, about 62(14.9%) of the study participants strongly agreed on preconception care to be high health care priority for all women or couples planning pregnancy. Almost all of them, 410(98.5%) disagreed that women with medially confirmed disease should only receive preconception care services. About 389(93.3%) of the study participants agreed that partners should accompany their wives while seeking any preconception care services. Regarding over all attitude toward preconception care, 111(26.6%) had positive attitude toward preconception care.

TABLE 5: PARTNERS KNOWLEDGE ON PRECONCEPTION CARE OF WOMEN ATTENDING ATENATAL CARE CLINICS OF PUBLIC HEALTH FACILITIES IN BISHOFTU, OROMIA, ETHIOPIA, 2023(N=415)

Knowledge Questions	Response	Frequency	Percent
Women's health and lifestyle before pregnancy can influence both the fertility and the health of mother and child.	Yes	361	86.99
	No	54	13.01
women should prepare & maintain their health before getting pregnant	Yes	3	.77
	No	412	99.23
women/couples should plan pregnancy, and visit health facilities before pregnancy?	Yes	202	48.67
	No	203	51.33
chronic medical conditions such as DM, hypertension and others can affect the fetus?	Yes	4	3.37
	No	401	96.63
behavioral or environmental conditions such as smoking, drinking alcohol and chemical exposure can affect the fetus?	Yes	18	3.34
	No	397	95.66
preconception care and counseling are needed for all reproductive age women?	Yes	16	3.86
	No	399	96.14

Improving maternal health, improving pregnancy outcome and reducing unplanned pregnancy are benefits of preconception care	Yes	38	9.16
	No	377	90.84
preconception care is important for both the mother and the baby	Yes	5	3.61
	No	400	96.39
All health professionals are appropriate to provide preconception care services	Yes	71	17.11
	No	344	82.89
Preconception care services should be provided continuously	Yes	26	6.27
	No	389	93.73

TABLE 6: PARTNERS ATTITUDE ON PRECONCEPTION CARE OF WOMEN ATTENDING ATENATAL CARE CLINICS OF PUBLIC HEALTH FACILITIES IN BISHOFTU, OROMIA, ETHIOPIA, 2023(N=415)

Attitude questions	SA No (%)	A No (%)	N No (%)	D No (%)	SD No (%)
Preconception care is a high health care priority for all women/couples planning pregnancy	62(14.94)	121(29.17)	75(18.07)	80(19.28)	77(18.55)
Women with medically confirmed diseases should only receive preconception care services.	6(1.44)	11(2.65)	11(2.65)	390(93.98)	3(.72)
Women who had pregnancy complications or adverse birth outcomes previously should only receive preconception care services.	54(13.01)	84(20.24)	100(24.09)	90(21.69)	87(20.96)
Preconception care services should be provided for reproductive age women	110(26.50)	96(23.13)	67(16.14)	73(17.59)	67(16.14)
Preconception care services should be provided for married women	56(13.49)	90(21.69)	123(29.64)	89(21.44)	59(14.22)
Preconception care services should be provided for unmarried women	3(.72)	8(1.93)	7(1.69)	8(1.93)	389(93.73)
Preconception care services are not important for adolescent girls	31(7.47)	29(6.99)	33(7.95)	89(21.44)	233(56.14)
Husbands should accompany their wives while seeking any preconception care services	4(.96)	391(94.21)	8(1.93)	6(1.44)	6(1.44)
Preconception care services should be provided by male health professionals.	77(18.55)	67(16.14)	123(29.64)	60(14.46)	90(21.69)

Preconception care services should be provided by female health professionals.	122(29.39)	134(32.29)	67(16.14)	47(11.33)	45(10.82)
Preconception care services should be provided by traditional birth attendants	50(12.04)	66(15.90)	167(40.24)	89(21.45)	43(10.36)
Preconception care does not have any effect on birth outcome	54(13.01)	54(13.01)	122(29.39)	90(21.69)	95(22.84)

5.1.5 Preconception care utilization

Among 417 study participants 140(33.6%) of them had utilized preconception care services from public health facilities. The most common preconception care services utilized was folic acid supplementation 63(45.00%) and followed by getting tetanus vaccination 43(37.71%), respectively. Two thirds of them utilized the services from health center and during the first three months of pregnancy.

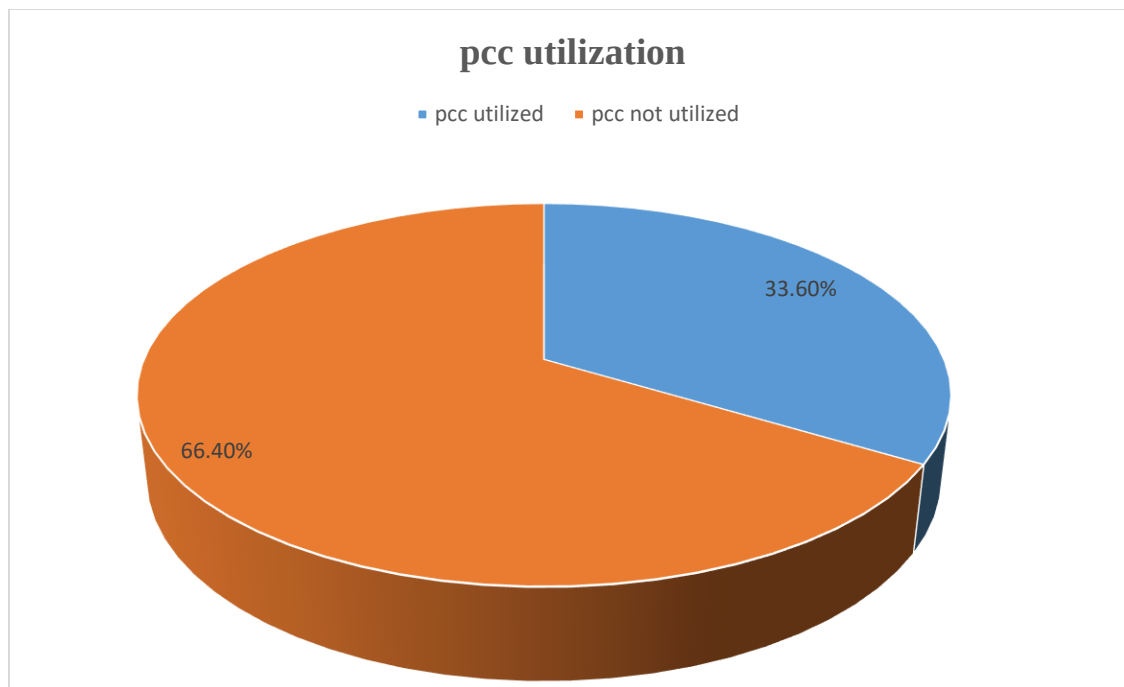


FIGURE 3: PRECONCEPTION CARE UTILIZATION OF WOMEN ATTENDING ANTENATAL CARE CLINICS OF PUBLIC HEALTH FACILITIES IN BISHOFTU, OROMIA, ETHIOPIA, 2023

5.1.5 Factors Associated with Preconception care

Maternal age, educational level, husbands' occupation, parity, monthly income, family planning use, adverse birth outcome, pregnancy complication, overall maternal knowledge and attitude toward preconception care had a p-value of ≤ 0.25 in the bivariate analysis and then taken into the final model for multivariable analysis. These variables were candidates for multivariable analysis and taken to control for potential confounding effect. In multivariate analysis parity, family planning use, overall maternal knowledge and attitude were statistically significantly associated with preconception care utilization at a p-value < 0.05 .

The odds of utilizing preconception care in women who had used family planning before this pregnancy were 13.9 times more likely than those who had not used family planning before current pregnancy (AOR=13.875; 95% CI (6.261,30.749)).

The odds of utilizing preconception care was 17 times more likely in multiparous women than in nulliparous women (AOR=17.083; 95% CI (7.035,41.482)).

The odds of utilizing preconception care utilization in those who had an overall good knowledge on preconception care was 9.6 times more likely than in those who had an overall poor knowledge about preconception care (AOR=9.622;95% CI (4.250,21.785)

The odds of utilizing preconception care was 5.5 times more likely in those who had an overall positive attitude toward preconception care utilization than those who had an overall negative attitude toward preconception care (AOR=5.471; 95% CI (2.459,12.173)

TABLE7: BIVARIABLE AND MULTIVARIABLE LOGESTIC ANALYSES FOR FACTORS ASSOCIATED WITH PRECONCEPTION CARE WOMEN ATTENDING ATENATAL CARE CLINICS OF PUBLIC HEALTH FACILITIES IN BISHOFTU, OROMIA, ETHIOPIA,2023(N=417)

variable		Preconception care utilization		COR (95%)	AOR (95%)	P value
		Yes	No			
		Freq	Freq			
Age	<20	3	10	1	1	
	20-29	110	247	.222(.054,.914)	.726(.113,4.471)	.726
	>= 30	27	20	.330(.177,.613)	.486(.62,3.775)	.486
Educational level	No formal education	11	4	1	1	
	Read and write	14	9	.566(.137,2.336)	1.199(.162,8.875)	.859
	Primary education	18	22	.298(.081,1.095)	.348(.048,2.533)	.298
	Secondary education	76	178	.158(.049,.512)	.236(.039,1.417)	.115
	Diploma and above	21	67	.114(.033,.396)	.132(.018,.989)	.049
Husbands occupation	Government employee	31	82	1	1	
	merchant	58	80	1.918(1.124,3.2710	1.143(.468,2.791)	.769
	farmer	7	1	18.516(2.188,156.694)	3.934(.022,706.236)	.605

	Daily labourer	11	23	1.265(.552,2.898)	.475(.102,2.213)	.343
	other	31	91	.901(.504,1.610)	.9599.386,2.384)	.929
Parity	nulliparous	26	170	1	1	
	multiparous	114	107	6.966(4.268,11.369)	17.083(7.035,41.482)	<.001
Monthly income	1001-1999ETB	13	7	1	1	
	>=2000 ETB	127	270	.253(.099,.650)	.151(.015,1.527)	.109
Family planning use	No	23	168	1	1	
	Yes	117	109	7.840(4.718,13.029)	13.875(6.261,30.749)	<.001
Adverse birth outcome	No	133	274	1	1	
	yes	7	3	4.807(1.224,18.885)	3.148(.389,25.479)	.282
Pregnancy complication	No	137	273	1	1	
	yes	2	4	1.004(.182,5.548)	2.159(.069,67.955)	.662
Maternal knowledge	poor	61	231	1	1	
	good	79	46	6.504(4.105,10.304)	9.622(4.250,21.785)	<.001
Maternal attitude	negative	45	215	1	1	
	positive	95	60	7.565(4.796,11.932)	5.471(2.459,12.173)	<.001

6. Discussion

This study assessed preconception care utilization and associated factors among pregnant women attending antenatal care clinics of public health facilities in Bishoftu city. This study showed that

the magnitude of preconception care utilization to be 33.6%. The finding of this study is similar with the study done in Bangladesh which was 33% (34). This might be due to the similarity in study design and socioeconomic similarities in the study population. The finding of this study also approaches the result of study done in West Shoa Zone which showed magnitude of preconception care utilization to be 38.2%, the similarity might be due to similar study design and the slight discrepancy might be due to larger sample size in the later study(46).

The finding of this study is higher than the reports from study done in Adet(9.6%), Debrebirhan(16%), and Mizan Aman(20%). This dissimilarity might be due to study design and study setting. For instance, those studies done in Adet, Mekele and Mizan were community based cross-sectional studies (25,26,39). However, it is lower than a cross-sectional study done in Addis Abeba which was 42.2%, the discrepancy might be due to larger sample size in the later study (42). It is also lower than a cross-sectional study done in China which was found to be 42.2%. this discrepancy might be due to socioeconomic, and health care structure dissimilarities (22).

The odds of utilizing preconception care in women who had used family planning before this pregnancy were 13.9 times more likely than those who had not used family planning before current pregnancy. This finding is supported by a similar result from studies done in Hosana, and west shoa which showed family planning use before the index pregnancy had a significant positive effect on the odds of utilizing preconception care (26,28). This might be due to those women who had been using family planning were exposed to preconception care information and service package which enables them to utilize preconception care more likely. This implies integrating preconception care services to other maternal and child health services such as family planning services is so important to advance preconception care utilization.

According to this study the odds of utilizing preconception care was 17 times more likely in multiparous women than in nulliparous women. This finding is inline with the study done in Adet, which showed multiparous women were 2.3 more likely to utilize preconception care than nulliparous ones. This might be due to the frequent exposure of multiparous women to the health facilities and subsequent access of information on preconception care services. However, a study done in Nigeria contradicts this finding and shows that nulliparous women had 41% more chance of utilizing preconception care utilization than multiparous women (25,40).

This study showed that the odds of utilizing preconception care utilization in those who had an overall good knowledge on preconception care was 9.6 times more likely than in those who had an overall poor knowledge about preconception care. This finding is in line with studies done in Hosana, Mekele and Addis Abeba. This might be due to women who had poor knowledge on preconception care didn't know the benefits, the service packages and availability of preconception care as a result they were not able to utilize preconception care services (28,37,42). This implies that information on preconception care services and benefits of preconception care should be disseminated in health facilities, schools and on mass medias so that it can increase womens' knowledge on preconception care.

According to this study the odds of odds of utilizing preconception care was 5.5 times more likely in those who had an overall positive attitude toward preconception care utilization than those who had an overall negative attitude toward preconception care utilizing preconception care was 5.5 times more likely in those who had an overall positive attitude toward preconception care utilization than those who had an overall negative attitude toward preconception care. This finding is inline with a study done in Miazna which indicated women with positive attitude toward preconception care had 40% more likely to utilize preconception care. This might be due to those women who had a positive attitude toward preconception care had increased health seeking behavior and more inclination toward utilizing preconception care services. This implies after increasing and improving womens' knowledge it is also important to work on women so that they will have a positive attitude toward preconception care.

Although we have included partners' knowledge and attitude toward preconception care utilization either of them showed statistically significant association with preconception care utilization. However, it is important to enhance partenrs' knowledge and attitude toward preconception care indorder to advance the overall magnitude of preconception care utilization.

6.1 Strength and Limitation of the study

The strength of this were, it incorporated partners or husbands on the inquiry of knowledge and attitude on preconception care which hadn't been done previously and the large sample size it has got is believed to increase the validity of the results found. It also focused on the current pregnancy which reduces recall bias.

The limitations of this study were, it was a cross-sectional study and temporal causal relationship can't be established with this study design. Another one this study was facility-based study and this may slightly reduce the representativeness to the general local community.

7. CONCLUSION AND RECOMMENDATION

7.1 Conclusion

This study showed that preconception care utilization in this study area is low. Family planning use before this pregnancy had increased the utilization preconception care 13.9 times. Being multiparous had also increased the utilization of preconception care 17 times. knowledge on preconception care and attitude toward preconception care had increased the utilization of preconception care 9.6 and 5.5 respectively.

7.2 Recommendations

This study revealed that preconception care utilization is low in the study area. So inorder to advance and increase preconception care utilization several stake holders should engage actively and with full effort. By availing this continuum care for mothers, we can improve both maternal and child health outcome.

For instance, the study indicated that family planning use before the current pregnancy was associated with more likely use of preconception care. This implies integrating maternal and child health service programs such as family planning use with preconception care service packages availing both services at the same unit will enhance and improve the magnitude of preconception care utilization. By doing so we will improve the overall maternal and child health outcomes.

From this study maternal knowledge on preconception care and attitude toward preconception care utilization were significantly associated with preconception care utilization. Those with good knowledge on preconception and positive attitude toward preconception care were more likely utilized preconception care services. So, increasing maternal knowledge on preconcepton care is very important. Health education on preconception care, information dissemination in health facilities, schools and other public gathering places will help advance the knowledge on preconception care utilization. It is also important to work on the attitude of women toward preconception care. This will cumulatively increase the overall preconception care utilization

Last but not least additional researches with case control methodology should be conducted on the factors that can influence preconception care utilization and programs, and guidelines should be revised accordingly.

8. REFERENCES

1. Meeting to develop a global consensus on preconception care to reduce maternal and childhood mortality and morbidity. WHO Headquarters, Geneva Meet report Geneva ... [Internet]. 2013;78.
2. World Health Organization. Preconception care: Maximizing the gains for maternal and child health. 2013;8.
3. Lassi ZS, Dean S V., Mallick D, Bhutta ZA. Preconception care: Delivery strategies and packages for care. *Reprod Health*. 2014;11(3):1–17.
4. Atrash HK, Johnson K, Adams M, Cordero JF, Howse J. Preconception care for improving perinatal outcomes: The time to act. *Matern Child Health J*. 2006;10(1):3–11.
5. Barrett G, Shawe J, Howden B, Patel D, Ojukwu O, Pandya P, et al. Why do women invest in pre-pregnancy health and care? A qualitative investigation with women attending maternity services. *BMC Pregnancy Childbirth* [Internet]. 2015;15(1):1–15. Available from: <http://dx.doi.org/10.1186/s12884-015-0672-3>
6. Mason E, Chandra-Mouli V, Baltag V, Christiansen C, Lassi ZS, Bhutta ZA. Preconception care: Advancing from “important to do and can be done” to “is being done and is making a difference.” *Reprod Health*. 2014;11(Suppl 3):1–9.
7. Tekalign T, Lemma T, Silesh M, Lake EA, Teshome M, Yitna T, et al. Mothers’ utilization and associated factors of preconception care in Africa, a systematic review and meta-analysis. *PLoS One* [Internet]. 2021;16(7 July):1–15. Available from: <http://dx.doi.org/10.1371/journal.pone.0254935>
8. Ayele AD, Belay HG, Kassa BG, Worke MD. Knowledge and utilisation of preconception care and associated factors among women in Ethiopia: systematic review and meta-analysis. *Reprod Health* [Internet]. 2021;18(1):1–15. Available from: <https://doi.org/10.1186/s12978-021-01132-9>
9. Habte A, Dessu S, Haile D. Determinants of practice of preconception care among women of reproductive age group in southern Ethiopia, 2020: content analysis. *Reprod Health* [Internet]. 2021;18(1):1–14. Available from: <https://doi.org/10.1186/s12978-021-01154-3>
10. Okemo JK, Kanya D, Mwaniki AM, Temmerman M. Determinants of preconception care among pregnant women in an urban and a rural health facility in Kenya: a qualitative study. *BMC Pregnancy Childbirth*. 2021;21(1).
11. Ukoha WC, Mtshali NG, Adepeju L. Current state of preconception care in sub-Saharan Africa: A systematic scoping review. *African J Prim Heal Care Fam Med*. 2022;14(1):1–11.
12. Moos MK, Dunlop AL, Jack BW, Nelson L, Coonrod D V., Long R, et al. Healthier women, healthier reproductive outcomes: recommendations for the routine care of all women of reproductive age. *Am J Obstet Gynecol*. 2008;199(6 SUPPL. B).
13. Control C for D. Women’s Reproductive Health: Improving the Health of Women and Families. 2016; Available from: <https://www.cdc.gov/chronicdisease/resources/publications/aag/pdf/2016/aag-reproductive-health.pdf>

14. Tanja Tyden. Why is preconception health and care important? *Ups J Med Sci*. 2016;121(4):3009734.
15. Dean S, Rudan I, Althabe F, Webb Girard A, Howson C, Langer A, et al. Setting Research Priorities for Preconception Care in Low- and Middle-Income Countries: Aiming to Reduce Maternal and Child Mortality and Morbidity. *PLoS Med*. 2013;10(9).
16. Norberg-Hodge H, Goering P. *The Future of Progress*. 1992;
17. WHO. Trends in maternal mortality: 2000 to 2017: estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Geneva: World Health Organization; 2019. WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. 2019. 104 p.
18. Organização Mundial de Saúde. World health statistics 2022 (Monitoring health of the SDGs) [Internet]. 2022. 1–131 p. Available from: <http://apps.who.int/bookorders>.
19. Survey H. Ethiopia. 2016.
20. Ethiopian Public Health Institute (EPHI), ICF. Ethiopia Mini Demographic and Health Survey 2019: Final Report [Internet]. 2021. 1–207 p. Available from: <https://dhsprogram.com/pubs/pdf/FR363/FR363.pdf>
21. Johnson K. Issue Brief Addressing Women’s Health Needs and Improving Birth Outcomes: Results from a Peer-to-Peer State Medicaid Learning Project BACKGROUND: THE IMPORTANCE OF PRECONCEPTION CARE FOR WOMEN. Commonw Fund pub [Internet]. 2012;21. Available from: https://www.commonwealthfund.org/sites/default/files/documents/___media_files_publications_issue_brief_2012_aug_1620_johnson_addressing_womens_htl_needs_improving_birth_ib.pdf
22. Du L, La X, Zhu L, Jiang H, Xu B, Chen A, et al. Utilization of preconception care and its impacts on health behavior changes among expectant couples in Shanghai, China. *BMC Pregnancy Childbirth*. 2021;21(1):1–8.
23. Stephenson J, Patel D, Barrett G, Howden B, Copas A, Ojukwu O, et al. How do women prepare for pregnancy? Preconception experiences of women attending antenatal services and views of health professionals. *PLoS One*. 2014;9(7).
24. Nepali G, Sapkota SD. Knowledge and practice regarding preconception care among antenatal mothers. *Int J Perceptions Public Heal* [Internet]. 2017;1(4):224–7. Available from: <https://www.researchgate.net/publication/319490058>
25. Goshu YA, Liyeh TM, Simegn Ayele A. Preconception Care Utilization and its Associated Factors among Pregnant Women in Adet, North-Western Ethiopia (Implication of Reproductive Health). *J Women’s Heal Care*. 2018;07(05).
26. Fekene DB, Woldeyes BS, Erena MM, Demisse GA. Knowledge, uptake of preconception care and associated factors among reproductive age group women in West Shewa zone, Ethiopia, 2018. *BMC Womens Health*. 2020;20(1):1–21.
27. Setegn M. What Women Do Before Pregnancy A Preconception Care of Women in Mizan Aman town Southwest Ethiopia A Mixed Study. *Prim Heal Care Open Access* [Internet]. 2021;11(1):1–6. Available from: <https://www.iomcworld.org/open-access/what-women-do-before-pregnancy-a-preconception-care-of-women-in-mizan-aman-town-southwest-ethiopia-a-mixed-study->

61322.html

28. Wegene MA, Gejo NG, Bedecha DY, Kerbo AA, Hagisso SN, Damtew SA. Utilization of preconception care and associated factors in Hosanna Town, Southern Ethiopia. *PLoS One* [Internet]. 2022;17(1 January):1–16. Available from: <http://dx.doi.org/10.1371/journal.pone.0261895>
29. Mberu BU, Haregu TN, Kyobutungi C, Ezech AC. Health and health-related indicators in slum, rural, and urban communities: A comparative analysis. *Glob Health Action*. 2016;9(1).
30. Amaje E, Fikrie A, Utura T. Utilization of Preconception Care and Its Associated Factors among Pregnant Women of West Guji Zone, Oromia, Ethiopia, 2021: A Community-Based Cross-Sectional Study. *Heal Serv Res Manag Epidemiol*. 2022;9:1–10.
31. Chepngetich J. Utilization Of Preconception Care Services Among Women Of Reproductive Age In Kiambu County, Kenya. *PLOS Med*. 2018;36(07):70214–8.
32. Kassa A, Yohannes Z. Women's knowledge and associated factors on preconception care at Public Health Institution in Hawassa City, South Ethiopia. *BMC Res Notes* [Internet]. 2018;11(1):1–6. Available from: <https://doi.org/10.1186/s13104-018-3951-z>
33. Ogura Y, Parsons WH, Kamat SS, Cravatt BF. 乳鼠心肌提取 HHS Public Access. *Physiol Behav* [Internet]. 2017;176(10):139–48. Available from: file:///C:/Users/Carla Carolina/Desktop/Artigos para acrescentar na qualificação/The impact of birth weight on cardiovascular disease risk in the.pdf
34. Division D. Original Article การเปรียบเทียบการซึ่มฟ ่ านแพ ่ ่นก ั ้ นพ ิ วหน ั ้งคนก ั บหม ู ่ ในหลอดทดลอง ของสารพอล ิ ฟ ี นอลจากพ ี ชบค ั ดย ่ ่อ. *Bangladesh J Med Sci*. 2011;4(1):10–9.
35. Patabendige M, Goonewardene IMR. Preconception care received by women attending antenatal clinics at a Teaching Hospital in Southern Sri Lanka. *Sri Lanka J Obstet Gynaecol*. 2013;35(1):3.
36. Adeyemo AA, Bello OO. Preconception care: What women know, think and do. *African J Med Heal Sci* [Internet]. 2021;20(2):18–26. Available from: <https://academicjournals.org/journal/AJMHS/article-abstract/9319BB965993>
37. Asresu TT, Hailu D, Girmay B, Abrha MW. Mothers' utilization and associated factors in preconception care in northern Ethiopia : a community based cross sectional study. 2019;1:1–7.
38. Luiza A, Borges V, Santos OA dos S, Nascimento2 N de C, Chofakian, Nascimento CB do, Gomes-Sponholz FA. Adolescent Behavioral Health in California Impact of Social Media On. *J Sch Nurs* [Internet]. 2016;50(2):208–15. Available from: <http://dx.doi.org/10.1590/S0080-623420160000200005>
39. Setegn Alie M, Alemu T, Alemayehu D, Negesse Y, Gebremariam A. Preconception care utilization and associated factors among reproductive age women in Mizan-Aman town, Bench Sheko zone, Southwest Ethiopia, 2020. A content analysis. *PLoS One* [Internet]. 2022;17(8):e0273297. Available from: <http://dx.doi.org/10.1371/journal.pone.0273297>
40. Lawal TA, Adeleye AO. Determinants of folic acid intake during preconception and in early pregnancy by mothers in Ibadan, Nigeria. *Pan Afr Med J*. 2014;19:1–6.

41. Shadab P, Nekuei N, Yadegarfar G. Prevalence of pre-pregnancy risk factors and its relationship with preconception care in Isfahan- Iran. *Int J Pediatr*. 2017;5(8):5463–71.
42. Gamshe EN, Demissie DB. Perinatal factors affecting knowledge and utilization of preconception care among pregnant women in Addis Ababa : A cross-sectional study. 2022;1(l).
43. CSA (CENTRAL STATISTICAL AGENCY). Population Size by Sex , Region , Zone and Wereda : July 2021 . Csa [Internet]. 2021;39. Available from: <https://www.statsethiopia.gov.et/our-survey-reports/>
44. Bishoftu city health office Data.pdf.
45. Yassin Ahmed KM, Mutasim Hamad Elbashir I, Mohamed Ibrahim Mohamed S, Kamil Saeed AM, Ali Alawad AM. Attitude and Practice of Preconception Care Among Sudanese Women in Reproductive Age About Rheumatic Heart Disease. *Int J Public Heal Res* [Internet]. 2015;3(5):223–7. Available from: <http://www.openscienceonline.com/journal/ijphr>
46. G A. Assessment Knowledge and Experience of Preconception Care Among Pregnant Mothers Attending Antenatal Care in West Shoa Zone Public Health Centers, 2016. 2016;1–51.

9. ANNEXES

9.1 Annex -1: Information sheet and consent form

Dear Respondents, this questionnaire is prepared to assess the Prevalence of Preconception care utilization and Associated Factors among pregnant mothers Who will come for ANC follow up in a public health facility in Bishoftu town, North East Ethiopia, 2023. The assessment will be done for the partial fulfillment of MPH Degree in a general MPH. Therefore, you kindly requested to provide a genuine response to the questions. The information you provide is confidential and is used only for this study. Do not hesitate to ask the data collector if you have any questions. Your cooperation and participation until the interview are vital for completing the assessment.

Thank you for your cooperation!

Data collector's sign: _____

9.2 Annex 2: English version questionnaire:

SECTION 1: Socio – demographic information

S.no	Demographic Questions	Responses	Skip	Code
1.	Age of the mother	1.<20 2.20-29 3.≥30		
2.	What is your marital status?	1. Married 2. Single 3. Divorced 4. Widowed		
3.	What is your ethnicity?	1. Oromo 2. Amhara 3. Gurage 4. Others (specify).....		
4.	What is your religion?	1. Orthodox 2. Muslim 3. Protestant 4. Catholic 5. Others (specify).....		
5.	What is your level of educational status?	1. No formal education 2. Read and write 3. Primary education 4. Secondary education 5. Diploma and more		

6.	What is your husband's level of educational status?	1. No formal education 2. Read and write 3. Primary education 4. Secondary education 5. Diploma and more		
7.	What is your Occupation?	1. Government employee 2. Merchant 3. Farmer 4. House wife 5. Daily laborer 6. Others (specify).....		
8.	What is your husband's occupation?	1. Government employee 2. Merchant 3. Farmer 4. Daily laborer 5. Others (specify).....		
9.	How much is your monthly income?	1. Less than 500 2. 501-1000 3. 1001-2000 4. 2001 and above		
10.	How much time you spent to reach health facility?	1. less than 30 min 2. 30 min and above		

SECTION 2: Reproductive & Medical Characteristics

S.no	Questions	Responses	Skip	Code
11.	How many times have you been pregnant so far including this pregnancy? (Gravidity)	-----		
12.	Have you ever given birth?	1. Yes 2. No	If No, go to Q 22	
13.	How many times have you given birth whether it's alive or dead? (Parity)	-----		
14.	How many times did you receive antenatal care during this pregnancy?	-----		
15.	Have you used family planning before current pregnancy?	1. Yes 2. No	If No, go to Q 28	
16.	Have you ever experienced complications during pregnancy	1. Yes 2. No	If Primigravida, go to Q.32	
17.	Which type of complication during pregnancy have you experienced? (multiple responses are possible)	1. Antepartum hemorrhage 2. Preeclampsia 3. Eclampsia 3. Gestational DM 4. Postpartum hemorrhage		

		5. RH incompatibility 6. Complications during labor & delivery 7. Intrauterine growth restriction 8. C/S delivery 9. Others (specify).....		
18.	Have you ever experienced adverse pregnancy outcomes?	1. Yes 2. No	If No, go to Q.32	
19.	Which type of adverse pregnancy outcome have you experienced? (multiple responses are possible)	1. Congenital anomalies 2. Low birth weight 3. Preterm 4. Abortion 5. Still birth 6. Neonatal death 7. Others (specify).....		
20.	Do have medically confirmed diseases?	1. Yes 2. No	If No, go to Q.35	
21.	If yes, which type of medical disease do you have? (multiple responses are possible)	1. Diabetes mellitus 2. Chronic hypertension 3. Chronic renal disease 4. Asthma 5. Cardiac disease 4. HIV/AIDS 5. Others (specify).....		
22.	Is your current pregnancy planned?	1. Yes 2. No		
23.	Does your partner support you about your pregnancy?	1. Yes 2. No		

SECTION 3: Knowledge of mothers on preconception care

S.no	Knowledge Questions	Response	S k i p	Code
24	Women's health and lifestyle before pregnancy can influence both the fertility and the health of mother and child.	1. Yes 2. No 3. I don't know		1= yes 0= no 0=I don't know
25	women should prepare & maintain their health before getting pregnant	1. Yes 2. No 3. I don't know		1= yes 0= no 0=I don't know
26	women/couples should plan pregnancy, and visit health facilities before pregnancy?	1. yes 2. no 3. I don't know		1= yes 0= no 0=I don't know

27	chronic medical conditions such as DM, hypertension and others can affect the fetus?	1. yes 2. no 3. I don't know		1= yes 0= no 0=I don't know
28	behavioral or environmental conditions such as smoking, drinking alcohol and chemical exposure can affect the fetus?	1. Yes 2. No 3. I don't know		1= yes 0= no 0=I don't know
29	preconception care and counseling are needed for all reproductive age women?	1. yes 2. no 3. I don't know		1= yes 0= no 0=I don't know
30	Improving maternal health, improving pregnancy outcome and reducing unplanned pregnancy are benefits of preconception care	1. yes 2. no 3. I don't know		1= yes 0= no 0=I don't know
31	preconception care is important for both the mother and the baby	1. yes 2. no 3. I don't know		1= yes 0= no 0=I don't know
32	All health professionals are appropriate to provide preconception care services	1. yes 2. no 3. I don't know		1= yes 0= no 0=I don't know
33	Preconception care services should be provided continuously	1. Yes 2. No 3. I don't know		1= yes 0= no 0=I don't know

Section 4: Attitude of mothers on preconception care

S. no	Attitude Questions	Responses				
		SA	A	N	D	SD
1.	Preconception care is a high health care priority for all women/couples planning pregnancy.					
2.	Women with medically confirmed diseases should only receive preconception care services.					

3.	Women who had pregnancy complications or adverse birth outcomes previously should only receive preconception care services.					
4.	Preconception care services should be provided for reproductive age women					
5.	Preconception care services should be provided for married women					
6.	Preconception care services should be provided for unmarried women					
7.	Preconception care services are not important for adolescent girls					
8.	Husbands should accompany their wives while seeking any preconception care services.					
9.	Preconception care services should be provided by male health professionals.					
10.	Preconception care services should be provided by female health professionals.					
11.	Preconception care services should be provided by traditional birth attendants					
12.	Preconception care does not have any effect on birth outcome.					

SECTION 3: Knowledge of mothers on preconception care

S.no	Knowledge Questions	Response	Skip	Code
34	Women's health and lifestyle before pregnancy can influence both the fertility and the health of mother and child.	1. Yes 2. No 3. I don't know		1= yes 0= no 0=I don't know
35	women should prepare & maintain their health before getting pregnant	1. Yes 2. No 3. I don't know		1= yes 0= no 0=I don't know
36	women/couples should plan pregnancy, and visit health facilities before pregnancy?	1. yes 2. no 3. I don't know		1= yes 0= no 0=I don't know
37	chronic medical conditions such as DM, hypertension and others can affect the fetus?	1. yes 2. no 3. I don't know		1= yes 0= no 0=I don't know

38	behavioral or environmental conditions such as smoking, drinking alcohol and chemical exposure can affect the fetus?	4. Yes 5. No 6. I don't know		1= yes 0= no 0=I don't know
39	preconception care and counseling are needed for all reproductive age women?	4. yes 5. no 6. I don't know		1= yes 0= no 0=I don't know
40	Improving maternal health, improving pregnancy outcome and reducing unplanned pregnancy are benefits of preconception care	4. yes 5. no 6. I don't know		1= yes 0= no 0=I don't know
41	preconception care is important for both the mother and the baby	4. yes 5. no 6. I don't know		1= yes 0= no 0=I don't know
42	All health professionals are appropriate to provide preconception care services	4. yes 5. no 6. I don't know		1= yes 0= no 0=I don't know
43	Preconception care services should be provided continuously	4. Yes 5. No 6. I don't know		1= yes 0= no 0=I don't know

Section 6: Attitude of partners on preconception care

S. no	Attitude Questions	Responses				
		SA	A	N	D	SD
13.	Preconception care is a high health care priority for all women/couples planning pregnancy.					
14.	Women with medically confirmed diseases should only receive preconception care services.					
15.	Women who had pregnancy complications or adverse birth outcomes previously should only receive preconception care services.					
16.	Preconception care services should be provided for reproductive age women					

17.	Preconception care services should be provided for married women					
18.	Preconception care services should be provided for unmarried women					
19.	Preconception care services are not important for adolescent girls					
20.	Husbands should accompany their wives while seeking any preconception care services.					
21.	Preconception care services should be provided by male health professionals.					
22.	Preconception care services should be provided by female health professionals.					
23.	Preconception care services should be provided by traditional birth attendants					
24.	Preconception care does not have any effect on birth outcome.					

Section 7: Utilization of preconception care

S.no	Utilization Questions	Responses	Skip	Code
4	Have you ever received preconception care service from health facility during any of your previous pregnancy?	1. Yes 2. No	If No, go to Q.73	
4	If yes Q. 71, which preconception care services have you received?	1. Being screened & treated for chronic medical diseases 2. Being screened & treated for STIs 3. HIV counseling, testing & initiating HAART if reactive 4. Being diagnosed & treated for infertility/sub-fertility 5. Getting vaccination for tetanus 6. Taking folic acid supplementation 7. Had follow up and care for preexisting chronic medical condition before getting pregnant 8. Had follow up and care for previous adverse pregnancy & birth outcomes before getting pregnant 9. Weight management 10. Diet modification 11. Avoiding smoking & drinking alcohol 12. Avoiding teratogenic & illicit drugs		

		13.Avoiding chemical/radiation exposure in occupational, environmental and medical settings		
4	Have you received preconception care service from health facility in the current pregnancy?	1. Yes 2. No		
4	If yes to Q.73, which preconception care services had you received in the current pregnancy?	1. Being screened & treated for chronic medical diseases 2. Being screened & treated for STIs 3. HIV counseling, testing & initiating HAART if reactive 4. Being diagnosed & treated for infertility/sub-fertility 5. Getting vaccination for tetanus 6. Taking folic acid supplementation 7. Had follow up and care for preexisting chronic medical condition before getting pregnant 8. Had follow up and care for previous adverse pregnancy & birth outcomes before getting pregnant 9. Weight management 10. Diet modification 11. Avoiding smoking & drinking alcohol 12. Avoiding teratogenic & illicit drugs 13.Avoiding chemical/radiation exposure in occupational, environmental and medical settings		
4	When did you receive preconception care service in the current pregnancy?	1. When I planned to get pregnant 2. 3 months before being pregnant 3. During the first 3 months of pregnancy 4. Between pregnancies 5. Others (specify).....		
4	In which unit have you received the preconception care service in the current pregnancy?	1. Family planning unit 2. Post-natal care unit 2. Gyn-OPD 3. Chronic disease follow-up clinic 4. Others (specify).....		
5	Where did you receive the preconception care service in the current pregnancy?	1. Public hospital 2. Health center 3. Health post 4. Private clinic 5. Others (specify).....		
5	Who provided you the preconception care service in the current pregnancy?	1. Doctor 2. Nurse 3. Midwife 4. Health officer 5. Health extension worker 6. Others (specify).....		

5	Who makes decision on pregnancy planning & seeking health care services?	1. Women alone 2. Husband alone 3. Women & Husband 4. Others (specify.....)		
5	Did your husband supports & accompany you while having preconception care services?	1. Yes 2. No		
5	How many times did you receive preconception care services in the current pregnancy?	----- -----		
5	If you were screened for chronic medical conditions as preconception care services in the current pregnancy, which condition had you screened?	1. Hypertension 2. Diabetes 3. Tuberculosis 4. Anemia 5. Epilepsy 6. Infertility 7. Asthma 8. Others		
5	If you managed your weight as preconception care services in the current pregnancy, what kind of weight management have you done?	1. Maintained healthy weight 2. Lost weight		
5	If you took folic acid supplementation, have you consistently used them?	1. Yes 2. No		
5	If you modify your diet as preconception care services in the current pregnancy, what kind of modifications have you made?	1. Foods with high-carbohydrate avoided 2. Foods with high saturated fat avoided 3. Foods with high glycemic avoided 4. Eating balanced diet& increased meal frequency with diversified food items 5. Others (specify-----)		

9.3 Annex: Questionnaire Amharic Version

በቢሶፍቱ ከተማ በሚገኙ የጤና ተቆማት ውስጥ ያሉ ነፍሰ ጡር እናቶች ከእርግዝና በፊት በሚደረግ የጤና ክትትል ዙሪያ ያላቸው አጠቃቀም እና ተዛማጅ ነገሮች

የቃለ-መጠይቁ ቀን ____ / ____ / 2015 የጤና ተቋሙ ስም የቃለ-መጠይቁ ኮድ.....

ክፍል 1 :-ግለ-ታሪክ መረጃን የሚዳስሱ ጥያቄዎች

ተ.ቁ	ጥያቄ	ምላሾች	ዝላል	ኮድ
1.	ዕድሜዎ ስንት ነው? (በተጠናቀቁ ዓመታት)	1.<20 2.20-29 3.≥30		
2.	የጋብቻ ሁኔታዎ ምንድን ነው?	1. ያገባች 2. ያላገባች		

		3. የፈታች 4. ባሏ የሞተ		
3.	ብሄሮች ምንድን ነው?	1. አሮሞ 2. አማራ 3. ጉራጌ 4. ሌሎች (ይግለጹ)		
4.	ሃይማኖት ምንድን ነው?	1. ኦርቶዶክስ 2. ሙስሊም 3. ፕሮቴስታንት 4. ካቶሊክ 5. ሌሎች (ይግለጹ)		
5.	የትምህርት ደረጃዎ ምን ያህል ነው?	1. መደበኛ ትምህርት ያልወሰደ 2. ማንበብ እና መጻህፍ የሚችል 3. የመጀመሪያ ደረጃ ትምህርት ያጠናቀቀ 4. ሁለተኛ ደረጃ ትምህርት ያጠናቀቀ 5. ዲፕሎማ እና ከዛ በላይ		
6.	የባልሽ የትምህርት ደረጃ ምን ያህል ነው?	1. መደበኛ ትምህርት ያልወሰደ 2. ማንበብ እና መጻህፍ የሚችል 3. የመጀመሪያ ደረጃ ትምህርት ያጠናቀቀ 4. ሁለተኛ ደረጃ ትምህርት ያጠናቀቀ 5. ዲፕሎማ እና ከዛ በላይ		
7.	የሥራ መስክዎ ምንድን ነው?	1. የመንግስት ሰራተኛ 2. ነጋዴ 3. ገበሬ 4. የቤት እመቤት 5. ዕለታዊ ሰራተኛ 6. ሌሎች (ይግለጹ)		
8.	የባልሽ ሥራ ምንድን ነው?	1. የመንግስት ሰራተኛ 2. ነጋዴ 3. ገበሬ 4. ዕለታዊ ሰራተኛ 5. ሌሎች (ይግለጹ)		
9.	ወርሃዊ ገቢዎ ስንት ነው?	1. አምስት መቶ በታች 2. 501-1000 3. 1001-2000 4. 2001 እና ከዚያ በላይ		
10.	የመኖሪያ ቦታዎ የት ነው?	1. ከተማ 2. ገጠር		

11.	ወደ ጤና ትቋም ለመድረስ ምን ያህል ጊዜ ይፈጅበታል?	1 ከ 30 ደቂቃ በታች 2 ከ 30 ደቂቃ እና ከዚያ በላይ		
-----	-----------------------------------	---	--	--

ክፍል 2:-የስነ-ተዋልዶ እና የጤና እክልን የሚዳስሱ ጥያቄዎች

S.no	Questions	Responses	Skip	Code
12.	ይህንን እርግዝና ጨምሮ እስከ አሁን ምን ያህል ጊዜ ነፍሶ ጡር ሆነዋል?	-----		
13.	ልጅ ወልደዉ ያዉቃሉ?	1. አዎ 2. አላዉቅም	መልሶ አላዉቅም ከሆነ ወደ ጥ.ቁ. 22 ይሂዱ	
14.	ቡህይወት ያለ ልጅ ይሁን የሞተ ስንት ጊዜ ነው የወለዱት?	-----		
15.	በሚወለዱበት ጊዜ በሕይወት የነበሩት ስንት ነበሩ?	-----		
16.	በሚወለዱበት ጊዜ ስንት ህጻንት ሞተዋል?	-----		
17.	በሕይወት የተወለዱ በኋላ ግን የሞቱ ልጆች አሎዎት?	1. አዎ 2. የለኝም	መልሶ የለኝም ከሆነ ወደ ጥ.ቁ. 19 ይሂዱ	
18.	በህይወት ከተወለዱ በኋላ ስንት ልጆች ሞቱ?	-----		
19.	በአሁኑ ሰዓት ስንት በሕይወት ያሉ ልጆች ስንት ናቸዉ?	-----		
20.	የመጀመሪያ ልጅዎን ሲወለዱ ስንት ዓመቶት ነበር?	-----		
21.	የመጨረሻ ልጅዎን መቼ ነበር የወለዱት?	---/---/---		
22.	ከመጨረሻው ልጅ በፊት ያለዉን ልጅዎን መቼ ነበር የወለዱት ?	---/---/---		
23.	አሁን ስንት ወራት እርጉዝ ነዎት?	-----		
24.	በዚህ እርግዝና ወቅት ስንት ጊዜ የእርግዝና ክትትል አግኝተዋል?	-----		
25.	የቤተሰብ ምጣኔ ተጠቅመዉ ያዉቃሉ?	1. አዎ 2. አላዉቅም		
26.	የትኛውን ዘዴ ነው የተጠቀሙት? (ብዙ ምላሾች ሊኖሩ ይችላሉ)	1. የሴት ማህጸን ቱቦ ማስቋጠር 2. የወንድ ዘር ማስተላለፊያ ቱቦ ማስቋጠር 3. ማህጸን ዉስጥ የሚቀበር ሉፕ		

		4. መርፌ 5. በቆዳ ስር የሚቀበር የእርግዝና መከላከያ 6. የእርግዝና መከላከያ እንክብል 7. የወንድ ኮንደም 8. የሴት ኮንደም 9. ድንገተኛ የእርግዝና መከላከያ 10. የካሌንደር ዘዴ 11. ጡት የማጥባት የእርግዝና መከላከያ ዘዴ 12. በግኑኘነት ወቅት የወንድ ዘር ፈሳሽ ወደ ዉጭ ማፍሰስ		
27.	አሁን ካለው እርግዝና በፊት የቤተሰብ ምጣኔ ተጠቅመዋል?	1. አዎ 2. አልተጠቀምኩም		
28.	መልሶ አዎን ከሆነ የትኛው ዘዴ ተጠቅመዋል? (ብዙ ምላሾች ሊኖሩ ይችላሉ)	1. የሴት ማህጸን ቱቦ ማስቆጠር 2. የወንድ ዘር ማስተላለፊያ ቱቦ ማስቆጠር 3. ማህጸን ዉስጥ የሚቀበር ሉፕ 4. መርፌ 5. በቆዳ ስር የሚቀበር የእርግዝና መከላከያ 6. የእርግዝና መከላከያ እንክብል 7. የወንድ ኮንደም 8. የሴት ኮንደም 9. ድንገተኛ የእርግዝና መከላከያ 10. የካሌንደር ዘዴ 11. ጡት የማጥባት የእርግዝና መከላከያ 12. በግኑኘነት ወቅት የወንድ ዘር ፈሳሽ ወደ ዉጭ ማፍሰስ		
29.	በእርግዝና ወቅት ክእርግዝና ጋር የተያያዙ ችግሮች አጋጥመው ያውቃሉ?	1.አዎ 2. አያዉቅም	ለመጀመሪያ ጊዜ ከሆነ ያረገዝቸዉ ወደ ጥ.ቁ. 32 ይሂዱ	
30.	መልሶ አዎን ከሆነ በእርግዝና ወቅት ክእርግዝና ጋር የተያያዙ ምን አይነት ችግሮች ገጥሞዎታል? (ብዙ ምላሾች ሊኖሩ ይችላሉ)	1. የቅድመ ወሊድ ደም መፍሰስ 2. ክእርግዝና የተያያዘ የደም ግፊት መጨመር 3. ክእርግዝና የተያያዘ የደም ግፊት መጨመር እና ራስን ስቶ መዉደቅ 4. ክእርግዝና የተያያዘ የስኳር ህመም 5. የድህረ ወሊድ ደም መፍሰስ5.ሾተላይ 6. በምጥና በወሊድ ጊዜ የሚከሰት ችግር 7. በማኅፀኑ ዉስጥ የሚከሰት የጽንሰ መቀጫጫ		

		8. በአፕሬሽን መዉለድ 9. ልላ (ይግለጽ).....		
31.	ከዚህ በፊት ሲወለዱ ከህጻኑ ጋር ተያይዞ እክል አጋጥሞውት ያውቃል?	1. አዎ 2. አያውቅም	መልሶ አያውቅም ከሆነ ወደ ጥ.ቁ. 33 ይሂዱ	
32.	መልሶ አዎን ከሆነ የትኛው አያነት ከህጻን ጋር የተያያዘ እክል ገጥሞዎት ነበር? (ብዙ ምላሾች ሊኖሩ ይችላሉ)	1. የአፈጣጠር ችግር ያለበት ህጻን 2. ዝቅተኛ ክብደት ያለው ህጻን 3. ግዜው ሳይደርስ የተወለደ ህጻን 4. ፅንሰ ማስወረድ 5. ሞቶ የተወለደ ህጻን 6. የጨቅላ ህጻን ሞት		
33.	በሕክምና የተረጋገጠ በሽታ አለቦዎት?	1. አዎ 2. የለብኝም	መልሶ የለብኝም ከሆነ ወደ ጥ.ቁ. 35 ይሂዱ	
34.	አዎ ከሆነ ፣ የትኛው ዓይነት በሽታ አለብዎት? (ብዙ ምላሾች ሊኖሩ ይችላሉ)	1. የስኳር ህመም 2. ሥር የሰደደ የደም ግፊት 3. ሥር የሰደደ የኩላሊት በሽታ 4. አስም 5. የልብ በሽታ 6. ኤች አይ ቪ / ኤድስ 7. ሌላ (ይግለጽ).....		
35.	ከቤተሰብ በሕክምና የተረጋገጠ በሽታ ያለበት ሰው አለ?	1. አዎ 2. የለም	መልሶ የለም ከሆነ ወደ ሚቀጥለው ክፍል ይሂዱ	
36.	አዎ ከሆነ ፣ የትኛው ዓይነት በሽታ ነው ያለበት? (ብዙ ምላሾች ሊኖሩ ይችላሉ)	1. የስኳር ህመም 2. ሥር የሰደደ የደም ግፊት 3. ሥር የሰደደ የኩላሊት በሽታ 4. አስም 5. የልብ በሽታ 6. ኤች አይ ቪ / ኤድስ 7. ሌላ (ይግለጽ).....		
37.	ከዚህ በፊት ከነበሩት እርግዝናዎች መካከል አቅደው ያረገዙት ነበር?	1. አዎ 2. አልነበረም		
38.	የአሁኑ እርግዝና አቅደው ነው ያረገዙት ወይ?	1. አዎ 2. አይደለም		

ክፍል 3፡ በቅድመ ፅንሰ እንክብካቤ ላይ የእናቶች እውቀት የተመለከቱ ጥያቄዎች

ተ.ቁ	ጥያቄ	ምላሾች	ዝላል	ኮድ
39.	ከእርግዝና በፊት የሴቶች ጤና እና አኗኗር ሁኔታ በእናቶች እና የልጆች ጤና ላይም ሆነ በመጸነስ ላይ ተጽዕኖ ሊያሳድር ይችላል	1. አዎ 2. አይችልም 3. አላውቅም		
40.	ሴቶች ከመፀነሳቸው በፊት ጤናቸውን ማዘጋጀት እና መጠበቅ እንዳለባቸው ያውቃሉ?	1. አዎ 2. የለባቸውም 3. አላውቅም		
41.	ስለ ቅድመ ፅንሰ እንክብካቤ ሰምተው ያውቃሉ?	1. አዎ 2. አላውቅም	መልሶ አላውቅም ከሆነ ወደ ጥ.ቁ. 46 ይሂዱ	
42.	መረጃውን ከየት አገኙት? (ብዙ ምላሾች ሊኖሩ ይችላሉ)	1. የቤተሰብ አባላት / ዘመዶች 2. ዳደሾች 3. ከጤና ባለሙያዎች የጤና ኤክስቴንዥን ባለሙያዎች ጨምሮ 4. ከልምድ አዋላጆች 5. ከሴቶች የልማት ሰራዊት 6. ከመገናኛ ብዙሃን (ሬዲዮ ፣ ቴሌቪዥን ፣ ጋዜጣ ፣ ማህበራዊ ሚዲያ) 7. ከጎረቤቶች 8. ሌሎች (ይግለጹ)		
43.	ከእርግዝና በፊት ምን መደረግ እንዳለባት ያውቃሉ?	1. አዎ 2. አላውቅም	መልሶ አላውቅም ከሆነ ወደ ጥ.ቁ. 48 ይሂዱ	
44.	አዎ ከሆነ ፣ ሴቶች / ባለትዳሮች ከእርግዝና በፊት ምን ዓይነት ነገሮችን ማድረግ አለባቸው? (ብዙ ምላሾች ሊኖሩ ይችላሉ)	1. እርግዝና ማቀድ 2. ስለ ጤናማ እርግዝና ምክርን ለመፈለግ የጤና ተቋማትን መጎብኘት 3. ስር ለሰደደ የጤና ችግር ምርመራ ማድረግ እና መታከም 4. ኤች.አይ.ቪ እና የአባላዘር በሽታዎችን ምርመራ ማድረግ እና መታከም 5. መሃንነትን መመርመር እና መታከም 6. ለቴታነስ ክትባት መወሰድ 7. ልጆችን አራርቆ ለመወለድ የቤተሰብ ዕቅድን መጠቀም 8. ፎሊክ አሲድ መውሰድ 9. የሰውነት ክብደትን ማሰተካከል		

		10. አመጋገብ ማሰተካከል 11. ሲጋራ ማጨስ እና አልኮል መጠጣትን ማቆም 12. ፅንሰን የሚጎዱ እና ሕገ-ወጥ መድኃኒቶችን አለመጠቀም 13. በስራ ፣ በከባቢ እና በሕክምና ተቋማት ውስጥ ለአላስፈላጊ ኬሚካል / የጨረሻ ከመጋለጥ መቆጠብ 14. አስፈላጊ ሆኖ ሲገኝ ከዘረ-መል ጋር ለተያያዙ ችግሮች የዘረ-መል ምክር ፣ ምርመራ እና ህክምና ማግኘት 15. ፆታዊ ጥቃት ሰለባ ለሆኑት የጤና እንክብካቤ አገልግሎቶች ፣ ሪፈራል እና የስነልቦና ድጋፍ መስጠት 16. ከዚህ በፊት ስር የሰደደ የጤና ችግር ላለባት ሴት ከመፀነስ በፊት ምክር ፣ ምርመራ እና ህክምና ማግኘት 17. ከዚህ በፊት ለነበረ ከእርግዝና ጋር የተያያዘ ችግር/ከህጻን ጋር የተያያዘ እክል ሕክምና ስለማድረግ ምክር ማግኘት 18. ሌሎች (ይግለጹ)		
45.	የትኛው ሥር የሰደደ የጤና ሁኔታ ፅንሰን ሊጎዳ ይችላል? (ብዙ ምላሾች ሊኖሩ ይችላሉ)	1. የስኳር ህመም 2. ሥር የሰደደ የደም ግፊት 3. ሥር የሰደደ የኩላሊት በሽታ 4. አስም 5. የልብና የደም ቧንቧ በሽታ 6. ኤች.አይ.ቪ እና የአባላዘር በሽታዎች 7. በዘር የሚተላለፍ በሽታ 8. የሚጥል በሽታ 9. ጭንቀት 10. አላውቅም		
46.	የትኛውን የሕይወት ዘይቤ ወይም ባህሪ ወይም አካባቢያዊ ሁኔታ ፅንሰን ሊጎዳ ይችላል? (ብዙ ምላሾች ሊኖሩ ይችላሉ)	1. ሲጋራ ማጨስ 2. አልኮል መጠጣት 3. ሕገወጥ እጾችን መውሰድ 4. ከመጠን በላይ ክብደት / ከትክክለኛ ክብደት በታች መሆን 5. ለጨረሻ ወይም ኬሚካሎች መጋለጥ 6. ለፆታዊ ጥቃት ሰለባ መሆን 7. አላውቅም		

47.	ቅድመ ፅንሰ እንክብካቤ እና ማማከር ለማን ያስፈልጋል ብለው ያምናሉ?	1. ለታዳጊዎች 2. የመዉለጃ ዕድሜ ክልል ዉስጥ ላሉ ሴቶች 3. ሥር የሰደደ የጤና ችግር ላለባቸው ሴቶች 4. ቀደም ሲል የእርግዝና ችግር/ከህጻን ጋር የተያያዘ እክል ላለባቸው ሴቶች 5. ላላገቡ ጥንዶች 6. ለባለትዳሮች 7. ለሁሉም ሴቶች 8. አላውቅም		
48.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች ለምን እንደሚጠቅሙ ያውቃሉ?	1. አዎ 2. አላውቅም	መልሶ አላውቅም ከሆነ ወደ ጥ.ቁ. 53 ይሂዱ	
49.	መልሶ አዎ ከሆነ ፣ ጥቅሞቹ ምንድን ናቸው?	1. የእናቶችን ጤና ማሻሻል 2. ከሚወለዱ ህጻናት ጋር የተያያዘ እክል ለማሻሻል 3. ያልታቀደ እርግዝና ለመቀነስ 4. አላውቅም		
50.	ቅድመ ፅንሰ እንክብካቤ ለማን ይጠቅማል?	1. ለህፃን ፣ ብቻ 2. ለእናት ፣ ብቻ 3. ለህፃን እና ለእናት 4. አላውቅም		
51.	ሴቶች / ባለትዳሮች የቅድመ ፅንሰ እንክብካቤ መቼ ማግኘት አለባቸው?	1. ለማርገዝ እቅድ ሲያወጡ 2. ከመፀነስ 3 ወር በፊት 3. በእርግዝና የመጀመሪያዎቹ 3 ወራት 4. በሁለት እርግዝናዎች መካከል 5. አላውቅም		
52.	ቅድመ ፅንሰ እንክብካቤ አገልግሎት ለመስጠት ተገቢው ሰው ማነው?	1. ዶክተር 2. የጤና መኮንን 3. ሚድዋይፍ 4. የጤና ኤክስቴንሽን ሠራተኛ 5. ሁሉም ተገቢ ናቸው 6. አላውቅም		
53.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች የት እንደሚሰጡ ያውቃሉ?	1. የመንግሥት ሆስፒታሎች 2. የጤና ጣቢያዎች 3. የጤና ኬላዎች		

		4. የግል ክሊኒኖች 5. ቤት 6. አላውቅም		
54.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች ምን ያህል ጊዜ መሰጠት አለባቸው?	1. አንዳንድ ጊዜ 2. ብዙውን ጊዜ 3. ያለማቋረጥ 4. አላውቅም		
55.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች በአጠቃላይ መቼ እንደሚሰጡ ሰጡ ያውቃሉ?	1. ከእርግዝና በፊት ወዲያውኑ በዛ ጊዜ 2. በእርግዝና የመጀመሪያዎቹ 2 ወሮች 3. በወሊድ ጊዜ 4. ከወሊድ በኋላ ወዲያውኑ 5. በሁለት እርግዝናዎች መካከል 6. ሴቶች / ጥንዶች ለመፀነስ ዝግጁ በሚሆኑበት ጊዜ 7. በማንኛውም ጊዜ ባለትዳሮች ለመፀነስ ሲያቅዱ 8. አላውቅም		

ክፍል 4: በቅድመ ፅንሰ እንክብካቤ ላይ የእናቶች አመለካከት የተመለከቱ ጥያቄዎች

ተ.ቁ	ጥያቄ	ምላሾች				
		በእስ	እስ	አየ	አል	በአል
56.	ቅድመ ፅንሰ እንክብካቤ አገልግሎት እርግዝና ለሚያቅዱ ሴቶች / ባለትዳሮች ሁሉ ከፍተኛ የሚሰጠው ጉዳይ ነው።					
57.	በሕክምና የተረጋገጠ በሽታ ያለባቸው ሴቶች ብቻ ቅድመ ፅንሰ እንክብካቤ አገልግሎቶችን መቀበል አለባቸው።					
58.	ከዚህ ቀደም ከእርግዝና ጋር የተያያዘ ችግር ያለባቸው ወይም ከህጻን ጋር የተያያዘ እክል ያሏቸው ሴቶች ብቻ የቅድመ ወሊድ እንክብካቤ አገልግሎቶችን መቀበል አለባቸው።					
59.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች የመውለድ ዕድሜ ክልል ውስጥ ላሉ ሴቶች ብቻ መሰጠት አለበት።					
60.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች ላገቡ ሴቶች ብቻ መሰጠት አለበት።					
61.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች ላላገቡ ሴቶች ብቻ መሰጠት አለበት።					

62.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች ለአቅሙ-ሄዋን ለደረሱ ሴቶች አስፈላጊ አይደሉም።					
63.	ባሎች ማንኛውንም ቅድመ ፅንሰ እንክብካቤ አገልግሎት ጊዜ ከሚስቶቻቸው ጋር መሄድ አለባቸው ።					
64.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች በወንድ የጤና ባለሙያዎች መሰጠት አለባቸው ።					
65.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች በሴት የጤና ባለሙያዎች መሰጠት አለባቸው ።					
66.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች በልምድ አዋላጆች መሰጠት አለባቸው።					
67.	ቅድመ ፅንሰ እንክብካቤ አገልግሎት በሚወለዱ ህፃናት ላይ ምንም ለውጥ አያመጣም ።					

ክፍል 5: በቅድመ ፅንሰ እንክብካቤ ላይ የባሎችን እውቀት የተመለከቱ ጥያቄዎች

ተ.ቁ	ጥያቄ	ምላሾች	ዝላል	ኮድ
68.	ከእርግዝና በፊት የሴቶች ጤና እና አኗኗር ሁኔታ በእናቶች እና የልጆች ጤና ላይም ሆነ በመጸነስ ላይ ተጽዕኖ ሊያሳድር ይችላል	1. አዎ 2. አይችልም 3. አላውቅም		
69.	ሴቶች ከመፅነሳቸው በፊት ጤናቸውን ማዘጋጀት እና መጠበቅ እንዳለባቸው ያውቃሉ?	1. አዎ 2. የለባቸውም 3. አላውቅም		
70.	ስለ ቅድመ ፅንሰ እንክብካቤ ሰምተው ያውቃሉ?	1. አዎ 2. አላውቅም	መልሶ አላውቅም ከሆነ ወደ ጥ.ቁ. 46 ይሂዱ	
71.	መረጃውን ከየት አገኙት? (ብዙ ምላሾች ሊኖሩ ይችላሉ)	1. የቤተሰብ አባላት / ዘመዶች 2. ጓደኞች 3. ከጤና ባለሙያዎች የጤና ኤክስቴንዥን ባለሙያዎች ጨምሮ 4. ከልምድ አዋላጆች 5. ከሴቶች የልማት ሰራዊት 6. ከመገናኛ ብዙሃን (ሬዲዮ ፣ ቴሌቪዥን ፣ ጋዜጣ ፣ ማህበራዊ ሚዲያ)		

		7. ከጎረቤቶች 8. ሌሎች (ይግለጹ)		
72.	ከእርግዝና በፊት ምን መደረግ እንዳለባት ያውቃሉ?	1. አዎ 2. አላውቅም	መልሶ አላውቅም ከሆነ ወደ ጥ.ቁ. 48 ይሂዱ	
73.	አዎ ከሆነ ፣ ሴቶች / ባለትዳሮች ከእርግዝና በፊት ምን ዓይነት ነገሮችን ማድረግ አለባቸው? (ብዙ ምላሾች ሊኖሩ ይችላሉ)	1. እርግዝና ማቀድ 2. ስለ ጤናማ እርግዝና ምክርን ለመፈለግ የጤና ተቋማትን መጎብኘት 3. ስር ለሰደደ የጤና ችግር ምርመራ ማድረግ እና መታከም 4. ኤች.አይ.ቪ እና የአባላዘር በሽታዎችን ምርመራ ማድረግ እና መታከም 5. መሃንነትን መመርመር እና መታከም 6. ለቴታነስ ክትባት መውሰድ 7. ልጆችን አራርቆ ለመውለድ የቤተሰብ ዕቅድን መጠቀም 8. ፎሊክ አሲድ መውሰድ 9. የሰውነት ክብደትን ማስተካከል 10. አመጋገብ ማስተካከል 11. ሲጋራ ማጨስ እና አልኮል መጠጣትን ማቆም 12. ፅንሰን የሚጎዱ እና ሕገ-ወጥ መድኃኒቶችን አለመጠቀም 13. በስራ ፣ በከባቢ እና በሕክምና ተቋማት ውስጥ ለአላስፈላጊ ኬሚካል / የጨረር ከመጋለጥ መቆጠብ 14. አስፈላጊ ሆኖ ሲገኝ ከዘረ-መል ጋር ለተያያዙ ችግሮች የዘረ-መል ምክር ፣ ምርመራ እና ህክምና ማግኘት 15. ፆታዊ ጥቃት ስለባ ለሆኑት የጤና እንክብካቤ አገልግሎቶች ፣ ሪፈራል እና የስነልቦና ድጋፍ መስጠት 16. ከዚህ በፊት ስር የሰደደ የጤና ችግር ላለባት ሴት ከመፀነስ በፊት ምክር ፣ ምርመራ እና ህክምና ማግኘት 17. ከዚህ በፊት ለነበረ ከእርግዝና ጋር የተያያዘ ችግር/ከህጻን ጋር የተያያዘ እክል ሕክምና ስለማድረግ ምክር ማግኘት		

		18. ሌሎች (ይግለጹ)		
74.	የትኛው ሥር የሰደደ የጤና ሁኔታ ፅንሱን ሊጎዳ ይችላል? (ብዙ ምላሾች ሊኖሩ ይችላሉ)	1. የስኳር ህመም 2. ሥር የሰደደ የደም ግፊት 3. ሥር የሰደደ የኩላሊት በሽታ 4. አስም 5. የልብና የደም ቧንቧ በሽታ 6. ኤች.አይ.ቪ እና የአባላዘር በሽታዎች 7. በዘር የሚተላለፍ በሽታ 8. የሚጥል በሽታ 9. ጭንቀት 10. አላውቅም		
75.	የትኛውን የሕይወት ዘይቤ ወይም ባህሪ ወይም አካባቢያዊ ሁኔታ ፅንሱን ሊጎዳ ይችላል? (ብዙ ምላሾች ሊኖሩ ይችላሉ)	1. ሲጋራ ማጨስ 2. አልኮል መጠጣት 3. ሕገወጥ እጾችን መውሰድ 4. ከመጠን በላይ ክብደት / ከትክክለኛ ክብደት በታች መሆን 5. ለጨረራ ወይም ኬሚካሎች መጋለጥ 6. ለፆታዊ ጥቃት ሰለባ መሆን 7. አላውቅም		
76.	ቅድመ ፅንሰ እንክብካቤ እና ማማከር ለማን ያስፈልጋል ብለው ያምናሉ?	1. ለታዳጊዎች 2. የመወለጃ ዕድሜ ክልል ውስጥ ላሉ ሴቶች 3. ሥር የሰደደ የጤና ችግር ላለባቸው ሴቶች 4. ቀደም ሲል የእርግዝና ችግር/ከህጻን ጋር የተያያዘ እክል ላለባቸው ሴቶች 5. ላላገቡ ጥንዶች 6. ለባለትዳሮች 7. ለሁሉም ሴቶች 8. አላውቅም		
77.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች ለምን እንደሚጠቅሙ ያውቃሉ?	1. አዎ 2. አላውቅም	መልሶ አላውቅም ከሆነ ወደ ጥ.ቁ. 53 ይሂዱ	
78.	መልሶ አዎ ከሆነ ፣ ጥቅሞቹ ምንድን ናቸው?	1. የእናቶችን ጤና ማሻሻል 2. ከሚወለዱ ህጻናት ጋር የተያያዘ እክል ለማሻሻል 3. ያልታቀደ እርግዝና ለመቀነስ 4. አላውቅም		

79.	ቅድመ ፅንሰ እንክብካቤ ለማን ይጠቅማል?	1. ለህፃን ፣ ብቻ 2. ለእናት ፣ ብቻ 3. ለህፃን እና ለእናት 4. አላውቅም		
80.	ሴቶች / ባለትዳሮች የቅድመ ፅንሰ እንክብካቤ መቼ ማግኘት አለባቸው?	1. ለማርገዝ እቅድ ሲያወጡ 2. ከመፀነስ 3 ወር በፊት 3. በእርግዝና የመጀመሪያዎቹ 3 ወራት 4. በሁለት እርግዝናዎች መካከል 5. አላውቅም		
81.	ቅድመ ፅንሰ እንክብካቤ አገልግሎት ለመስጠት ተገቢው ሰው ማነው?	1. ዶክተር 2. የጤና መኮንን 3. ሚድዋይፍ 4. የጤና ኤክስቴንሽን ሠራተኛ 5. ሁሉም ተገቢ ናቸው 6. አላውቅም		
82.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች የት እንደሚሰጡ ያውቃሉ?	1. የመንግሥት ሆስፒታሎች 2. የጤና ጣቢያዎች 3. የጤና ኬላዎች 4. የግል ክሊኒኮች 5. ቤት 6. አላውቅም		
83.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች ምን ያህል ጊዜ መሰጠት አለባቸው?	1. አንዳንድ ጊዜ 2. ብዙውን ጊዜ 3. ያለማቋረጥ 4. አላውቅም		
84.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች በአጠቃላይ መቼ እንደሚሰጡ ሰጡ ያውቃሉ?	1. ከእርግዝና በፊት ወዲያውኑ በዛ ጊዜ 2. በእርግዝና የመጀመሪያዎቹ 2 ወሮች 3. በወሊድ ጊዜ 4. ከወሊድ በኋላ ወዲያውኑ 5. በሁለት እርግዝናዎች መካከል 6. ሴቶች / ጥንዶች ለመፀነስ ዝግጁ በሚሆኑበት ጊዜ 7. በማንኛውም ጊዜ ባለትዳሮች ለመፀነስ ሲያቅዱ 8. አላውቅም		

ክፍል 6: በቅድመ ፅንሰ እንክብካቤ ላይ የባሎችን አመለካከት የተመለከቱ ጥያቄዎች

ተ.ቁ	ጥያቄ	ምላሾች				
		በእስ	እስ	አየ	አል	በአል
85.	ቅድመ ፅንሰ እንክብካቤ አገልግሎት እርግዝና ለሚያቅዱ ሴቶች / ባለትዳሮች ሁሉ ከፍተኛ ያለ ቅድሚያ የሚሰጠው ጉዳይ ነው።					
86.	በሕክምና የተረጋገጠ በሽታ ያለባቸው ሴቶች ብቻ ቅድመ ፅንሰ እንክብካቤ አገልግሎቶችን መቀበል አለባቸው።					
87.	ከዚህ ቀደም ከእርግዝና ጋር የተያያዘ ችግር ያለባቸው ወይም ከህጻን ጋር የተያያዘ እክል ያሏቸው ሴቶች ብቻ የቅድመ ወሊድ እንክብካቤ አገልግሎቶችን መቀበል አለባቸው።					
88.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች የመውለድ ዕድሜ ክልል ውስጥ ላሉ ሴቶች ብቻ መሰጠት አለበት።					
89.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች ላገቡ ሴቶች ብቻ መሰጠት አለበት።					
90.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች ላላገቡ ሴቶች ብቻ መሰጠት አለበት።					
91.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች ለአቅሙ-ሄዋን ለደረሱ ሴቶች አስፈላጊ አይደሉም።					
92.	ባሎች ማንኛውንም ቅድመ ፅንሰ እንክብካቤ አገልግሎት ጊዜ ከሚስቶቻቸው ጋር መሄድ አለባቸው።					
93.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች በወንድ የጤና ባለሙያዎች መሰጠት አለባቸው።					
94.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች በሴት የጤና ባለሙያዎች መሰጠት አለባቸው።					
95.	ቅድመ ፅንሰ እንክብካቤ አገልግሎቶች በልምድ አዋላጆች መሰጠት አለባቸው።					
96.	ቅድመ ፅንሰ እንክብካቤ አገልግሎት በሚወለዱ ህፃናት ላይ ምንም ለውጥ አያመጣም።					

ክፍል 7: በቅድመ ፅንሰ እንክብካቤ አገልግሎት አጠቃቀምን የተመለከቱ ጥያቄዎች

ተ.ቁ	ጥያቄ	ምላሾች	ዝላል	ኮድ
97.	ከዚህ በፊት በነበረው እርግዝናዎ፣ ቅድመ ፅንሰ እንክብካቤ አገልግሎት ከጤና ተቋም አግኝተው ያውቃሉ?	1. አዎ 2. አላውቅም	መልሶ አላውቅም ከሆነ ወደ ጥ.ቁ. 73 ይሂዱ	
98.	መልሶ አዎ ከሆነ ፣ የትኛውን የቅድመ ፅንሰ እንክብካቤ አገልግሎት ነዉ ያገኙት?	1. ስር የሰደደ የጤና ችግር ምርመራ እና ህክምና 2. የአባላዘር በሽታዎችን ምርመራ እና ህክምና 3. ኤች.አይ.ቪ ኤድስ የምክር አገልግሎት፣ ምርመራ እና ቫይረሱ በደም ውስጥ ካለ ፀረ-ኤች.አይ.ቪ መዳኒት ማሰጀመር 4. መሃንነትን ምርመራ እና ህክምና 5. ለቴታነስ ክትባት መውሰድ 6. የቤተሰብ ዕቅድን ተጠቅሞ ልጆችን አራርቆ መዉለድ 7. ፎሊክ አሲድ መውሰድ 8. ከዚህ በፊት ለነበረ ስር የሰደደ የጤና ችግር ከመፀነስ በፊት ምክር ፣ ምርመራ እና ህክምና ማግኘት 9. ከዚህ በፊት ለነበረ ከእርግዝና ጋር የተያያዘ ችግር/ከህጻን ጋር የተያያዘ እክል ክትትል እና ሕክምና ማድረግ 10. የሰውነት ክብደትን ማሰተካከል 11. አመጋገብ ማሰተካከል 12. ሲጋራ ማጨስ እና አልኮል መጠጣትን ማቆም 13. ፅንሰን የሚጎዱ እና ሕገ-ወጥ መድኃኒቶችን አለመጠቀም 14. በስራ ፣ በከባቢ እና በሕክምና ተቋማት ውስጥ ለአላስፈላጊ ኬሚካል / የጨረር ከመጋለጥ መቆጠብ		
99.	በአሁኑ እርግዝና ወቅት የቅድመ ፅንሰ እንክብካቤ አገልግሎት ከጤና ተቋም አግኝተዋል?	1. አዎ 2. አላገኘሁም	መልሶ አላውቅም ከሆነ ቃለ-መጠየቁ ስላለቀ አሰናብታት	
100.	መልሶ አዎ ከሆነ ፣ የትኛውን የቅድመ ፅንሰ እንክብካቤ አገልግሎት ነዉ ያገኙት?	1. ስር የሰደደ የጤና ችግር ምርመራ እና ህክምና 2. የአባላዘር በሽታዎችን ምርመራ እና ህክምና		

		3. ኤች.አይ.ቪ ኤድስ የምክር አግልግሎት፣ምርመራ እና ቫይረሱ በደም ውስጥ ካለ ፀረ-ኤች.አይ.ቪ መዳኒት ማሰጀመር 4. መሃንነትን ምርመራ እና ህክምና 5. ለቴታነስ ክትባት መውሰድ 6. ፎሊክ አሲድ መውሰድ 7. ከዚህ በፊት ለነበረ ስር የሰደደ የጤና ችግር ከመፀነስ በፊት ምክር ፣ ምርመራ እና ህክምና ማግኘት 8. ከዚህ በፊት ለነበረ ከእርግዝና ጋር የተያያዘ ችግር/ከህጻን ጋር የተያያዘ እክል ክትትል እና ሕክምና ማድረግ 9. የሰውነት ክብደትን ማሰተካከል 10. አመጋገብ ማሰተካከል 11. ሲጋራ ማጨስ እና አልኮል መጠጣትን ማቆ 12. ፅንሰን የሚጎዱ እና ሕገ-ወጥ መድኃኒቶችን አለመጠቀም 13. በስራ ፣ በከባቢ እና በሕክምና ተቋማት ውስጥ ለአላስፈላጊ ኬሚካል / የጨረሻ ከመጋለጥ መቆጠብ		
101.	መልሶ አዎ ከሆነ ፣ መቼ ነዉ የቅድመ ፅንሰ እንክብካቤ አገልግሎት ያገኙት?	1. ለማርገዝ ባቀድኩ ጊዜ 2. እርጉዝ ከመሆኔ ከ 3 ወር በፊት 3. በእርግዝናዬ የመጀመሪያዎቼ 3 ወራት 4. በሁለት እርግዝናዎቼ መካከል 5. ሌሎች (ይግለጹ)		
102.	መልሶ አዎ ከሆነ ፣የቅድመ ፅንሰ እንክብካቤ አገልግሎት በየትኛው ክፍል ነዉ ያገኙት?	1. የቤተሰብ እቅድ ክፍል 2. ድህረ-ወሊድ አገልግሎት 3. የማህፀን ሕክምና ክፍል 4. ሥር የሰደደ በሽታ ክትትል ክሊኒክ 5. ሌሎች (ይግለጹ)		
103.	መልሶ አዎ ከሆነ ፣ የት ነዉ የቅድመ ፅንሰ እንክብካቤ አገልግሎት ያገኙት?	☐ 1. የመንግሥት ሆስፒታሎች ☐ 2. የጤና ጣቢያዎች ☐ 3. የጤና ኬላዎች ☐ 4. የግል ክሊኒኮች ☐ 5. ሌሎች (ይግለጹ)		
104.	መልሶ አዎ ከሆነ ፣ ማን ነዉ የቅድመ ፅንሰ እንክብካቤ አገልግሎት የሰጡት?	1. ዶክተር 2. ነርስ 3. ሚድዋይዩ 4. የጤና መኮንን 5. የጤና ኤክስቴንሽን ሠራተኛ		

		6. ሌሎች (ይግለጹ)		
105.	የእርግዝና ዕቅድ ማውጣት እና በጤና እንክብካቤ አገልግሎቶች በማግኘት ላይ ውሳኔ የሚወስነው ማነው?	1. እኔ ብቻ 2. ባለቤቴ ብ 3. እኔ እና ባለቤቴ 4. ሌሎች (ይግለጹ)		
106.	መልሶ አዎ ከሆነ ፣ የቅድመ ፅንሰ እንክብካቤ አገልግሎት በምታገኝበት ጊዜ ባልዎ ድጋፍ አድርገዋል እና አብሮዎት መጥ ነበር?	1. አዎ 2. አይደለም		
107.	መልሶ አዎ ከሆነ ፣ የቅድመ ፅንሰ እንክብካቤ አገልግሎት ምን ያህል ጊዜ ያገኙት?	-----		
108.	በአሁኑ እርግዝና ወቅት የቅድመ ፅንሰ እንክብካቤ አገልግሎቶች አንዱ የሆነውን ሥር የሰደደ የህክምና ሁኔታ ከተመረመሩ ፣ የትኛውን ሁኔታ ነው የተመረመሩት?	1. የደም ግፊት 2. የስኳር በሽታ 3. የሳንባ ነቀርሳ 4. የደም ማነስ 5. የሚጥል በሽታ 6. መሃንነት 7. አስም 8 . ሌሎች (ይግለጹ)		
109.	በአሁኑ እርግዝና ወቅት የቅድመ ፅንሰ እንክብካቤ አንዱ የሆነውን ክብደትን ማስተካከል ከተገባሩ፣ ምን ዓይነት የክብደት ማስተካከል ነው የተገባሩት?	1. ጤናማ ክብደት መጠን ላይ መድረስ 2. ክብደት መቀነስ		
110.	በአሁኑ እርግዝና ወቅት የቅድመ ፅንሰ እንክብካቤ አገልግሎት አንዱ የሆነው ፎሊክ አሲድ ከወሰዱ ፣ በቋሚነት ሲጠቀሙ ነበር?	1. አዎ 2. አልነበረም		
111.	በአሁኑ እርግዝና ወቅት የቅድመ ፅንሰ እንክብካቤ አንዱ የሆነውን አመጋገብ ካስተካከሉ፣ ምን ዓይነት የአመጋገብ ማስተካከያ ነው የወሰዱት?	1. ከፍተኛ ካርቦሃይድሬት መጠን ያላቸውን ምግቦች መተዉ 2. ከፍተኛ ቅባት/ስብ መጠን ያላቸው ምግቦች መተዉ 3. ከፍተኛ ስኳር መጠን ያላቸውን ምግቦች መተዉ 4. የተመጣጠነ ከተለያዩ የምግብ ዓይነቶች ቶሎ ቶሎ መመገብ 5. ሌሎች (ይግለጹ)		

Declaration

I, the undersigned declare that this thesis is my original work in partial fulfillment of the requirement for the degree of Master of Public Health. I also declare that it has never been presented in this or any other university and that all resources and materials used in the thesis have been duly acknowledged.

Student Name: Yohannis Gzehagn

Signature:

Place of submission: SPHMMC

Date of submission: January 06, 2024

This thesis has been submitted with my approval as a College/university Primary advisor.

Primary Advisor Name: Yoseph Worku

Signature: _____

Date of submission: January 06, 2024

This thesis has been submitted with my approval as a College/university Co-advisor.

C0-Advisor Name: Birhanu Teshome

Signature: NA

Date of submission: January 06,2024