

ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCE
DEPARTMENT OF MEDICAL PHYSIOLOGY



MENSTRUAL-RELATED DISORDERS AND ASSOCIATED FACTORS AMONG WOMEN
USING HORMONAL CONTRACEPTIVES IN BISHOFTU TOWN SELECTED PUBLIC
HEALTH INSTITUTIONS, OROMIA REGION, ETHIOPIA, 2022

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Menstrual-Related Disorders and Associated Factors Among Women Using
Hormonal Contraceptives in Bishoftu Town Selected Public Health Institutions,
Oromia Region, Ethiopia, 2022

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Acronym and Abbreviations

AAU	Addis Ababa University
AUB	Abnormal Uterine Bleeding
AOR	Adjusted Odds ratio
BMI	Body Mass Index
CI	Confidence Interval
COR	Crude Odds ratio
DUB	Dysfunctional Uterine Bleeding
FSH	Follicle Stimulating Hormone
IUCD	Intrauterine Contraceptive Device
LH	Luteinizing Hormone
NSAIDs	Non-Steroidal Anti Inflammatory Drugs
PMS	Premenstrual symptoms
OCPs	Oral Contraceptive Pills
SPSS	Statistical Package for Social Sciences
SBP	Systolic Blood Pressure
DBP	Diastolic Blood Pressure
MRD	Menstrual Related Disorders

Abstract

Background: Menstruation is the regular monthly blood flow from the uterus through the vaginal canal. During regulation of menstrual cycle, hormone levels rise and fall. Menstrual disorders are gynecological problems that disrupt a woman's regular menstrual cycle. Most of the hormonal contraceptive methods affect the pattern and volume of menstrual bleeding and did not get attention as common reproductive health problem in Ethiopia. Despite the fact that there have been a few related studies in other parts of the country, there is no study in the current study area.

Objective: To determine the magnitude of menstrual related disorders and associated factors among women using hormonal contraceptives in Bishoftu town selected government health institutions, Oromia region, Ethiopia.

Methods: Institutional based cross sectional study was used to determine the magnitude of menstrual related disorders and associated factors among women using hormonal contraceptives in Bishoftu town. Systematic sampling technique was used to obtain the required sample size which was 423. Data was collected through structured questionnaires and recording of physiological variables.

Results: From the total study participants, 413 women were participated in this study, with response rate of 97.6%. From these about 126 (30.5%) had menstrual related disorder. The mean and standard deviation of the age of the participants were 29.75 and 3.37 respectively. Among associated factors cigarette Smoking ($p= 0.019$), alcohol intake ($p= 0.000$), coffee intake ($p=0.013$), injectable contraceptives ($p=0.006$), implant types of contraceptives ($p=0.001$), being overweight ($p=0.032$), and being obese ($p=0.046$) were significantly associated with menstrual related disorders.

Conclusion: The magnitude of menstrual related disorders is high among women using hormonal contraceptives in Bishoftu town and great emphasis should be given by responsible bodies as a major reproductive health problem.

Key Words: Menstrual Cycle, Menstrual related disorders, Hormonal contraceptives

1. INTRODUCTION

1.1. Background of the Study

Menstruation is the monthly discharge of blood and tissue from the uterus through the vaginal canal on a regular basis. Hormone levels rise and fall throughout the sex cycle (1). Menstruation is caused by a drop in progesterone levels and is a sign that pregnancy has not taken place. The average duration of menstrual blood flow is 3-5 days (2). Menarche is the first sign of female pubertal development, and it usually occurs between the ages of 12 and 13 years in well-nourished populations (2), despite international variations. Menstrual blood contains substances that promote uterine contraction. The secretory endometrium and menstrual blood contain large quantities of prostaglandins which causes uterine contraction and moves out the uterine contents during menses (1,2).

1.1.1. Regulation of Menstrual Cycle

Endometrial cycle consists of follicular phase and luteal phase (3). During follicular phase primordial follicle begins to enlarge. The enlargement of follicle continue until the day of ovulation from the start of menstruation. The luteal phase starts from the day of ovulation to the beginning of the next menstruation (4). The first day of menstrual bleeding is taken as day one in the dating of menstrual cycle. During this time uterine lining becomes breaks down and bleeds because of low estrogen levels (3,4). The follicular wall become ruptured and escape the ovum into peritoneal cavity. The escaped ovum goes to the fallopian tube and moved to the uterus. At the end it will moved out with the next menstruation unless the egg is fertilized (2,4). Endometrial lining become thick up on rising of estrogen level. The phase from ovulation to the next menstruation is secretory/luteal phase. At the beginning of secretory phase progesterone level become rises which causes secretion of glycogen and mucus (2-4). Toward the end of secretory phase if there is absence of pregnancy, estrogen and progesterone level become decreases with spiral arteries vasoconstricts which leads to involution of endometrium. Menstrual bleeding occurs at the conclusion of the luteal phase and the start of the follicular phase (2) . When fertilization fails to occur during the secretory phase, the endometrium is shed and a new cycle starts. This cycle repeat itself every month in women of reproductive age group (3,4).

1.1.2. Hormonal contraceptives

Hormonal contraceptives are birth control methods that contain estrogen and progestin, or only progestin. They are family planning program regarded as one of the most successful public health interventions of the century (5). Hormonal contraceptives are nowadays available in a variety of forms, including oral contraceptive pills, injectable and implants (5). All hormonal contraceptive techniques contain a progestin, which acts as a contraceptive methods. Many forms also contain estrogen (combined approaches), which helps to prevent ovulation (5,6).

Women using hormonal contraceptives can experience menstrual related disorders and discomforts. Hormonal contraceptives can affect the normal menstrual cycle by disturbing the monthly menstrual bleeding and can causes menstrual related discomforts (5,6). Many hormonal contraceptive methods affect the pattern and volume of menstrual bleeding. Some people may suffer irregular bleeding, others may notice variations in the length or heaviness of their bleeding, and some may have a complete cessation of bleeding while starting a new hormonal contraceptive technique (5,7). During the first three months of using Oral Contraceptive Pills, bleeding is common. Consistent bleeding is a typical reason for women to stop using hormonal contraception (5–7). The study of menstrual related disorders and associated factors is aimed to identify the magnitude of the problems and its associated factors.

1.2. Statement of the problem

Menstrual related disorders were neglected as reproductive health problems. Irregular menstrual cycles and menstrual dysfunction can have a significant impact on a young girl's or woman's mood and everyday social activities (8). There is no strong strategic plan to diagnose and treat menstrual related and other reproductive health problems in primary health care services (8,9). According to a WHO multi-country research, 5-17% of women experience menstrual bleeding between periods (9,10). Menstrual dysfunction, like other aspects of sexual and reproductive health problems, is not included in the global burden of disease estimates as reproductive health programs.

Almost no attention is given to menstrual related problems in most of the developing countries (9). According to a systematic assessment of the epidemiology of menstruation disorders in developing countries, about 4-8% of women have periods that last longer than 7-8 days (9).

Menstrual disturbances and problems are prominent and recurring source of unnecessary sorrow and stress among women (10,11). Study done in Nigeria on menstrual disorders among adolescent girls indicates that the daily activities of about 77.3% of study participants were affected due to severe menstrual pain (10). Menstrual disorders affect not only women, but also their families, communities, and economies. However, there are few population research on menstruation problem and their causes. Ethiopia has a higher prevalence of menstruation related problems than countries outside of Africa and within Africa, ranging from 59.7% to 85% (12).

Menstrual related disorders and discomforts are the most common problems that can have a direct impact on a woman's quality of life, interfering with their daily activities like working or studying (1,12). Menstrual problems affects about 60-80% of women in the reproductive age group. Polymenorrhea, oligomenorrhea, and dysmenorrhea are the most common menstruation problems (1).

Most contraceptive methods affect the pattern and volume of menstrual bleeding (6). Consistent bleeding is a typical reason for women to stop using contraception. The progestin only pills also known as "mini-pills" have significantly greater effect on the menstrual cycles than the Oral contraceptives which contain both estrogen and progestin (5,7). The most common adverse effects of injectable hormonal contraceptives are excessive and persistent bleeding (6,7). A study on menstrual impact of contraceptives indicates that, only 60% of women who started with the implants finished the five-year period. About 40% demanded removal of implants as soon as possible (5–7).

All kinds of hormonal contraception can cause abnormal uterine bleeding, which is a common adverse effect. In reality, irregular bleeding and other adverse effects are common reasons for women to stop using hormonal contraception (7). According to study on association of hormonal contraceptives and abnormal uterine bleeding in USA, about 32 % of women who took oral contraceptive pills discontinued within six months (6). About 46 % of the discontinuations were because of the negative effects. In the first year, 70% of women who use contraceptive injections and up to 80 percent of women who use contraceptive implants experience episodes of unpredictable bleeding (6,7).

Even though some related studies were conducted on menstrual related problems, the magnitude of menstrual related disorders and associated factors among women using hormonal contraceptives is not done in the current study area. The finding of this study identified the problems associated with using hormonal contraceptives and the risk of developing menstrual related problems and disorders.

1.3. Significance of the study

Problems related to menstrual cycles were undermined and not given attention as reproductive health problem in Ethiopia. Very few related studies were conducted on the prevalence of menstrual disorders in Ethiopia. However, there is no study on the magnitude of menstrual related disorders and associated factors among women taking hormonal contraceptives in Bishoftu town, Ethiopia.

This study investigated the magnitude of menstrual related disorders among women using hormonal contraceptives. The study will help the health sectors to manage factors associated with menstrual related disorders. This study will be used as an input for health planners to provide quality health care services to the societies. The study also help all the health sectors to improve the current health care services and work to the best of citizen's satisfaction of the services. Finally this study can be used as a reference material for researchers and health authorities who plan to conduct researches on the same or related topics of the study in the future.

2. LITERATURE REVIEW

2.1. Menstrual disorders

Menstruation is the physiologic feature of life for all women. Every 28 days, a regular menstrual cycle occurs, with menstrual flow lasting 3-7 days and an average blood loss of 30-80 ml (2). Any deviation from the typical duration of the menstrual cycle is referred to as irregular menstrual cycle (13). Aside from the well-known health difficulties associated with these menstrual diseases, they can also result in major consequences such as missed work and poor academic achievement. Menstrual dysfunction was not considered as reproductive health problem during assessment of the global burden of disease (13).

Menstrual disorder can range from a problem with cycle length to a problem with menstrual flow. The most common menstrual disorders are absence of menstruation (amenorrhea), excessive or prolonged flow (menorrhagia), light, infrequent or delayed flow (oligomenorrhea), painful menstruation (dysmenorrhea) and Pre-menstrual Syndrome (PMS) (10). Premenstrual Syndrome (PMS), is a set of psychological, physical, and behavioral symptoms that appear in the late luteal phase of the menstrual cycle in women of sexual maturity, disappear within a few days of the start of menstruation, and reappear in subsequent cycles. Stomach discomfort, anxiety, dyspnea, weeping fits, sadness, irritability, and swelling of the extremities are the most common symptoms (14). The absence of menstrual cycles known as amenorrhea. The lack of the first menstrual cycle, or menarche, by a certain upper age limit is known as primary amenorrhea. The absence of three or more consecutive menstrual periods after the first menstrual period is known as secondary amenorrhea (15).

Dysmenorrhea is a condition in which the uterus pains or cramps in the lower abdomen soon before and/or during menstruation. It's been suggested that the release of prostaglandins in menstrual fluid causes uterine contractions, which causes dysmenorrhea pain (16). There are two types of dysmenorrhea. Primary dysmenorrhea is manifested by excessive, abnormal uterine contractions that are not accompanied by any other pathologic alterations in the pelvis minor.

Secondary dysmenorrhea is occur due to other gynecological problems like endometriosis, a chronic inflammatory disorder of the pelvis minor, endometrial polyps, and cervical stenosis, as well as structural and functional anomalies of the reproductive organs (17).

A study conducted in USA on menstrual disorders in adolescence indicates that Primary dysmenorrhea is mostly related with ovulation and gynecological maturation. The endometrium produces prostaglandins after ovulation, which cause local vasoconstriction and myometrium contraction. Secondary dysmenorrhea is more likely associated with irregular and excessive menstrual flow (15).

Menorrhagia is defined as menstrual cycles with excessive bleeding in terms of volume (>80ml). Hypomenorrhea is menstrual flow which lasts for <2 days (8). Abnormal uterine bleeding is characterized as uterine bleeding that is extremely heavy, protracted, or frequent (18). One of the most significant gynecologic disorder is abnormal uterine bleeding. The use of several hormonal contraceptive methods can possibly cause abnormal menstrual bleeding (19).

2.2. Magnitude of menstrual disorders

According to a study on 174 young Japanese college students, 33.3% had irregular menstruation and 66.7% had normal menses. Dysmenorrhea scores were significantly higher in students with irregular menstruation than in students with regular menstruation. From the study participants 48.3% had premenstrual symptoms and 51.7% students had no premenstrual symptoms (20).

A Cross-sectional study in Northern India on menstrual problems among undergraduate students shows that the most prevalent menstruation problem among students was premenstrual syndrome (PMS) (85.24 %) and 60.66 % of the students had dysmenorrhea (21). A Cross sectional study to assess the Prevalence of Menstrual abnormalities among Medical Students of India states that the prevalence of dysmenorrhea was (86%), Pre-menstrual Syndrome was (83%) and irregular menstrual cycles (25%) (13). The most prevalent menstrual disorders in this study was dysmenorrhea followed by premenstrual syndromes (13).

The study done among Turkish college students on Premenstrual Syndrome found that about 72.1 % of the students were experienced PMS. PMS was shown to be considerably higher in students who had monthly irregularities, dysmenorrhea, drank 2 cups or more of coffee per day, smoked, and drank alcohol ($p < 0.05$) (14).

Study conducted on the title of Menstrual pattern and common menstrual disorders among university students in Turkey investigated that the average age of the study subjects at menarche was 12.8 ± 1.3 years. The study revealed that the prevalence of menstrual irregularity (31.2%), prolonged menstrual bleeding (5.3%) and dysmenorrhea (89.5%) (22).

According to the study of prevalence, characteristics and effects of menstrual disturbances on daily activities among adolescent girls in Brazil, it was observed that about 33% of the study participants had irregular menstruation. The prevalence of dysmenorrhea was about 73% and was accounts for about 31% of school absenteeism (23).

A systematic review and meta-analysis done on the prevalence of menstrual disorders in Iran reported that the prevalence of primary dysmenorrhea (73.27%) oligomenorrhea (13.11%), polymenorrhea 9.94%, menorrhagia (19.24%), metrorrhagia(6.04%) (8). A study conducted on dysmenorrhea and associated factors among Polish women found that out of total 1,317 study participants about 199 (17.7%) had irregular menstrual cycle. From women who had irregular menses about 94% experience dysmenorrhea and of these about 70.7% had severe pain based on numeric pain rating scale (17). Study conducted among nursing students in Saudi Arabia found that the prevalence of irregular menstruation, oligomenorrhea and polymenorrhea was 36.4%, 21.6% and 21.3% respectively. The study also showed that 96.3% of the participants had dysmenorrhea of which 35.8% were severe dysmenorrhea and 47.5% had moderate and severe dysmenorrhea (24).

According to study done among female undergraduate students in Eastern Nigeria the prevalence rate of menstrual disorder was 34% (10). The study found that the most common and prevalent menstrual disorder during examination was dysmenorrhea(37.5%) followed by premenstrual syndrome (33.1%) and oligomenorrhea(19.9%) (10).

Another study conducted in South Western Nigeria on prevalence of menstrual disorders among adolescent girls indicated that the three most common menstrual disorders experienced by the study participants were dysmenorrhea (77.8%), menorrhagia (57.4%) and metrorrhagia (18.6%) (11).

A cross sectional study among female South African Hajji Pilgrims found that , of 308 study participants who respond to the question related to menstrual cycle problems, about 18% had menstrual related problems and 82% had no problem (25). From study participants who use hormonal menstruation manipulation 23% responded that they had menstrual cycle related problems and 9% of who did not attempt hormonal menstruation manipulation had no menstrual cycle related problems (25).

An observational descriptive cross-sectional study on Nature and Prevalence of Menstrual Disorders among Teenage Female Students in Egypt stated that the prevalence of Oligomenorrhea was 6.3% and that of polymenorrhea was 1.8% (26). Hypomenorrhea was experienced by 8.8% of students, and hypermenorrhea was reported by 4.2%. About 8.4% of participants had experienced irregular period. The most prevalent menstrual problem was dysmenorrhea and it accounts for about 66%. Premenstrual syndrome was reported by 56.1% of study participants (26).

A descriptive institutional based cross-sectional study conducted at the Al Neelain University, Faculty of Nursing in Sudan found that more than half of the study participants (55%) had irregular menstruation. The prevalence of dysmenorrhea was relatively very high (94.0%). This study indicated that about 32.89 % of school absenteeism occurred as a result of very painful period and about 13.16% experience painful and heavy period with vomiting which prevent them from attending school all days (27).

In Ethiopia, according to the study conducted on Prevalence, Impact, and Management Practice of Dysmenorrhea among students in University of Gondar the prevalence of dysmenorrhea was 77.6% (28). A study conducted among Bahir Dar University students reported that the overall prevalence of primary dysmenorrhea since was 85.1%. The magnitude of respondents who had Premenstrual Syndrome was 342(72.8%). According to the finding of this study the most common symptoms manifested by dysmenorrheic respondents were abdominal cramp (72.8%), depression (49.2%), fatigue (47.5%), backache (43.2%), and bloating was 41.2% (12). Institutional based cross-sectional study done among Debre Markos town secondary and preparatory school students found that the prevalence of dysmenorrhea was 69.3% (29). The recent study conducted on the title of Menstrual related discomfort and associated factors among undergraduate students in Ambo University, Central Ethiopia showed that the prevalence of menstrual related discomfort was found to be 68.6%. This study reported that the most prevalent menstrual related discomfort was dysmenorrhea and was about 81.2% (1).

2.3. Factors Associated with Menstrual Related Disorder

Cross-Sectional Study conducted among Polish women found that dysmenorrhea had commonly occur among women who had family history of dysmenorrhea. This study showed that age at menarche, stress frequency, lack of physical activity and self-esteem were significantly associated with dysmenorrhea (17).

According to study done in Sweden on menstrual disorders and associated factors among adolescent girls the lower body weight, body mass index and systolic blood pressure were significantly associated with secondary amenorrhea and oligomenorrhea. Physical activity was also associated with secondary amenorrhea (30).

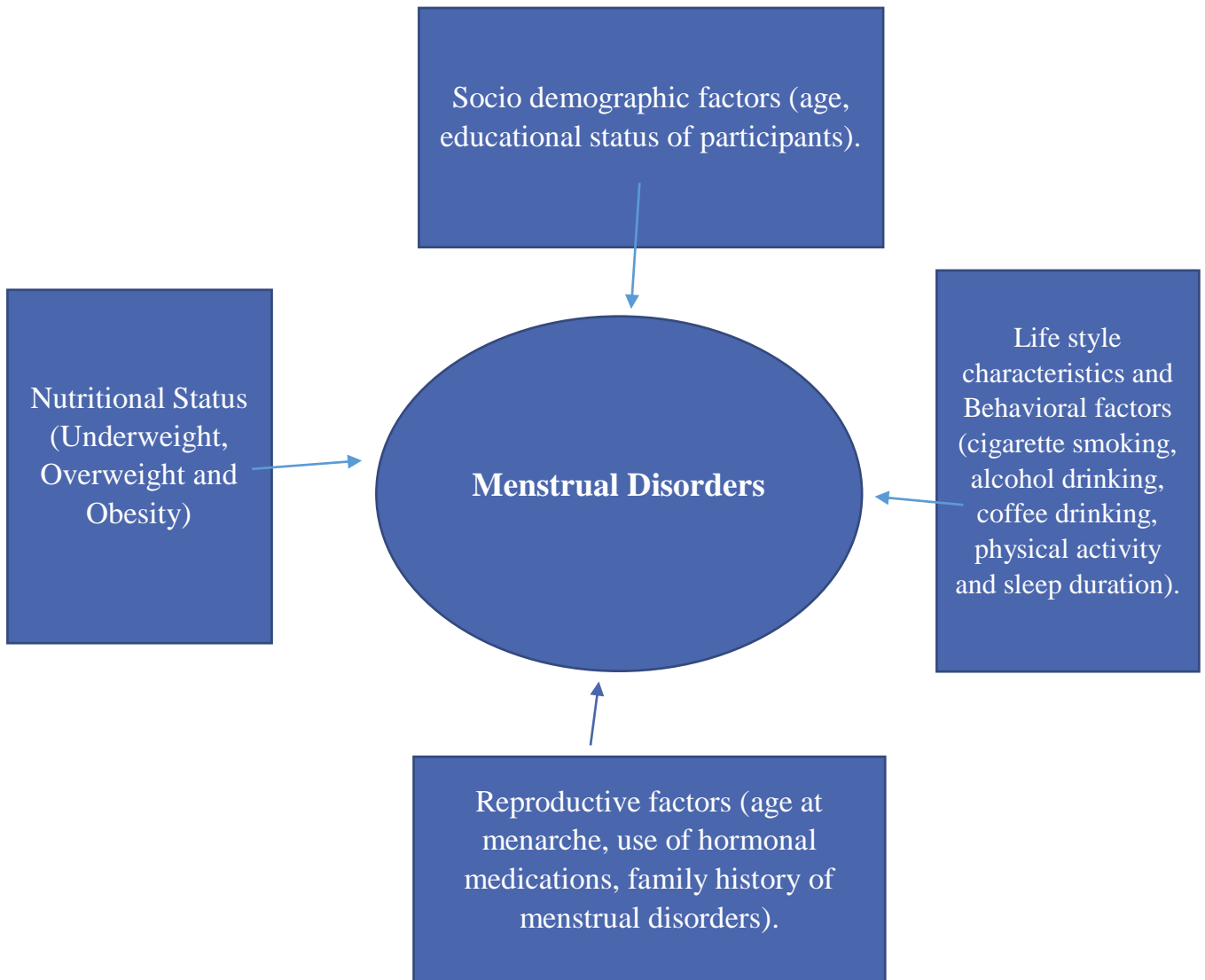
Study conducted on prevalence and risk factors of dysmenorrhea found that family history of dysmenorrhea, the use of Oral Contraceptive Pills and other forms hormonal contraceptives were associated with dysmenorrhea. Early age at menarche increase the risk of dysmenorrhea. Physiological factors like stress related to life events were associated with dysmenorrhea (31).

The type of food had its own effects on menstrual pain. Higher level of fat and oil consumption were associated with long duration of menstrual pain. But women who had high fruit and vegetable intake experience less pain during menstruation (32). Dysmenorrhea more commonly occur in single women than in married women. However, married women significantly suffered from amenorrhea and hyper menorrhea. Being late at menarche (more than 14 years) significantly associated with irregular menstruation (24).

In Ethiopia, family history of dysmenorrhea and duration of menstrual flow were found to have significant association with dysmenorrhea (28). Study done in Debre Markos indicate that family history of dysmenorrhea, excessive sugar intake, early menarche (≤ 12 years), late menarche (≥ 15 years), being sexually active and heavy menstrual flow had strong association with the occurrence of dysmenorrhea (29). Another study which conducted among students of Bahir Dar University found that the most important predictor of dysmenorrhea and premenstrual syndrome was family history of dysmenorrhea and premenstrual syndrome. Study participants with family history of dysmenorrhea was four times more likely to have dysmenorrhea than those not having family history of dysmenorrhea. Heavy and prolonged period had significantly associated with dysmenorrhea (12).

According to the study conducted on menstrual related discomfort and associated factors among undergraduate students in Ambo University, being single ,smokers and high consumption of coffee and alcohol were significantly associated with menstrual related discomfort. The use of caffeine, tobacco and alcohol exacerbate and increase the symptoms of premenstrual syndrome and dysmenorrhea. This study also reported that gynecological and obstetric factor like heavy and prolonged period had positive effect on menstrual related discomfort (1).

2.4. Conceptual Frame Work



Conceptual framework developed for menstrual related disorders and associated factors from literatures (1,12,29,33,34).

3. OBJECTIVES

3.1. General Objective

- Determining the magnitude of menstrual related disorders and associated factors among women using hormonal contraceptives in Bishoftu town selected public health institutions, Oromia Region, Ethiopia.

3.2. Specific Objectives

- To determine the magnitude of menstrual related disorders among women using hormonal contraceptives in Bishoftu town selected public health institutions, Oromia Region, Ethiopia.
- To identify factors associated with menstrual related disorders among women using hormonal contraceptives in Bishoftu town selected public health institutions, Oromia Region, Ethiopia.
- To describe menstrual side effects of hormonal contraceptives among women using hormonal contraceptives in Bishoftu town selected public health institutions, Oromia Region, Ethiopia.
- To identify which contraceptive method highly affects women's menstrual pattern.

4. METHODS AND MATERIALS

4.1. Study area

The study was conducted in Bishoftu town, Oromia Regional State of Ethiopia. It is located 47 km to the South East of the capital Addis Ababa. The town is located at an elevation of 1,920 meters. Formerly known as ‘Debre Zeyit’ or the Mount of Olives. The town was renamed in the late 1990s as Bishoftu which means the "place of water/lakes/springs". The town is surrounded by seven volcanic crater lakes which are the main tourist attraction sites in the region. Bishoftu town has 14 kebeles and projected total population of 99,928, of whom 47,860 were men and 52,068 were women based on 2007 national census. In the town there are one government General Hospital and six health centers.

4.2. Study Period

The study was conducted from June to September 2022.

4.3. Study Design

Institutional based cross sectional study was used to assess the prevalence of menstrual related disorders and associated factors among women using hormonal contraceptives in Bishoftu town.

4.4. Population

4.4.1. Source Population

- All women who had family planning follow up at selected public health institutions in Bishoftu town were considered as source population.

4.4.2. Study Population

- Women who used hormonal contraceptives at selected public health institutions in Bishoftu town in the study period.

4.4.3. Study Unit

- Women who had used hormonal contraceptives at selected public health institutions those who fulfil the inclusion criteria, agreed to fill the questionnaires’ and signed the consent were considered as study unit.

4.5. Inclusion and Exclusion Criteria

4.5.1. Inclusion Criteria

- Women in child bearing age who were using hormonal contraceptives during the study period and presented in the selected health institutions on the day of data collection.

4.5.2. Exclusion Criteria

- All lactating women
- Women who had confirmed obstetric and gynecological problems
- Women who were critically ill, couldn't talk, listen or had severe form of mental illness
- Women who took hormonal contraceptives for the first time at the time of data collection

4.6. Sample size determination and Sampling techniques

4.6.1. Sample size determination

The sample size was calculated using single population proportion formula by assuming the proportion of menstrual related disorders 50%. The single population proportion formula is: $n = (Z \alpha/2)^2 P (1-P) / d^2$

Where: n = minimum required sample size

Z=z-score at a given percent of confidence interval (95%)

Z $\alpha/2$ = Coefficient at level of significance = 1.96

P= proportion of menstrual related disorders (50%) = 0.5

d = Margin of error (5%) = 0.05

Non response rate = 10%

$n = (1.96)^2 \times 0.5 (1-0.50) \div (0.05)^2 = 384$. By adding 10 % non-respondents the final calculated sample size was $n = 384 + 384 \times 10\% = 423$

4.6.2. Sampling Technique

Systematic sampling technique was used to assess the prevalence of menstrual related disorders and associated factors among women following hormonal contraceptives in Bishoftu town selected public health institutions. First the numbers of public health institutions giving family planning services were identified.

The total sample size was then allocated using population allocation formula to size of hormonal contraceptive users in the selected public health institutions. Population allocation formula was performed based on the number of hormonal contraceptive users data obtained from selected health institutions. Study participants were selected from hormonal contraceptive users of each selected institutions using systematic random sampling. The sampling intervals (k) was obtained by dividing total number of women following hormonal contraceptive in each selected health institutions by allocated sample. The total number of women using hormonal contraceptives were 9219. Then the total number of hormonal contraceptive users was divided by the sample size (423) to calculate the constant “k” and it was 21, One number (7) was selected from one to 21 by lottery method and was first subject to be interviewed .Then the data was taken every 21st value in all selected health institutions until the proposed sample size was attained.

4.7. Variables

4.7.1. Dependent Variable

- Menstrual Related Disorders

4.7.2. Independent Variables

- Socio-demographic variables (age, religion, educational status, occupation)
- Age at menarche
- Nutritional status (underweight, normal, overweight/obese)
- Physical activity
- Sleep duration
- Family history of menstrual disorders
- Substance use (smoking, alcohol and coffee)

4.8. Operational definitions and definition of terms

Age at menarche: is the age at which the study participants see their first menstruation (35) and for the purpose of this study it is categorized as:

Early menarche: ≤ 12 years, Medium/average menarche: 13-16 years, Late/Delayed menarche: ≥ 16 years

Hormonal Contraceptives: are birth control drug that contain estrogen and progestin, or only progestin hormones(5).

Irregular Menstruation: when the menstrual cycle length is less than 21 days or more than 35 days (34).

Regular menstrual cycle: is menstruation that occurs in interval of 21-35 days (36).

Amount of menstrual blood flow per a day are categorized as follows for the purpose of this study (29):

Scanty (1-2 pads/day), Moderate (3-5 pads/day), Heavy (>5 pads/day),

Duration of menstrual blood flow per a day are (29):

Short period (1-2 days), Normal (3-7 days), Long period (>7 days)

Sleep duration: is categorized in to three categories based on National Sleep Foundation recommendation of sleep duration (37) as follows:

Short sleep duration: Sleeping less than seven hours of sleep per night.

Normal (Optimal) sleep duration: Sleeping between seven and nine hours per night.

Long sleep duration: Sleeping more than nine hours per night.

Body mass index: is one of nutritional index which is calculated by dividing weight to height square and WHO categorized as follows for young adults BMI in Kg/m²:

Normal = 18.5-24.9

Underweight = < 18.5

Overweight = 25-29.9

Obese = \geq 30

Substance use: use of one or more psycho-stimulant drugs (cigarette, alcohol, khat)

Alcohol drinking: For the purpose of this study only the volume of alcohol they drink is measured and categorized them as follows:

Alcohol user: those who drink more than one liter or at least 2-3 glass of alcohol per week.

Coffee user: Those who drink three or more cup of coffee per day.

Cigarette smoker: someone who smokes cigarette either daily or occasionally (WHO).

Regular exercise: If the women had two or more physical exercise per week.

Pain during menses: for the purpose of this study pain during menstruation was classified as follows:

Mild: if the pain stays for less than one hour.

Moderate: if the pain stays one to two hours.

Severe: if it is painful all the time during menstruation.

4.9. Data Collection Instrument and Procedure

4.9.1. Data collection Tool

Data was collected by using structured questionnaires and by recording of physiological variables. Data collection tool was developed and adapted after review of relevant literatures. Data questionnaire was prepared in English and then translated to local languages Afan Oromo and Amharic versions that the participants can easily understand. To check consistency of the translations, back translation to English was done by language expert.

The questionnaires has four parts, the first section containing questions on socio-demographic information. The second part address life style and behavioral factors. The third part encompasses questions regarding the feature of menstrual cycle. The fourth part was recording of physiological variables. The weight and height of participants were measured to calculate Body Mass Index. Systolic and diastolic blood pressure of all participants were recorded by using blood pressure cuff or sphygmomanometer.

4.9.2. Data collection procedure

The data from the study participants were collected by staff Nurse at study area and supervised by the principal investigator. The objective of the study, relevance of the study and how to fill the questionnaire was explained to the study subjects. The study participants were asked for voluntariness and then signed informed written consent. Further explanation and correction was given on questions by data collector or facilitator as required. The study participants were asked to give full and correct information about their socio demographic, behavioral characteristics and menstrual profiles. Weight and height of all study participants were measured by using weight and height scale respectively. Then body mass index was calculated for all study participants. After the patient sit-down and got rest, systolic and diastolic blood pressure of all participants were measured by using blood pressure cuff or sphygmomanometer.

It was measured by applying blood pressure cuff or sphygmomanometer on the middle of left upper arm. The previous measurements were taken from the patient's card and used as a reference for comparison.

4.9.3. Data quality control

Before starting data collection there was one day training for data collectors in order to understand the objective of the study, the overall steps and procedures of data collection and proper data handling, and ways of approaching the respondents.

Before actual data collection pretest was performed on 20 women to check the validity of data collection tool and to determine the time required for data collection. Based on the finding of pretest the possible amendments was made. There was close supervision of principal investigator throughout the data collection period. After the data was collected, the collected data was reviewed for its assurance and to be acceptable. The data was stored in safe place by responsibility of the data collectors after collections.

4.9.4. Data processing and analysis

The collected data was checked for their completeness and coded. The data was entered in Epi-data software version 3.1 and exported to SPSS (Statistical Package for Social Sciences) version 26 for analysis. Descriptive analysis was performed using frequency, percentage and mean based on the type of variables. Texts and tables were used for data presentation. Furthermore binary logistic regression and multivariate analysis was used to determine association between menstrual related disorders and explanatory variables.

4.9.5. Ethical consideration

Ethical clearance was obtained from the Institutional Review Board of Addis Ababa University. Support letter was also written from Addis Ababa University School of Medicine Department of Medical Physiology to all concerned bodies. Informed written consent was signed by the study participants to start data collection. The respondents were assured that their responses would remain confidential.

5. RESULT

5.1. Socio-demographic characteristics of study participants

A total of 413 women were included in the study with the response rate of 97.6%. The minimum age of the study participants' was 19, while the maximum age of the study participants' was 39 with the mean age and standard deviation of 29.75 and 3.37 respectively. The majority of the study participants (58.4%) were Orthodox Christians religion followers followed by Protestants which account for about 21.1%. From the total of 413 study participants about 13.8% were Islam religion followers and 6.8% were Wakefata. About 63.2% of the study participants were Oromo ethnic group followed by Amhara ethnic group which accounts for 22%. Other nation and nationalities were about 14.8% from the total of study participants. Majority of the study participants were married (98.3%) and were house wives (42.1%). About 1.5% of single women were included in the study. Majority of them attended secondary education (48.4%). From the total of 413 study participants, about 20.1% of women can at least read and write. About 12.3% of the study participants attended primary education and 7.5% have diploma and above. Only about 11.6% can't read and write. About 26.4% of the study participants were merchants and about 24.9% of the study participants were those doing private jobs. From the total of study participants about 6.5% of women were government employee in different sectors (Table 1).

Table 1. Socio-demographic characteristics of women following hormonal contraceptives at Bishoftu town selected public health institutions 2022 (n=413).

Variable	Category	Frequency	Percent (%)
Religion	Orthodox	241	58.4
	Muslims	57	13.8
	Protestants	87	21.1
	Wakefata	28	6.8
	Total	413	100
Ethnicity	Oromo	261	63.2
	Amhara	91	22
	Others	61	14.8
	Total	413	100
Marital Status	Single	6	1.5
	Married	406	98.3
	Divorced	1	0.2
	Total	413	100
Educational Status	Can't read and write	48	11.6
	Read and write	83	20.1
	Primary education	51	12.3
	Secondary education	200	48.4
	Diploma and above	31	7.5
	Total	413	100
Occupation	House wife	174	42.1
	Merchant	109	26.4
	Government employee	27	6.5
	Industries employee	103	24.9
	Total	413	100

5.2. Behavioral Characteristics of Study Participants

From a total of 413 study participants about 95.2 % responded they had never smoked cigarette and only 4.8% smoked daily or occasionally. Majority of the study participants (55.4 %) responded that, they never had history of alcohol drinking and about 64.6% of women were taking coffee one to three times per day. Most of the study participants (88.6%) responded that, they had adequate sleep which is seven to nine hours per day and about 93.9% had no history of regular physical exercise (Table 2).

Table 2. Behavioral Characteristics of women following hormonal contraceptive at Bishoftu town selected public health institution, 2022.

Variable	Category	Frequency	Percent (%)
Smoking status	Never smoked	393	95.2
	Smoked	20	4.8
	Total	413	100
Alcohol intake	No alcohol intake	229	55.4
	< 3 times per week	161	39
	3-5 times per week	23	5.6
	Total	413	100
Coffee intake	No caffeine intake	136	32.9
	1-3 times per day	267	64.6
	More than 3x per day	10	2.4
	Total	413	100
Sleep hours	< 7 hours per day	35	8.5
	7-9 hours per day	366	88.6
	>9 hours per day	12	2.9
	Total	413	100
Physical Activities	No or < 2 days/week	388	93.9
	2 or more days/week	25	6.1
	Total	413	100

5.3. Menstrual and Contraceptive profiles of study participants

From a total of study participants 304 (73.6%) women have seen their first menstruation between the ages of 13-16. Fifty women or about 12.1% and 59 (14.3%) see their first menses at the age of less than 13 years and after 16 years respectively. Majority of the women who used hormonal contraceptives had one or more children and only about 20 (4.8%) had no child. Most of the study participants (65.1%) had period interval between 21-35 days per period. From the total of women who used hormonal contraceptives about 16.9% and 17.9% had period interval of less than 21 days and greater than 35 days per period respectively. Majority of study participants (93.9%) had duration of menstrual bleeding 3-7 days per period. About 0.5% and 5.6% had duration of menstrual bleeding less than three days and more than seven days per period respectively (Figure 1, 2).

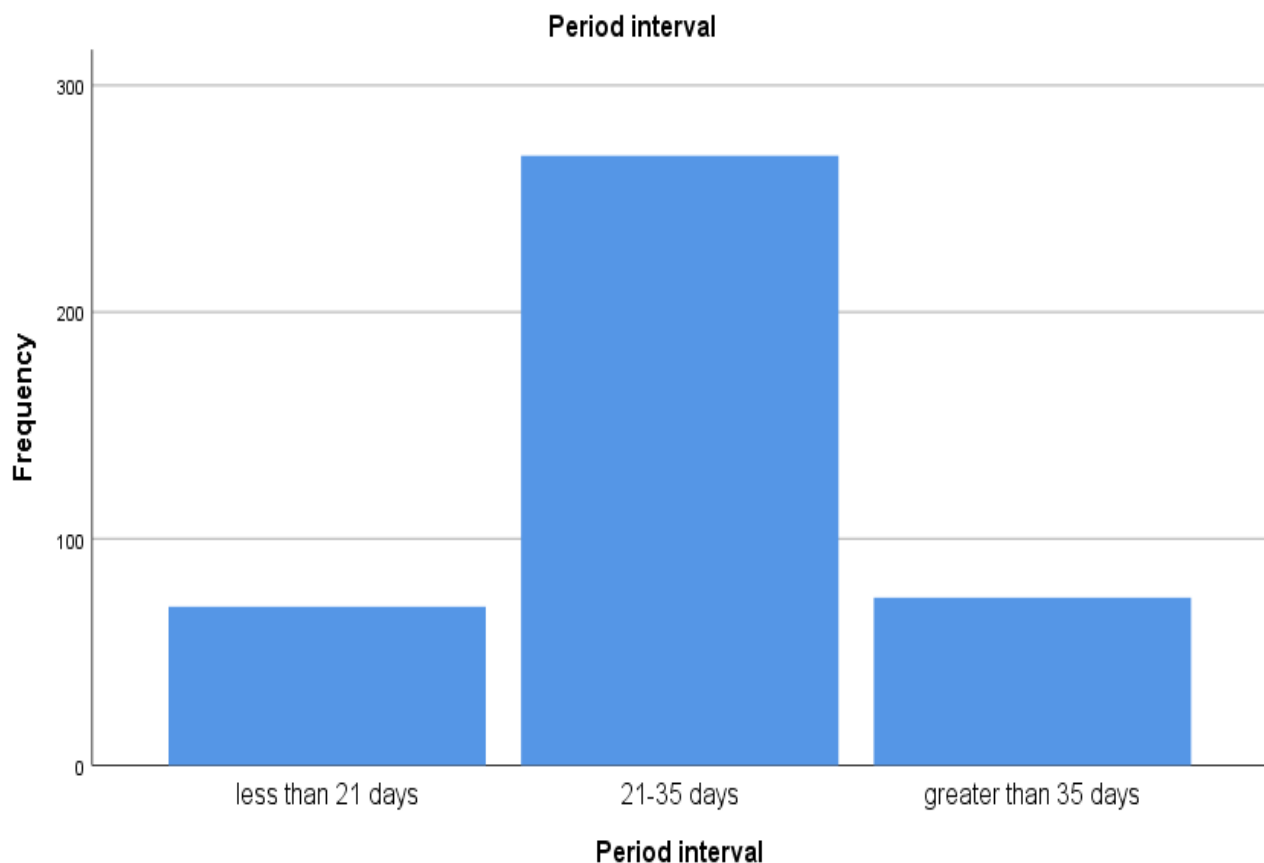


Figure 1. Period interval of women using hormonal contraceptive in Bishoftu town selected public health institutions 2022 (n=413)

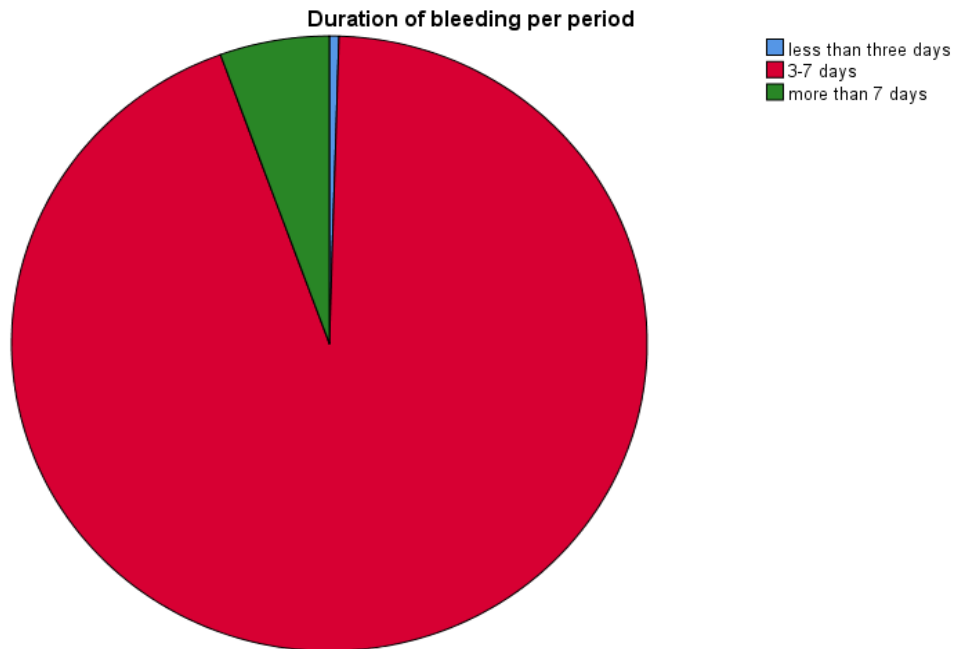


Figure 2. Duration of bleeding per period of women using hormonal contraceptive in Bishoftu town selected public health institutions 2022 (n=413)

Majority of the women who used hormonal contraceptives which accounts 334 (80.9%) had used three to five sanitary pads per period. About 1% and 18.2% had used less than two and used more than five sanitary pads per period respectively. Menstrual related pain was observed among 111 (26.9%) of women following hormonal contraceptives. No Pain was observed in 302 (73.1%) of women after the use of hormonal contraceptives. From the women who had menstrual related pain about 5.8%, 5.6% and 16.5% experience mild, moderate and severe menstrual pain respectively.

Majority of the study participants (94.4%) had no family history of menstrual pain and only about 4.1% had family history of menstrual pain. About 1.5% didn't know whether they had family history of menstrual pain or not. About 43 (10.4%) women used medication for their pain. Most of the women who developed severe menstrual pain used pain relievers (12.3%) and only 0.2% had used traditional method for their pain. The study shows that from the total of study participants 124 (30%) of women using hormonal contraceptives feel discomfort before, during and after the use of contraceptives.

All of the study participants had no bleeding between periods which is not menstrual bleeding. Majority of the women participated in the study 144 (34.9%) used injectable type of hormonal contraceptives which is commonly known as Depo-Provera. A single injection of Depo-Provera is used as contraceptive for only three months and they took it every three months. While about 130 (31.5%) and 139 (33.7%) had used oral contraceptive pills and implants respectively. Oral contraceptive pills used by the study participants were combined oral contraceptive, progesterone only pills and post coitus pills which commonly known as post pills. Implant type of hormonal contraceptives used by the study participants were Implanon and Jadelle which serve as hormonal contraceptives for about three and five years respectively (Figure 3).

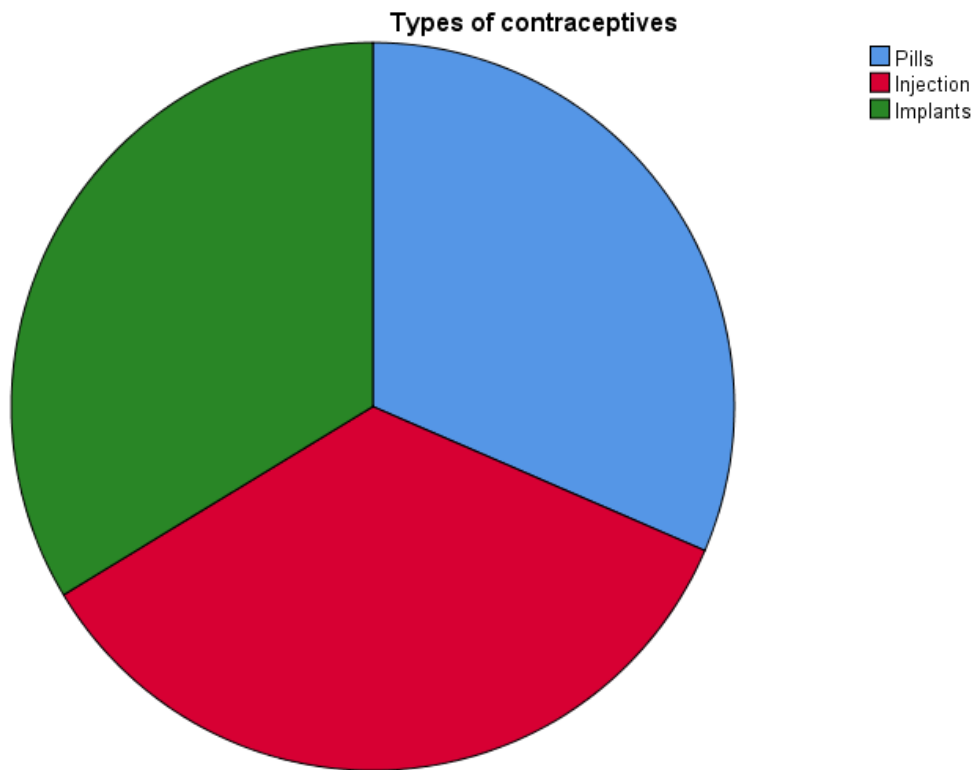


Figure 3. Types of hormonal contraceptives used by women in Bishoftu town selected public health institutions 2022 (n=413)

5.4. Magnitude of Menstrual Related Disorders among Women using Hormonal Contraceptives

The overall prevalence of menstrual related disorders among women following hormonal contraceptives in Bishoftu town selected public health institutions was about 30.5%. From the total of 413 study participants 126 (30.5%) had menstrual related disorder. The finding of this study indicates that irregular menstruation was observed in 144 (34.9%) of women using hormonal contraceptives. Women who developed irregular menstruation had menstrual period of less than 21 days or more than 35 days per period. Oligomenorrhea and polymenorrhea were commonly observed in most of the study participants who used hormonal contraceptives. The magnitude of Oligomenorrhea and polymenorrhea was 74 (17.9%) and 70 (16.9%) respectively. About 23 (5.6%) of the study participants had experienced prolonged menstrual bleeding which is commonly known as hyper menorrhea and only about 0.5% had developed hypo menorrhea (blood flow less than three days) after the use of hormonal contraceptives.

The prevalence of menorrhagia among women following hormonal contraceptives in Bishoftu town selected public health institutions was 18.2%. From a total of 413 study participants 75 (18.2%) women had developed heavy and excessive menstrual bleeding after the use of hormonal contraceptives. Women who had menorrhagia responded that they used more than five sanitary pads per period. The study participants also responded that menorrhagia was one of the menstrual problem which affects their daily activities due to heavy and excessive bleeding. Severe and frequent pelvic pain which is commonly known as dysmenorrhea was observed in 47 (11.4%) of study participants. According to the finding of this study, severe and frequent menstrual pain was the most common reason for job and school absenteeism. Some of the study participants who developed dysmenorrhea had used modern and traditional pain relievers. The finding of this study also revealed that about 148 (35.8%) of study participants experienced premenstrual syndrome.

The most common menstrual related problems observed were premenstrual syndrome followed by menorrhagia (heavy and excessive menstrual bleeding) and oligomenorrhea (infrequent and delayed menstruation) which stays more than 35 days without menses. Most of the study participants responded that hormonal contraceptives disturbed their normal menstruation cycle.

A total of 413 women were involved in the study, of which about 78 (18.9%) developed weight loss, about 72 (17.4%) became overweight of more than 25 Kg/m² and about 14 (3.4%) of study participants were developed obesity after the use of hormonal contraceptives. The previous Body Mass Index measurement which served as reference was taken from the patient's card and variation was seen by comparing BMI measured at the time of data collection. Majority of the study participants 297 (71.9%) had ideal or normal systolic blood pressure between 90 and 130 mmHg. However, about 89 (21.5%) of study participants had high systolic blood pressure of more than 130 mmHg. Similarly majority of the study participants about 315 (76.3%) had ideal or normal diastolic blood pressure between 60 and 90 mmHg. About 80 (19.4%) had high diastolic blood pressure of more than 90 mmHg. The increment in systolic and diastolic blood pressure was respectively seen in about 21.5% and 19.4% of women following hormonal contraceptives.

5.5. Factors Associated with Menstrual Related Disorders

Bivariate and multivariate analysis was done to assess the association between menstrual related disorder and independent variables. Binary logistic regression was performed to assess the association of independent variables with menstrual related disorder. Variables that have p value < 0.25 were found to be candidate for the next model, multivariate regression model. Applying bivariate analysis this study found that seven variables (cigarette smoking, alcohol intake, coffee intake, injectable and implant types of contraceptives, Body Mass Index, diastolic blood pressure) were candidate for multivariate analysis (Table 3). By applying multivariate analysis a total of six variables (cigarette smoking, alcohol intake, caffeine intake, injection and implant types of contraceptives, Body Mass Index) had p value < 0.05 and were significantly associated with menstrual related disorder.

5.5.1. Behavioral Factors

According to the finding of this study women who smoked cigarette were 4.4 times more significant to have menstrual related disorder as compared to those who didn't smoked cigarette (AOR= 4.448, 95% CI[1.278, 15.483]). The result of this study also showed that those who used alcohol were 3.5 times more significant to develop menstrual related disorder when compared to women not used alcohol (AOR= 3.599 , 95% CI [1.952, 6.635]). Women who used coffee usually were 2.4 times higher risk of having menstrual related disorder as compared to those not used coffee (AOR=2.419, 95% CI[1.206, 4.850]).

5.5.2. Clinical Factors

With respect to the types contraceptives women who used injection type of contraceptive were 3 times higher risk to develop menstrual related disorder as compared to those used oral contraceptive pills (AOR= 3.063, 95% CI[1.357, 6.822]). Women used implants types of contraceptives were 3.9 times higher chance of getting menstrual related disorders as compared to those used oral contraceptive pills (AOR= 3.930, 95% CI[1.802, 8.567]).

Regarding Body Mass Index overweight women were 2.5 times more significant to develop menstrual related disorders comparing with underweight women (AOR= 2.576 ,95% CI[1.086, 6.114]). Obese women were 5 times highly significant to have menstrual related disorders comparing with underweight women (AOR=5.061[1.030, 24.876]).

Table 3. Bivariate and multivariate analysis of menstrual related disorders among women following hormonal contraceptive at Bishoftu town selected public health institutions 2020 (n=413).

Variables	Category	Menstrual Related Disorder		P value	COR (95% CI)	AOR (95% CI)	P Value
		No	Yes				
Smoking Status	No	280	113		1		
	Yes	7	13	0.002	4.602[1.790, 11.833]	4.448[1.278, 15.483]	0.019**
Alcohol Intake	No	183	45		1		
	Yes	104	81	0.000	3.167[2.047, 4.902]	3.599[1.952, 6.635]	.000***
Coffee Intake	No	111	25		1		
	Yes	176	101	0.000	2.548[1.548, 4.193]	2.419[1.206, 4.850]	0.013**
Types of Contraceptives	Pills	108	22		1		
	Injection	90	54	0.000	2.945[1.667, 5.204]	3.063[1.357, 6.822]	0.006**
	Implants	89	50	0.001	2.758[1.553, 4.899]	3.930[1.802, 8.567]	0.001**
Body Mass Index	Underweight	45	35		1		
	Normal	224	25	0.062	0.137[0.075, 1.252]	0.102[0.048, 0.215]	0.120
	Overweight	17	55	0.002	3.975[1.967, 8.032]	2.576[1.086, 6.114]	0.032**
	Obese	3	11	0.021	4.505[1.165, 17.417]	5.061[1.030, 24.876]	0.046**
Diastolic Blood Pressure	Low	4	14		1		
	Ideal	244	71	0.034	0.083[0.027, 1.261]	0.091[0.022, 0.387]	0.103
	High	39	41	0.048	0.300[0.091, 0.992]	0.353[0.075, 1.653]	0.186

6. DISCUSSION

The current study found that the most common menstrual related problems among women using hormonal contraceptives were premenstrual syndrome, dysmenorrhea, menorrhagia and oligomenorrhea. This is in line with studies conducted in Gondar, Bahir Dar and Ambo Universities undergraduate female students (1,12,28).

The finding of this study showed that the overall prevalence of menstrual related disorders among women taking hormonal contraceptives in Bishoftu town selected public health institutions was about 30.5%. The finding of current study is lower than study done in Eastern Nigeria on menstrual related disorders among undergraduate students which show the prevalence of menstrual disorder to be 34% (10). The result of this study was slightly lower than the studies conducted in Turkey (22) and Brazil (23) which show the prevalence of common menstrual related problems was 31.2% and 33% respectively. But the finding of this study was higher than study conducted among Polish women which show about 17.7% had menstrual related problems. The difference in the magnitude of menstrual related disorders might be due to inclusion of different target population in the study. The current study included only women using hormonal contraceptives. The result of current study was higher than the result of similar study conducted in South Africa Hajji pilgrims which shows about 23% of women who used hormonal manipulation developed menstrual related problems (25). The difference in the result of this study and current study might be due to the different in the type of hormone they used and environmental change during Hajji travelling among South African women (6,25).

Regarding associated factors the finding of this study shows that overweight women were 2.5 times more significant to develop menstrual related disorders comparing with underweight women (AOR= 2.576,95% CI[1.086, 6.114]). Obese women were 5 times more significant to have menstrual related disorders comparing with underweight women (AOR=5.061[1.030, 24.876]) (**Table 3**). This is inconsistent with study conducted in Sweden which shows being underweight is significantly associated with menstrual related disorder (30). The variation of this result might be in overweight and obese women there is excess production of estrogen and causes estrogen imbalance which leads to the irregularity of menstrual cycle (38). Excess amount of estrogen due to presence of estrogen in hormonal contraceptives and in overweight women, results in disturbance of the normal menstrual cycle of women which leads to menstrual disorders (38).

The result of current study revealed that the types of hormonal contraceptives they used is significantly associated with menstrual related disorders. The result of this study was supported by study conducted in USA which stated that the use of hormonal contraceptives were significantly associated with menstrual related disorder (6,31). Women who used injection and implants type of contraceptive were 3 times more significant to develop menstrual related disorder as compared to those who used oral contraceptive pills (**Table 3**). Depo-Provera injection and implants works by preventing ovulation and thickening of cervical mucus to reduce sperm motility through the cervix (5). Women who used injection types of contraceptives had experienced oligomenorrhea, delayed menses and weight gain as compared to oral contraceptives pills (39,40). This may be due to effects of progesterone present in the injection which increases metabolism as well as appetite and this leads to weight gain (39). The other possible reason of oligomenorrhea among women used injection type of contraceptive as compared to OCP was due to progesterone effect which delay monthly menses and ovulation (40).

The current study found that women who smoked cigarette were 4.4 times more significant to have menstrual related disorder as compared to those who didn't smoked cigarette (**Table 3**). The current study agree with the study done at Ambo University among undergraduate students which reported that, students who currently smoking cigarettes were 2.2 times more likely to develop Menstrual Related Discomfort than those who did not smoked (1). The current study was also in line with study conducted in Turkey which indicated that, smoking is positively associated with menstrual related disorder particularly dysmenorrhea (22).The possible reason might be smoking reduces the length of follicular phase by decreasing the level of progesterone which increase the risk of menstrual related disorders (41,42).

The current study found that women who used alcohol were 3.5 times highly significant to develop menstrual related disorders when compared to women not used alcohol (**Table 3**). The finding of this study was supported by a review conducted on the relationship between alcohol consumption and menstrual cycle which stated that alcohol consumption can causes menstrual irregularity and menstrual related disorder (43).The reason why alcohol causes menstrual problem may be that alcohol consumption increases the level of reproductive hormones which causes hormone fluctuation and imbalances. As a result the duration, frequency and amount of menstrual flow become changed and leads to menstrual related problems (44).

With regard to coffee intake the current study revealed that women who had history of coffee intake were 2.4 times highly significant to have menstrual related disorder as compared to those not used coffee (**Table 3**). The finding of this study agree with the study done in Saudi Arabia which stated that women who used coffee were more likely to have greater menstrual related disorder (45). The result of this study was also supported by study conducted in Johns Hopkins University which revealed that caffeine consumption can alter menstrual function (46). The possible reason may be because of vasoconstriction effects of caffeine which causes constriction of uterine blood vessels. As a result uterine blood flow become decrease and reduce menstrual bleeding as well as its duration (41,45).

7. CONCLUSION

The finding of the current study concluded that, the magnitude of menstrual related disorders is high among women following hormonal contraceptives at Bishoftu town selected public health institutions. The most common menstrual related problem observed by women following hormonal contraceptives were menorrhagia, dysmenorrhea, oligomenorrhea, hypermenorrhea and premenstrual syndrome.

The current study concluded that injectable and implant types of contraceptives, being overweight and obese, cigarette smoking, alcohol and coffee intake were significantly associated with menstrual related disorders. Even though it is not given attention, menstrual related disorder is the common reproductive health problem and complain of women using hormonal contraceptives in the current study area.

8. STRENGTHS AND LIMITATIONS OF THE STUDY

8.1. Strengths of the study

- This study used the large sample size which taught to be representative of the study area.
- The data used in the study was primary data.
- Pretest was done on 20 women before the actual data collection.
- Data collection was completed in the given proposed time.

8.2. Limitations and challenges of the study

- There might be recall bias while subjects were requested to give information.
- Only Body Mass Index, Systolic Blood Pressure and Diastolic Blood Pressure were objectively measured.
- Associated factors like alcohol intake, smoking status and coffee intake were not measured objectively.
- The influence of other medications on menstrual pattern was not taken into consideration during this study.

9. RECOMMENDATIONS

Based on the findings of this study the following recommendations were given to all concerned bodies.

To Health administrators

- Better to give a great emphasis to menstrual related disorder and associated factors as major reproductive health problem of women.
- Develop strategies to screen and manage menstrual related disorders in all health care settings.
- It is advisable to give attention for the women's complain regarding menstrual related problem after the use of hormonal contraceptives.
- Better to encourage the women to use long term non hormonal contraceptives like IUCD and calendar method of contraceptives to reduce the magnitude of menstrual related disorders.
- Encourage women to do regular physical exercise, to avoid/reduce alcohol, cigarette and excessive coffee intake while using hormonal contraceptives.

To Researchers

- From the finding of this study the researchers are highly recommended to do further studies on this area.
- It will be good for the researchers to find mechanism by which menstrual related disorders will be managed.

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Annexes

Consent Form

Questionnaires Code number _____

Greeting: Good morning/afternoon! I am Mr. Kuma Kebede who is Master Degree student at Addis Ababa University.

Contact address: 0921918763 or kumakebe1000@gmail.com

Title of the Research Project: Magnitude of menstrual related disorders and associated factors among women following hormonal contraceptives in Bishoftu town central Ethiopia, 2022.

Name of the organization: Addis Ababa University College of health Science School of Medicine department of Medical Physiology.

Introduction: This information sheet is prepared to explain the study you are being asked to join. Please listen carefully and ask any questions about the study before you agree to join.

Purpose of Research Project: The purpose of this study is to determine magnitude of menstrual related disorders and associated factors among women following hormonal contraceptives in Bishoftu town central Ethiopia, 2022.

Risk/Discomfort: By participating in this research project, you may feel that it has some discomfort especially on wasting time about 15-20 minutes. We hope you will participate in the study for the sake of the benefit of the research result. There is no risk in participating in this research project.

Benefits: If you participate in this research project your participation is likely to help us in assessing magnitude of menstrual disorders and associated factors among women following hormonal contraceptives and this will help us for developing appropriate interventions. So, this study is one chance for you to speak out your problems and to find a solution for accordingly.

Confidentiality: The information collected from this research project will be kept confidential and information about you that will be collected by this study will be stored in a file, without your name, but a code number assigned to it and it will not be revealed to anyone except the principal investigator.

Right to refuse or withdraw: You have full right to refuse or withdraw participating in this research at any time you wish, without losing any of your right.

Consent of the Participant:

I the undersigned have been informed that the purpose of this research project. Based on the above information I agree to participate in the research voluntarily.

Signature of Participant

Date

Name of data collector

Signature

Date

Name of supervisor

Signature

Thank you for your kind cooperation!

English Version Questionnaires

No	Questions and filters	Coding category	Skip to	Code
Section I: Socio-demographic characteristics				
1	Age	_____		
2	Religion	1.Orhtodox 2.Muslim 3.Protestant 4.Wakefata_____		1 2 3 4
3	Ethnicity	1. Oromo 2. Amhara 3. Other(specify)_____		1 2 3
4	Marital Status?	1. Notmarried/ Single/Unmarried 2. Ever married 3. Divorced 4. Widowed		1 2 3 4
5	Education Status	1. Can't read and write 2. Read and Write 3. Primary education 4. Secondary education 5. Diploma and more		1 2 3 4 5
6	Occupation	1. Housewife 2. Merchant 3. Government employee 4. Private employee		1 2 3 4

Section II: Life style and behavioral information

7	Smoking status	1. Never smoked 2. Smoked daily 3. Smoked but not daily	1 2 3
8	Alcohol (Servings/week)	1. None 2. Less than two liters a week 3. Two or more liters per week	1 2 3
9	Coffee (Cups/ Day)	1. None 2. One to three cups per day 3. More than three cups per day	1 2 3
10	Sleep (Hours/ Day)	1. < 7 hours 2. 7 to 9 hours 3. More than 9 hours	1 2 3
11	Physical activity per week	1. None 2. less than 3 days per week 3. At least 3 days per week	1 2 3

Section III: Gynecologic and obstetric related Questions

12	Age at Menarche?	1. <13 years 2. 13-16 years 3. >16 years		1 2 3
13	Parity/ number of children	1.None 2.One 3.Two 4.Three 5.Four or more		1 2 3 4 5
14	Period interval?	1.<21 days 2.21-35 days 3. >35 days		1 2 3
15	Duration of bleeding per period?	1.<3 days 2.3-7 days 3.>7 days		1 2 3
16	How many sanitary pad or towel did you use during menstruation period?	1.<2 2.3-5 3.>5		1 2 3
17	Do you have abdominal pain, back pain or thigh pain before and during menstruation in the last 3 months?	1. Yes 2. No	If no skip to question number 19	1 2
18	Duration of each pain episode?	1. Less than one hour 2. One hour to 2 hours 3. Pain all the time		1 2 3

No	Questions and filters	Coding category	Skip to	Code
19	Family history of Menstrual pain?	1. Yes (Both Mom and/or Sister) 2. No 3. Don't know		1 2 3
20	Do you have bleeding between periods?	1. Yes 2. No		1 2
21	Using Contraception?	1. Yes 2. No	If no skip to Question 26	
22	If yes, (you can circle more than one)	1. Pills 2. Injectable 3. Implants		1 2 3
23	Have you pain after using contraceptive?	1. Yes 2. No	If no skip to Question 26	1 2
24	Using medication for menstrual pain	1. Yes 2. No	If no skip to Question 26	
25	If yes, (you can circle more than one)	1. Pain relievers 2. Hormones 3. Topical patches 4. Traditional Methods 5. Surgery		1 2 3 4 5
26	Do you feel any discomfort before or during menstruation after using contraceptive?	1. Yes 2. No		1 2

Section IV: Recording of physiological variables

S.N	Physiological Parameters	Value/grade
1	BMI_____ in kg/m ²	1. < 18.5 2. 18.5-24.9 3. 25-29.9 4. ≥ 30
2	Systolic Blood pressure (mmhg)	1. Less than 90 2. 90-130 3. Greater than 130
3	Diastolic Blood Pressure (mmhg)	1. Less than 60 2. 60-90 3. Greater than 90
4	Pain before, during and after menstruation.	1. Yes 2. No
5	Pain level(using pain scale)	1. Mild 2. Moderate 3. Severe

Afan Oromo Version of the Questionnaires

Unkaa eeyyama hirmaattota kanaa ibsuuf qophaa’e.

Lakkoofsa iccitii gaafatamaa_____

Akkam bultan yk ooltan? Maqaan koo Obbo Kumaa Kabbadaa Yuunivarsiitii Finfinneetti barataa digirii lammaffaati.

Lakkoofsa bilbila: 0921918763

Mata duree qorannichaa:

Dubartoota magaalaa Bishooftuu mala ittisa da’uumsaa hormoonii of keessaa qabu fayyadaman irratti hammamtaa fi sababoota rakkoolee marsaa laguun wal qabatan.

Maqaa dhaabbatichaa: Yuunivarsiitii Finfinnee kolleejjii saayinsii fayyaa mana barnoota Meedikaalaatti muumme barnoota Fiiziyoolojii

Seensa: Fuulli odeeffannoo kun qorannoo isin keessatti hirmaachuuf deemtan ibsuuf kan qophaa’edha.

Kaayyoo pirojeektichaa: Kaayyoon pirojeectii kanaa dubartoota magaalaa Bishooftuu mala ittisa da’uumsaa hormoonii of keessaa qaban fayyadaman irratti hammamtaa fi sababoota rakkoolee marsaa laguun wal qabatan qorachuudhaafi.

Isinitti mijachuu dhabuu: Yeroo qorannoo kana keessatti hirmaattan tarii haalonni tokko tokko isiniif mijachuu dhiisuu danda’u keessa iyyuu yeroo keessan fudhachuu ilaalchisee. Haa ta’u malee kaayyoo fi bu’aa qorannoo kanaaf jecha guutummaatti akka hirmaattan abdiin qaba. Qorannoo kana keessatti hirmaachuu keessaniif wanti isin irra gahu tokkollee hin jiru.

Bu’aa isin argattan: Hirmaannaan keessan dubartoota magaalaa Bishooftuu mala ittisa da’uumsaa hormoonii of keessaa qaban fayyadaman irratti hammamtaa fi sababoota rakkoolee marsaa laguun wal qabatan qorachuu fi furmaata fiduudhaaf fayyada.

Kanaaf carraan kun rakkoo keessan dubbaachuu fi furmaata isiniif fiduudhaaf ni fayyada jedheen yaada.

Iccitii eeguu: Odeeffannoon isin irraa funaanamu kamiyyuu iccitiidhaan qabama. Iccitiin keessan qaama kamiifuu dabarfamee hin kennamu.

Mirga diduu ykn adda kutuu: Qorannoo kana keessatti hirmaachuu dhiisuuf mirga qabdu ykn immoo yeroo barbaaddanitti adda kutuu ni dandeessu.

Mallattoo Hirmaataa

Ani kaayyoo qorannichaa sirriitti hubadheera. Odeeffannoo naaf kenname irratti hundaa’uun fedha kootiin qorannoo kana keessatti hirmaachuuf mallattoo kootiin nan mirkaneessa.

Mallattoo hirmaataa _____

Maqaa nama odeeffannoo funaanuu _____

Mallattoo _____

Maqaa to’ataa _____ Mallattoo _____

Odeeffannoo nuuf kennitaniif galatoomaa!

Kutaa 1ffaa

Gaaffilee dhimmoota hawaasummaa

Lakk.	Gaaffilee	Filannoo	Irra utaali	Deebii
1	Umrii	----- -		
2	Amantii	1.Ortodoksii 2.Musliima 3. Protestaantii 4. Waaqeffataa 5. Kan biraa (adda baasi)		1 2 3 4 5
3	Saba	1. Oromoo 2. Amaaraa 3. Tigree 4. Kan biraa (adda baasi)		1 2 3 4
4	Haala fuudhaaf heerumaa	1. Hin heerumne 2. Heerume 3. Wal hiikne 4. Narraa boqote		1 2 3 4
5	Sadarkaa barnoota haadhaa	1.Barreessuuf dubbisuu hin dandeessu 2.Barreessuuf dubbisuu 3. Sadarkaa 1ffaa 4. Sadarkaa lammaffaa 5. Diplooma fi isaa ol		1 2 3 4 5
6	Hojii haadhaa	1. Haadha manaa 2. Hojjattuu mootummaa 3. Daldaltuu 4. Hojii dhuunfaa		1 2 3 4

Kutaa 2ffaa

Gaaffilee haala jireenyaatiin wal qabatan

Lakk.	Gaaffilee	Filannoo	Irra Utaali	Deebii
7	Sigaaraa ykn tamboo ni aarsitaa?	<ol style="list-style-type: none"> 1. Hin aarsu 2. Guyyaa guyyaadhaan 3. Nan aarsa garuu guyyaa hunda miti 		<ol style="list-style-type: none"> 1 2 3
8	Alkoolii ni fayyadamtaa? Yoo fayyadamte torbanitti hagam?	<ol style="list-style-type: none"> 1. Lakki 2. Litira 1 gadi 3. Litira 1 fi isaa ol 		<ol style="list-style-type: none"> 1 2 3
9	Buna ni dhugdaa? Yoo dhugde guyyaatti siinii hagam?	<ol style="list-style-type: none"> 1. Lakki 2. Tokkoo haga sadii 3. Sadii oli 		<ol style="list-style-type: none"> 1 2 3
10	Guyyaatti sa'aatii meeqaaf rafta?	<ol style="list-style-type: none"> 1. Sa'aatii 7 gadi 2. Sa'aatii 7 haga 9 3. Sa'aatii 9 oli 		<ol style="list-style-type: none"> 1 2 3
11	Torbanitti sochii qaama hammamiif goota?	<ol style="list-style-type: none"> 1. Homaa 2. Yeroo sadii gadi 3. Yeroo sadii fi isaa oliif 		<ol style="list-style-type: none"> 1 2 3

Kutaa 3ffaa

Gaaffilee sirna fayyaa wal hormaataatiin wal qabatan

Lakk	Gaaffilee	Filannoo	Irra utaali	Deebii
12	Umrii meeqatti laguun argite?	1. 13 gadi 2. 13-16 3. >16		1 2 3
13	Ijoollee meeqa qabda?	1. Homaa 2. Tokko 3. Lama 4. Sadi 5. Afurii fi isaa ol		1 2 3 4
14	Giddu galeessaan ji'atti guyyaa laguun kee itti dhufu	1. 21 gadi 2. 12-35 3. 35 oli		1 2 3
15	Laguun ykn xuriin kee guyyaa meeqaaf sirra tura?	1. 3 gadi 2. 3-7 3. 7 oli		1 2 3
16	Yeroo laguun sirra jiru giddu galeessaan qulqulleessituu ykn modasii meeqa ni fayyadamta?	1. 2 gadi 2. 3-5 3. 5 oli		1 2 3
17	Ji'oota sadan darban keessatti yeroo laguun sitti dhufuuf jedhu ykn sirra jirutti dhukkubbiin garaa, dugdaa fi kan biroo sitti dhaga'amee beekaa?	1. Eeyyen 2. Lakki	Yoo lakki jette gaaffii lakk 19tti ce'i	1 2
18	Dhukkubbiin yoo jiraate hammamiif sirra tura?	1. Sa'aatii 1 gadi 2. Sa'aatii 1-2 3. Yeroo hunda na dhukkuba		1 2 3

Lakk .	Gaaffilee	Filannoo	Irra utaali	Deebi
19	Maatii keessaa namni dhukkubbii yeroo marsaa lagu qabu jiraa?	<ol style="list-style-type: none"> 1. Eeyyen (haadha fi obboleettii) 2. Eeyyen (haadha ykn obboleettii) 3. Lakki 4. Hin beeku 		<ol style="list-style-type: none"> 1 2 3 4
20	Marsuu lagu jidduutti dhiigni bahu jiraa?	<ol style="list-style-type: none"> 1. Eeyyen 2. Lakki 		<ol style="list-style-type: none"> 1 2
21	Mala ittisa da'uumsaa ni fayyadamtaa?	<ol style="list-style-type: none"> 1. Eeyyen 2. Lakki 	Yoo lakki jette gaaffii lakkoofsa 26tti ce'i	
22	Yoo eeyyen jette tokko filadhu	<ol style="list-style-type: none"> 1. Kan afaaniin liqimsamu 2. Lilmoo 3. Kan irree jala awwaalamu 4. Kan gadameessa keessa awwaalamu 		<ol style="list-style-type: none"> 1 2 3 4
23	Yeroo mala ittisa da'uumsaa fayyadamtu dhukkubbiin sitti dhaga'amee beekaa?	<ol style="list-style-type: none"> 1. Eeyyen 2. Lakki 	Yoo lakki jette gaaffii lakkoofsa 26tti ce'i	<ol style="list-style-type: none"> 1 2
24	Dhukkubbii keetiif qoricha fayyadamtee beektaa?	<ol style="list-style-type: none"> 1. Eeyyen 2. Lakki 	Yoo lakki jette gaaffii lakkoofsa 27tti ce'i	
25	Yoo eeyyen jette tokko filadhu	<ol style="list-style-type: none"> 1. Farra dhukkubbii 2. Hormoonii 3. Mala aadaa 4. Yaala baqaqsanii 		<ol style="list-style-type: none"> 1 2 3 4
26	Laguu, duraa fi booda dhukkubbiin sitti dhaga'amaa?	<ol style="list-style-type: none"> 1. Eeyyen 2. Lakki 		<ol style="list-style-type: none"> 1 2

Kutaa 4ffaa: Safartuuwwan fiiziyoolojii galmeesuu		
Lakk.	Safartuuwwan fiiziyoolojii	Hammamtaa/baay'ina
1	Indeeksii ulfaatina qaamaa (BMI)	1. < 18.5 2. 18.5-24.9 3. 25-29.9 4. ≥ 30
2	Dhiibbaa dhiigaa siistoolikii(systolic in mmhg)	1. 90 gadi 2. 90-130 3. 130 oli
3	Dhiibbaa dhiigaa diyaastoolikii (diastolic in mmhg)	1. 60 gadi 2. 60-90 3. 90 oli
4	Dhukkubbii laguun duraa, yeroo lagu fi laguun booda	1. Eeyyen 2. Lakki
5	Hammamtaa dhukkubbii (pain scale fayyadamuun)	1. Xiqqoo 2. Giddu galeessa 3. Baay'ee

Amharic Version of the questionnaires

የጥናቱ ተሳታፊዎች የመረጃ ቅጽ

ስሜ ኩሙ ከበደ ይባላል። በአደድስ አበባ ዩኒቨርሲቲ የህክምና ፋኩልቲ ፊዚዮሎጂ ትምህርት ክፍል የድህረ ምረቃ ተማሪ ሲሆን የመመረቂያ ፅሁፊን የወሊድ መከላከያ መድሃኒት የሚወስዱ እናቶች ላይ የወር አበባ ችግር እና ተያያዥ ነገሮች ላይ ለመስራት ወስኛለሁ። እርስዎም በዚህ ጥናት ላይ በመሳተፍዎ የበኩልዎን አስተዋፅኦ እንድያበረክቱ ተጋብዝዋል። ዉድ የጥናቱ ተሳታፊዎች በጥናቱ ያልዎትን ተሳትፎ ለመወሰን የሚከተሉትን ማብራሪያ ይመለልኩ።

የጥናቱ ዓላማ፡

የዚህ ጥናት ዓላማ የወሊድ መከላከያ ዘዴዎችን የሚጠቀሙ እናቶች ላይ የወር አበባ ችግር መጠን እና ተያያዥ ጉዳዮችን ለመለየት ነው።

ሊደርስ የሚችል አደጋ፡ በዚህ ጥናት በመሳተፍዎ ሊደርስ የሚችል አደጋ የለም።

ከጥናቱ የሚገኝ ጥቅም፡ በዚህ ጥናት ተሳታፊ በመሆን የትግሩን መጠን እና ተያያዥ ጉዳዮችን ለመለየት ይረደናል። ይህ ጥናት ከወር አበባ ጋር ተያይዞ የሚመጡ ችግሮችን የሚታወቁበት አጋጣሚ ነው።

ሚስጥራዊነት፡ የማንኛውም የጥናቱ ተሳታፊ መረጃ በሚስጥር ይያዛል።

ፍቃደኝነት፡ እርስዎ በጥናቱ ለመሳተፍ ፍቃደኛ ያለመሆን፣ ማንኛውንም መረጃ እና ናሙና የለመስጠት እንድሁም ጥናቱም በማንኛውም ጊዜ የማቆረጥ መብትም የተጠበቀ ነው።

ጥናቱን በተመለከተ ማንኛውንም ጥያቄ ካልዎት በሚቀጥለው ስልክ ቁጥር መጠየቅ ይቻላል።

ኩማ ከበደ

0921918763

አድስ አበባ

የጥናቱ ተሳታፊዎች የስምምነት ቅጽ

የጥናቱ ተሳታፊ መለያ ቁጥር-----

ጥናቱን በተመለከተ በቂ ማብራሪያ ተደርጎልኛል። የጥናቱን ዓላማ በሚገባ የተረዳሁ ሲሆን በጤንነት ላይ ምንም አይነት ጉዳት እንደማያደርስ እና ሚስጥር እንደሚጠበቁ ስለተገነዘብኩ በጥናቱ ለመሳተፍ መወሰኔን በፈርማዬ አረጋግጣለሁ።

የጥናቱ ተሳታፊ ፊርማ-----

ቀን -----

የመረጃ ሰብሳቢው ስም-----

ፊርማ-----

ቀን-----

ክፍል አንድ : የመሀበራዊ ጉዳዮች ጥያቄዎች

ተ.ቁ	ጥያቄዎች	ምርጫዎች	ወደ...ዝለል	ከድ
1	ዕድሜ			
2	ሀይማኖት	1.አርቶዶክስ 2. ሙስሊም 3. ፕሮቴስታንት 4. ዋቅፈታ		1 2 3 4
3	ብሄር	1.አሮሞ 2.አማረ 3. ሌላ (ግለጽ)_____		1 2 3
4	የጋብቻ ሆኔታ	1. ያለገባ 2. ያገባ 3. የተፋታች 4. የሞተባት		1 2 3 4
5	የትምህርት ደረጃ	1. ማንበብ እና መጻፍ የማትችል 2. ማንበብ እና መጻፍ የሚችል 3. አንደኛ ደረጃ 4. ሁለተኛ ደረጃ 5. ድፕሎማ እና ከዛ በላይ		1 2 3 4 5
6	ስራ	1. የቤት እመቤት 2. ነጋዴ 3. የመንግስት ሰራተኛ 4. የግል ተቀጣሪ		1 2 3 4

ክፍል ሁለት: የኑሮ ሁኔታ እና የግል ባህሪ መረጃ

7	ስጋራ ያጨሳሉ	<ol style="list-style-type: none"> 1. አላጭስም 2. በየቀን 3. አንድ አንዴ 		<ol style="list-style-type: none"> 1 2 3
8	በሳምንት ምን ያህል አልኮል ይጠጣሉ?	<ol style="list-style-type: none"> 1. በጭራሽ አልጠጣም 2. ከሁለት ሊትር በታች 3. ቢያንስ ሁለት ሊትር 		<ol style="list-style-type: none"> 1 2 3
9	በቀን ምን ያህል ቡና ይጠጣሉ?	<ol style="list-style-type: none"> 1. ምንም አልጠጣም 2. ከአንድ እስከ ሶስት ሲኒ 3. ከሶስት ሲኒ በላይ 		<ol style="list-style-type: none"> 1 2 3
10	በቀን ውስጥ ምን ያህል ሰዓት ይተዩኛሉ?	<ol style="list-style-type: none"> 1. ከሰባት ሰዓት በታች 2. ከ 7 እስከ 9 ሰዓት 3. ከ 9 ሰዓት በላይ 		<ol style="list-style-type: none"> 1 2 3
11	በሳምንት ውስጥ የአካል ብቃት እንቅስቃሴ ያረጋሉ? ምን ያህል?	<ol style="list-style-type: none"> 1. አላረግም 2. ከሶስት ግዜ በታች 3. ቢያንስ ሶስት ግዜ 		<ol style="list-style-type: none"> 1 2 3

ክፍል ሶስት: ከስነ ተዋልዶ ጋር የተያያዙ ጥያቄዎች

12	የመጀመሪያ የወር አበባ ስንት ዓመት ስንት ነው ያየሱ?	<ol style="list-style-type: none"> 1. ከ 13 ዓመት በታች 2. ከ 13-16 ዓመት 3. ከ 16 ዓመት በላይ 		<ol style="list-style-type: none"> 1 2 3
13	ስንት ልጆች አሉህ?	<ol style="list-style-type: none"> 1. የለኝም 2. አንድ 3. ሁለት 4. ሶስት 5. አረት እና ከዛ በላይ 		<ol style="list-style-type: none"> 1 2 3 4 5
14	የወር አበባ ምን ያህል ጊዜ ውስጥ ይመጣል?	<ol style="list-style-type: none"> 1. ከ 21 ቀን በታች 2. ከ 21-35 ቀን 3. ከ 35 ቀን በላይ 		<ol style="list-style-type: none"> 1 2 3
15	የወር አበባ ለምን ያህል ጊዜ ነው የሚቆይ?	<ol style="list-style-type: none"> 1. ከ 3 ቀን በታች 2. ከ 3-7 ቀን 3. ከ 7 ቀን በላይ 		<ol style="list-style-type: none"> 1 2 3
16	በወር አበባ ጊዜ ምን ያህል ሞደስ ነው የሚትጠቀሙ?	<ol style="list-style-type: none"> 1. ከ 2 በታች 2. ከ 3-5 3. ከ 5 በላይ 		<ol style="list-style-type: none"> 1 2 3
17	የወር አበባ ስመጣ የሆድ፣ የጀርባ እና ሌሎች ህመሞች ተሰምቶት ያቃሉ?	<ol style="list-style-type: none"> 1. አዎ 2. አይደለም 	የለም ከአልሽ ወደ 19ኛ ጥያቄ	<ol style="list-style-type: none"> 1 2
18	ህመሙ ለምን ያህል ጊዜ ነው የሚቆይ?	<ol style="list-style-type: none"> 1. ከ 1 ሰዓት በታች 2. ከ 1 እስከ 2 ሰዓት 3. ሁል ጊዜ ያጣል 		<ol style="list-style-type: none"> 1 2 3

19	ከ እናንተ ቤተሰብ ውስጥ በወር አበባ ግዜ ህመም ያለው ሰው አለ?	1. አዎ 2. የለም 3. አለውቅም		1 2 3
20	ከወር አበባ ውጪ የሚፈስ ደም አለ?	1. አዎ 2. የለም		1 2
21	የወሊድ መከላከያ ዘዴ ትጠቀሟልህ?	1.አዎ 2. አልጠቀምም	አይደለም ከልሽ ወደ ጥያቄ ቁጥር 26	
22	የሚትጠቀሟል ከሆነ የትኛ የወሊድ መከላከያ ዘዴ ነው የሚትጠቀሟል?	1. በአፍ የሚዋጥ ኪኒን 2. መርፌ 3. የክንድ ቆዳ ስር የሚቀበር		1 2 3
23	ከ ተጠቀምሽ በሃላ ህመም ተሰምቶሽ ያቃል?	1. አዎ 2. አይደለም	አይደለም ከልሽ ወደ ጥያቄ ቁጥር 26	1 2
24	ለህመሙ መድሃኒት ተጠቅመሽ ታቅዋለሽ?	1. አዎ 2. አይደለም	አይደለም ከልሽ ወደ ጥያቄ ቁጥር 26	
25	አዎ ከልሽ የትኛውን ነው የተጠቀምሽ?	1. የህመም ማስታገሻ 2. ባህላዊ መዳኒት 3. የቀዶ ህክምና		1 2 3
26	ከወር አበባ በፊት እና በሃላ ጥሩ ያልሆነ ስሜት ተሰምቶሽ ያቃል?	1. አዎ 2. አይደለም		1 2

ክፍል አረት: የፊደሎች ሊኬቶች		
ተ.ቁ	የፊደሎች ሊኬቶች	መጠን/ደረጃ
1	የሰውነት ክብደት እንዲከስ (BMI) በ kg/m ²	5. ከ 18.5 በታች 6. ከ 18.5-24.9 7. ከ 25-29.9 8. 30 እና ከዛ በላይ
2	ስስቶሊክ የደም ግፊት (Systolic Blood pressure በ mmhg)	4. ከ 90 በታች 5. ከ 90-130 6. ከ 130 በላይ
3	ዲያስቶሊክ የደም ግፊት (Diastolic Blood Pressure በ mmhg)	4. ከ 60 በታች 5. ከ 60-90 6. ከ 90 በላይ
4	ከ ወር አበባ በፊት እና በሃላ ህመም አለ?	3. አዎ 4. የለም
5	የህመሙ ደረጃ	4. ዝቅተኛ 5. መካከለኛ 6. ከባድ