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Abnormal Uterine Bleeding and Associated Factors Among Reproductive Age Women Visiting Gynecologic Opd Attertiary Hospitals, Bahir Dar, North- West Ethiopia

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BAHIR DAR UNIVERSITY

**COLLEGE OF MEDICINE AND HEALTH
SCIENCES**

**DEPARTMENT OF OBSTETRICS AND
GYNECOLOGY**

**ABNORMAL UTERINE BLEEDING AND
ASSOCIATED FACTORS AMONG REPRODUCTIVE
AGE WOMEN VISITING GYNECOLOGIC OPD
ATTERTIARY HOSPITALS,BAHIR DAR, NORTH-
WEST ETHIOPIA**

BY

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**A THESIS PROPOSAL SUBMITTED TO DEPARTMENT OF OBSTETRICS
AND GYNECOLOGY, COLLEGE OF MEDICINE AND HEALTH SCIENCES,
SCHOOL OF MEDICINE, BAHIR DAR UNIVERSITY IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR SPECIALITY
CERTIFICATE IN OBSTETRICS AND GYNECOLOGY: CROSS-
SECTIONAL STUDY**

AUGUST, 2023

BAHIR DAR, ETHIOPIA

BAHIR DAR UNIVERSITY
COLLEGE OF MEDICINE AND HEALTH SCIENCES
DEPARTMENT OF OBSTETRICS AND GYNECOLOGY
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FACTORS AMONG REPRODUCTIVE AGE WOMEN
VISITING GYNECOLOGIC OPD AT TERTIARY
HOSPITALS, BAHIR DAR, NORTH-WEST ETHIOPIA

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IN OBSTETRICS AND GYNECOLOGY: CROSS-SECTIONAL STUDY

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Declaration

This is to certify that the thesis entitled abnormal uterine bleeding and associated factors among reproductive age women visiting gynecologic OPD at tertiary hospitals, Bahir Dar, North-West Ethiopia: cross-sectional study , submitted in partial fulfillment of the requirements for specialty certificate in gynecology and obstetrics Bahir Dar University, is a record of original work carried out by me and has never been submitted to this or any other institution to get any other degree or certificates. The assistance and help I received during the course of this investigation have been duly acknowledged.

Name of the candidateDatePlace

Approval of Thesis for Defense

I hereby certify that I have supervised, read, and evaluated this thesis titled "abnormal uterine bleeding and associated factors among reproductive age women visiting gynecologic OPD at tertiary hospitals, Bahir Dar, North-West Ethiopia: cross-sectional study" by Dr. Daniel Yizengaw Yideg prepared under my guidance. I recommend the thesis be submitted for oral defense (mock-viva and viva voce).

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Approval of Thesis Defense Result

As members of the board of examiners, we examined this thesis entitled, abnormal uterine bleeding and associated factors among reproductive age women visiting gynecologic OPD at tertiary hospitals, Bahir Dar, North-West Ethiopia: cross-sectional study, by Daniel Yizengaw (MD, OB/GYN resident). We hereby certify that the thesis is accepted for fulfilling the requirements for the speciality certificate in obstetrics and gynecology.

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Signature-----date-----/-----/-----

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ABSTRACT

Introduction: Abnormal uterine bleeding (AUB) is one of the most common gynecologic complaints among reproductive-age women which is one third of outpatient visits to the gynecologist are for AUB. Abnormal uterine bleeding is one of common causes of anemia in women. AUB is the presenting symptom for the majority of women who undergo a hysterectomy which represents the most common gynecological procedure in the world, has substantial surgery related complications. The objective of this study is to assess the magnitude of AUB and its related factors among reproductive age woman.

Methods: An institutional based cross-sectional study was conducted. Among 502 women who visit gynecologic OPD at two tertiary hospitals in Bahir Dar from March 1, to June 30, 2023. Study subjects were selected using systematic random sampling technique. Data was collected using interviewer administered pretested well structured questionnaire. The collected data were coded and analyzed using Statistical Package for the Social Sciences version 25 (SPSS, 25). Bivariable and multivariable logistic regressions were fitted to assess the association between independent and the dependent variables. P-value less than 0.05 at 95 % CI was used to declare statistical significance association. The result was presented using texts tables.

Result: The magnitude of abnormal uterine bleeding was 33.3% (29.3-37.7, 95% CI). Having history of abortion (AOR= 3.95, 95% CI), woman currently use hormonal contraceptives (AOR=3.82, 95% CI), those mothers having currently treatment for STI (AOR=2.52, 95% CI), and alcohol consumption (AOR=4.01, 95% CI) had a statistical positive association with abnormal uterine bleeding.

Conclusion: Prevalence of abnormal uterine bleeding is high. History of abortion, use of hormonal contraception, current treatment for STI, and alcohol intake were predictors for AUB.

Recommendation: Health care providers in the tertiary hospitals should be vigilant in diagnosing AUB and importantly its possible causes and create awareness for patients to decrease risks of STI and prompt treatment for those having it. Public health personnel's should create awareness in the community about AUB and its potential causes, on prevention of STI has multiple health benefits

Key words: Abnormal uterine bleeding, tertiary hospitals, FelegeHiwot Hospital, TibebeGhion Hospital, cross-sectional study .

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LIST OF ABBREVIATIONS AND ACRONYMS

AUB Abnormal Uterine Bleeding

BDU Bahir Dar university

COEIN Coagulopathy Ovulatory Endometrial Iatrogenic Not yet classified

FHCSH FelegeHiwot Comprehensive Specialized Hospital

FIGO International Federation of Gynecology and Obstetrics

OPD Out Patient Department

PALM Polyp Adenomyosis Leiomyoma Malignancy

STI Sexually Transmitted Infections

TGCSH TibebeGion Comprehensive Specialized Hospital

1. INTRODUCTION

1.1 Background

Women normally menstruate every 28 ± 7 days. The average duration is 5 days, and menstrual blood loss volume does not normally exceed 80 ml. Variations in any of these norms constitute abnormal uterine bleeding (AUB)(1).

The term “abnormal uterine bleeding” primarily describes bleeding in non-pregnant people in their reproductive years. Bleeding after menopause or before menarche is never normal. Blood may be red, pink, brown or even rust-like in appearance(2).

Abnormal uterine bleeding (AUB) may be acute or chronic and is defined as bleeding from the uterine corpus that is abnormal in regularity, volume, frequency, or duration and occurs in the absence of pregnancy(2). Acute AUB refers to an episode of heavy bleeding that, in the opinion of the clinician, is of sufficient quantity to require immediate intervention to prevent further blood loss(3). It is a common gynecological problem for medical visits among women of reproductive age group that have a long list of causes in different age groups(4).

Based on International Federation of Gynecology and Obstetrics (FIGO), refined definition of regularity is as normal variation (shortest to longest) to be 7-9 days. Duration classified as normal if ≤ 8 d and prolonged if > 8 d. Heavy menstrual bleeding defined as bleeding volume sufficient to interfere with the woman’s quality of life. Intermenstrual bleeding is spontaneous bleeding occurring between menstrual periods which can be either cyclical, or random. With FIGO AUB system 2 of classification of underlying causes of AUB (PALM-COEIN), there are 9 main categories which are arranged according to the acronym PALM-COEIN: **P**olyp; **A**denomyosis; **L**eiomyoma; **M**alignancy and **H**yperplasia; **C**oagulopathy; **O**vulatory dysfunction; **E**ndometrial; **I**atrogenic; and **N**ot yet classified. In general, the components of the PALM group are discrete (structural) entities that can be measured visually with imaging techniques and/or histopathology, whereas the COEIN group is related to entities that are not defined by imaging or histopathology (non-structural)(5).

For persistent intermenstrual bleeding (i.e. occurring for at least 3 consecutive months) in women over 40 years of age, endometrial cancer is suspected. AUB is main presenting symptom is 3.6 cases per 1,000 women with hematologic cancer. (6).

1.2 Statement of the problem

One third of outpatient visits to the gynecologist are for AUB(2, 7). The worldwide impact of abnormal uterine bleeding (AUB) in the reproductive years is substantial, with a prevalence of approximately 3%–30% among reproductive aged women (5).

Abnormal uterine bleeding is one of common causes of anemia in women: there is evidence that 25% perhaps more of women with the symptom of heavy menstrual bleeding have iron deficiency anemia. Every day, women with anemia experience adverse effects on their quality of life—fatigue and diminished exercise capacity, less able to tolerate peripartum hemorrhage and risk delivering babies with impaired neurological development if pregnant(8).

AUB is the presenting symptom for the majority of women who undergo a hysterectomy. The definitive treatment for woman with AUB is hysterectomy, which represents the most common gynecological procedure in the world, has substantial surgery related complications(9, 10).

Abnormal uterine bleeding is a common clinical presentation in women with gynecological cancers, at all age groups and each case needs to be evaluated individually and with meticulous attention to the differential diagnosis, especially those with inter-menstrual bleeding has higher risk than those women with heavy menstrual bleeding has increased risk of endometrial cancer. Failure to find a cause should prompt further investigation rather than ‘false’ reassurance of the patients(11, 12).

Along with the direct impact on the woman and her family, there are significant costs to both economy and health service and united states study reported financial losses of >\$2000 per patient per annum due to work absence and home management costs. The conservatively estimated annual direct and indirect economic costs of AUB were approximately \$1 billion and \$12 billion, respectively(13, 14).

Especially in developing world, AUB has an impact on the health of women in the negative way: It can limit daily activities of women and prevent the women not to go away from the house: it affects maternal quality of life, socially and physically: impacts women’s health-related quality of life (HRQoL) and puts a heavy economic burden on society. The HRQoL scores from the 36-item Short-Form Health Survey Questionnaire (SF-36) suggested that women with AUB have HRQoL below the 25th percentile of that for the general female population within a similar age range(8, 14).

Abnormal uterine bleeding is a major complaint of patients visiting gynecologic OPDs in TGCSH and FHCSH and the magnitude seems large as being a referral centers, there are no studies regarding to magnitude of AUB and its factors done in my study area. The burden of AUB and factors that affect its occurrence was studied in this thesis.

1.3 Significance of the study

The thesis will be used at national level; as an input to know the burden of the disease, to further work on causes of AUB so that policy makers will focus more on the preventive, screening measures to decrease the possible complications of AUB; to work on modifiable risk factors.

As a teaching hospital Bahir Dar University College of medicine and health science department of obstetrics and gynecology can use the result of the study as scientific evidence with more specific and local data and prompt preventive measures can be taken, possible man power and materials for the prevention can be recruited, and better patient care will be provided. This thesis will provide baseline information for further study on this topic.

Even though abnormal uterine bleeding is a common gynecologic visit and also some causes of AUB need surgical intervention, as to my best knowledge, there are no studies regarding to proportion of AUB and its factors done in my study area.

2. REVIEW OF LITERATURE

2.1 Prevalence of abnormal uterine bleeding

From a Population-based study done in Iran, according to FIGO terminology of AUB, a total of 35.8% (n=1393) of the participants suffered from at least one type of AUB. About 10.6% of the women had disturbances of regularity and 23.8% of them reported experiencing disturbances in frequency. Also, disturbances of heaviness of flow and duration of flow were reported by 16% and 11.5%, respectively (7).

From observational study done in India, prevalence of AUB was found to be 20.48% (n=13626)(15). A Descriptive Cross-sectional Study in India, among women visiting the gynecology outpatient department, the prevalence of abnormal uterine bleeding was 8.9%(n=2680)(16).

AUB among reproductive age women in Jimma town, Oromia region, Southwest Ethiopia showed 34.1% (n=660)of surveyed women had reported a history of AUB(4).

2.2 Factors associated with AUB

2.2.1 Sociodemographic factors

Study done in Iran, the proportions of women with AUB rose in the early and late reproductive years. While irregular menstrual bleeding was the most prevalent AUB among adolescent aged participants (≤ 20 yrs, 18.5%). Heavy menstrual bleeding was common in the premenopausal group (> 40 y), which is 15.6%. Age (adjusted OR = 1.08) was associated with AUB (7).

From study on Abnormal uterine bleeding; its prevalence, causes and management in a tertiary care hospital in India, highest incidence is found in age groups of 41-45 years of age which is 46% followed by 46-50 years (26%), then 36-40 years (18%) and 26-35 years (9%) (15).

An observational study on abnormal uterine bleeding in peri-menopausal age, 65.55% of cases were in the age group of 40 to 45 years followed by 27.77% of cases in 46 to 50 years (17).

BMI (AOR = 1.05, 95) is associated with AUB (7). FIGO's PALM-COEIN Classification of Abnormal Uterine Bleeding done in India, in total, 9.3 % women were obese (18).

2.2.2 Medical disorders

From study on Abnormal uterine bleeding; its prevalence, causes and management in a tertiary care hospital , Medical disorders were hypothyroidism, diabetes mellitus, hypertension(15). FIGO's PALM–COEIN Classification of Abnormal Uterine Bleeding done in India , 6.3 % were hypertensive, 3.8 % had thyroid abnormalities, and 1.6 % had diabetes mellitus(18).

Study on the diagnosis and treatment of abnormal uterine bleeding in nonpregnant patients with hepatic cirrhosis, Approximately 42.5% and 68.8% of the AUB patients were diagnosed with compensated and decompensated liver cirrhosis, respectively(19).

Study done on menstrual disorders in chronic kidney disease: causes and management, 2020, in women with chronic kidney disease, Up to two-thirds have a menstrual disorder. Secondary amenorrhea is seen in 50-100% of patients with end stage renal disease, many of whom start to menstruate when put on dialysis(20).

2.2.3 Gynecologic/obstetric factors

From study on Abnormal uterine bleeding; its prevalence, causes and management in a tertiary care hospital, it was found that AUB is more common with high parity (38% with parity >3)(15). An observational study on AUB in peri-menopausal age AUB was much more common in multiparous women than in nulliparous and 96.11% belonged to para 1 and above, and among these, AUB was more common in para 1-3 (71.11%)(17).

History of abortion (AOR 1.5), history of sexually transmitted infection (AOR 2.2), and the history of intrauterine device use (AOR 2.1) were associated with abnormal uterine bleeding(4).

Study on abnormal uterine bleeding associated with hormonal contraception, women frequently discontinue hormonal contraception because of irregular bleeding and other side effects and 32 percent of women who started taking oral contraceptive pills discontinued them within six months(21) .

2.2.4Life style factors

The relationship between alcohol consumption and menstrual cycle: a review of the literature ,studies fall out with somewhat mixed findings suggesting that the premenstrual week is associated with increased, decreased, or no change in alcohol consumption(22).

It is known that women who smoke cigarettes and use oral contraceptives are more likely to have breakthrough bleeding than women who do not smoke(23).

Conceptual framework

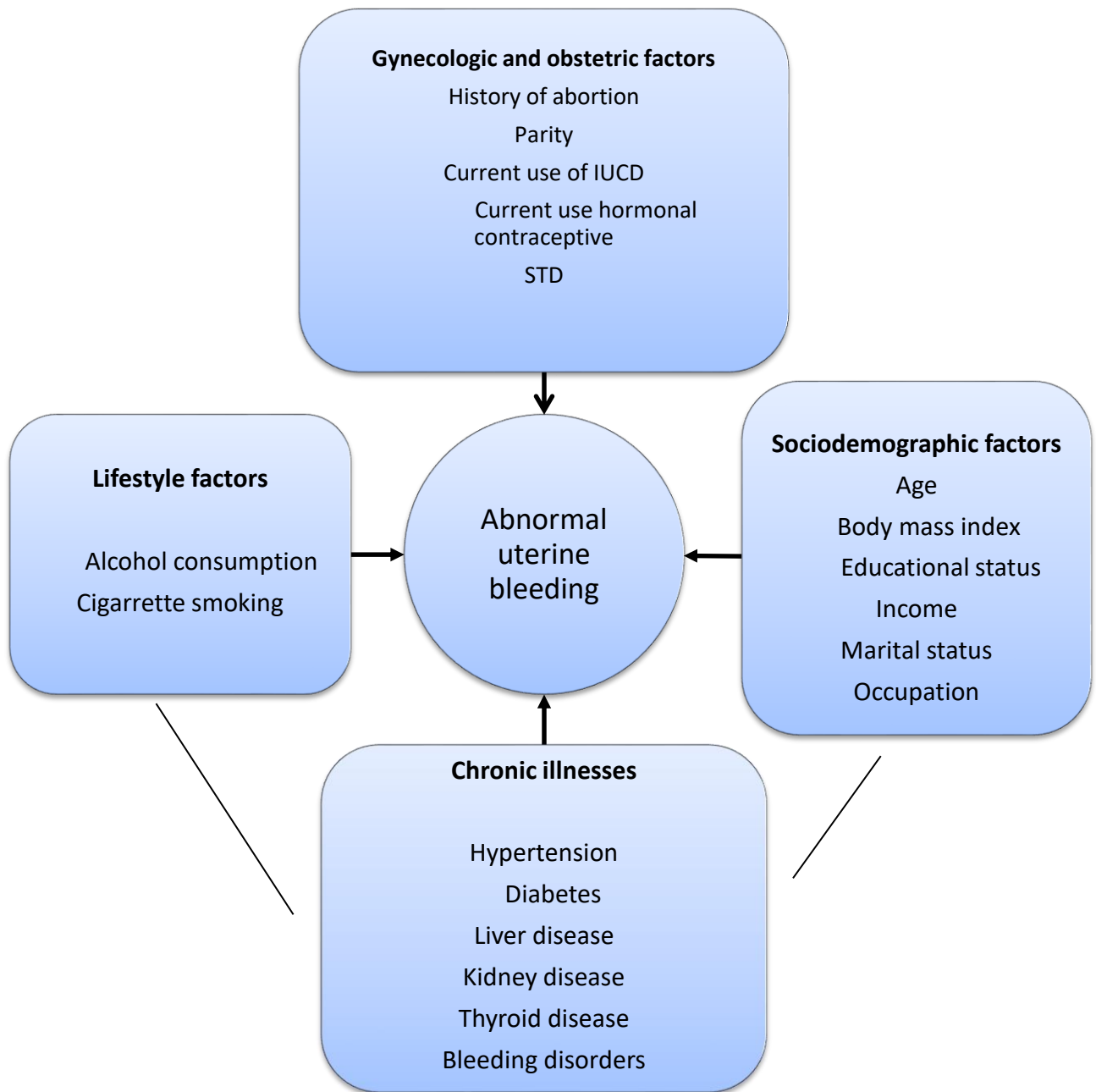


Figure 1 Factors associated with AUB in reproductive age woman having gynecologic OPD visits at tertiary hospitals in BahirDar ; derived from literature review 2023

3. OBJECTIVES

3.1 General objective

- ✓ To assess proportion and factors associated with abnormal uterine bleeding among reproductive age women visiting gynecologic OPD at tertiary hospitals in Bahir Dar, North-west Ethiopia, 2022/23.

3.2 Specific objectives

- ✓ To determine proportion of abnormal uterine bleeding among reproductive age women visiting gynecologic OPD at tertiary hospitals in Bahir Dar, North-west Ethiopia,
- ✓ To identify factors associated with abnormal uterine bleeding among reproductive age women visiting gynecologic OPD at tertiary hospitals of Bahir Dar, North-west Ethiopia.

4. METHODS AND MATERIALS

4.1 Study Area and Period

The study was conducted from March 1, 2023 to June 30, 2023 in two tertiary hospitals found in Bahir Dar city. Bahir Dar is the capital city of Amhara National Regional State, located 565 km Northwest of Addis Ababa with estimated population of 168,899 as per 2021 world population review. TGCSH and FHCSH are the two tertiary governmental hospitals in the city with estimated catchment population of seven million. FHCSH has two gynecologic OPDs. There are 5 general gynecologists currently working in the department of gynecology and 5 to 10 residents by monthly rotation from TGCSH. TGCSH is a teaching hospital of Bahir Dar University located in Sebatamitkebele, 7 km to the south of Bahir Dar. The hospital started its activity in November 2018 G.C and it provide inpatient and outpatient services in obstetrics and gynecology. Started subspeciality education a year back. It has four gynecologic OPDs.

4.2 Study Design

Institutional based cross-sectional study was conducted.

4.3 Source Population

All reproductive age women visiting gynecologic OPD at two tertiary hospitals in Bahir Dar were the source population.

4.4 Study population

All reproductive age women visiting gynecologic OPD at two tertiary hospitals in Bahir Dar during the study period were the study population.

4.5 Study Unit

Each reproductive age women who visit gynecologic OPD at two tertiary hospitals in Bahir Dar during the study period were recruited and interviewed.

4.6 Inclusion and Exclusion criteria

Inclusion criteria:All reproductive age women who visit gynecologic OPD at TGCSH and FHCSH.

Exclusion criteria:Those who are currently pregnant or bleeding from pregnancy related conditions were excluded.

4.7 Sample size determination

Sample size determined using Epiinfo for single population proportion using a prevalence value (P) of 34.1% from the study done in Jimma(4), marginal error (d) 5% and 95% confidence interval (CI). Where;

$$n = \frac{\left(z_{\alpha/2}\right)^2 (p(1-p))}{(d)^2}$$

No- Initial sample size

Z- Z value (e.g. 1.96 for 95% confidence interval)

d- Margin of error (expressed in decimal, 0.05)

Sample size = 345 and adding 10% non respondent total sample size will be 380.

Sample size calculation for objective two for the study on proportion and factors associated with abnormal uterine bleeding among reproductive age woman visiting gynecologic OPD at FHCSH and TGSH, Bahir Dar, Ethiopia, 2022/23.

Table 1 sample size determination

Factors	Assumptions	Proportion	OR	Sample size
History of abortion	CI- 95% Power- 80%	P1-16.7 P2- 27.7	1.5	475
History of STI	''	P1-12.7 P2-25.7	2.2	314
IUCD	''	P1-30.6 P2-62.4	2.1	88

Where P1= % outcome in unexposed group, P2=% outcome in exposed group

Sample size = 475 and adding 10% non respondent total sample size will be 522.

4.8 Sampling technique

The sample was collected from two tertiary hospitals at Bahir Dar city with proportional sampling from each hospital using a baseline data of OPD visit in the last one year which is 3156 at FHCSH and 2034 at TGCSH. Average visit per month was 434 for the study period. From a total of 502 samples; 310 samples were taken from FHCSH and 192 samples from TGCSH using systematic random sampling technique using a calculated K value of 6. K value for each day of data collection was selected by simple random sampling. The sample was coded as F1-310 for samples collected from FHCSH and T1-192 for samples collected from TGCSH.

4.9 Variables of the study

4.9.1. Dependent variable

Abnormal uterine bleeding (yes/no)

4.9.2. Independent variables

Sociodemographic factors

- ✓ Age
- ✓ Body mass index
- ✓ Educational status
- ✓ Occupation
- ✓ Marital status
- ✓ Income

Gynecologic and obstetric factors

- ✓ Parity
- ✓ History of abortion
- ✓ History of intrauterine contraceptive device (IUCD)
- ✓ Current use of hormonal contraceptive
- ✓ Current sexually transmitted disease (STD)

Lifestyle factors

- ✓ Alcohol consumption

Medical illness

- ✓ Diabetes
- ✓ Hypertension
- ✓ Liver disease
- ✓ Kidney disease
- ✓ Thyroid disease

4.10 Data collection instrument and procedure

Well structured written questionnaire was prepared in English. The questionnaire was adapted and developed with modification from related study of validated questionnaire and considered valid and reliable through the favorable comments of experts. The data collection was done by four first year residents, with close supervision by one third year residents and the principal investigator. Training on methods of data collection was given for one day for the data collectors and for the supervisors. The data was collected from clients using well structured questionnaire.

The pretest was done at Debreworkos Comprehensive Specialized Hospital on 10% of the sample size population. Clients who came to OPD are coded based on the time their chart arrived and then the first sample is chosen by simple random sampling to determine the k value for that day. K values are determined on daily basis.

4.11 Data quality Assurance

Data collectors and supervisors were given a one day training regarding the basic principles of data collection procedure. The principal investigator and supervisors made day to day onsite supervision during the whole period of data collection. Data collectors were checking completeness of the each questionnaire before going to others. At the end of each day, questionnaires were reviewed and checked for completeness, accuracy and consistency by the supervisor and principal investigator and corrective measure are taken together with the data collectors.

4.12 Data processing and analysis

After all the necessary data collected, the data was coded on pre-arranged coding sheet by the principal investigator. Data entry was done using Epidata version 3.1 and analysis was done using SPSS 25 version statistical software. Descriptive statistics was computed in percent and

presented in the form of texts and tables. Simple binary logistic regression, was used to identify the candidate variables for multivariable logistic regression and we use cutoff point of <0.25 . Multivariable logistic regression was used to identify the relative importance of each predictor variable to the dependent variable by controlling for the effects of other variables. In the multiple logistic regression, those variables with P-value <0.05 were found to be statistically significant. The association between dependent and independent variables was determined using odds ratio (OR) with 95% confidence interval (CI).

4.13 Operational definition and term definitions

Abnormal uterine bleeding (AUB) --- bleeding from uterine origin that is abnormal in duration, volume, frequency and regularity ;having any of the above bleeding patterns(3).

4.14 Ethical Considerations and Confidentiality

Letter of ethical clearance was written from Bahir Dar University school of medicine to TGCSH and FHCRH and the respondents were informed about purpose of the study and informed oral consent was taken. All information during data collection was confidential; there were no any personal identification which is left on the questionnaire.

4.15 Dissemination of Results

The results of this study will be disseminated to BDU school of Medicine, TGCSH, FHCSH and it may possibly disseminate through scientific publications.

The hard and soft copy of this study was documented in to BDU school of Medicine, TGCSH and also submitted to Bahir Dar city public hospitals, local health planners and NGOs, which work on maternal health. All effort will be made to publish this thesis in scientific journals.

5.RESULT AND INTERPRETATION

5.1 Socio-demographic characteristic of respondents

A total of 502 participants were interviewed, with a 96% response rate. The age range of respondents participated in the study was 15-49 year. Among respondents, 418(83.3%) are married. One hundred sixty (31.9%) of the participants can't read and write where as 110(21.9%) can read and write. One hundred eighty-five (36.9%) of the respondent were farmers and 98(19.5%) were working in private institution(Table 2).

Table 2Sociodemographic characteristics of women visiting gynecologic OPD in Bahir Dar city, 2023(n=502)

Characteristics	Number	Percent
Age category(n=502)		
15-25	95	18.9
26-34	172	34.3
35-49	235	46.8
Total	502	100
Marital status		
Single	42	8.4
Married	418	83.3
Divorced	27	5.4
Widowed	15	3.0
Total	502	100
Educational status		
Can't read and write	160	31.9
Read and write	110	21.9
Primary education	78	15.5
Secondary	107	21.3
College and above	47	9.4
Total	502	100%
Occupation		
Governmental	36	7.2
Merchant	78	15.5

Farmer	185	36.9
Private institution	98	19.5
Student	29	5.8
Housewife	76	15.1
Total	502	100%
Income category		
<1000	54	10.8
1000-2000	129	25.7
2000-3000	183	36.5
>3000	136	27.1
Total	502	100%

5.2 Gynecologic and obstetric factors

Among the respondents, 339(67.5) are multiparous. And 66(13.1%) has history of abortion and the remaining 436(86.9%) has not. Of participants , 221(44.0%) currently use hormonal contraceptives , and 25(5%) use IUCD(Table 3).

Table 3 gynecologic and obstetric factors of reproductive age woman visiting gynecologic OPD in Bahir Dar public hospitals,2023 (n=502)

Obstetric Characteristics		Number(percent)
Parity	Nulliparous	162(32.3)
	Multiparous	340(67.7)
History of abortion	Yes	66(13.1)
	No	436(86.9)
Current use of IUCD	Yes	25(5.0)
	No	477(95.0)
Current use of hormonal contraceptives	Yes	221(44.0)
	No	281(54.0)
Current STD	Yes	98(19.5)
	No	404(80.5)

5.3 Medical illnesses and lifestyle conditions

Among respondents, 3 (0.6%) has diabetes and 7 (1.4%) has hypertension. Majority (448, 89.2%) of respondents occasionally drink alcohol. Four hundred thirty-one (85.9%) of respondents has normal BMI and 21 (4.2%) has BMI less than 18.5% and the remaining 50 (10%) has BMI ≥ 25 (Table 4)

Table 4 medical illnesses and lifestyle conditions among reproductive woman visiting gynecologic OPD BahirDar ,2023 (n=502)

Characteristics		Number(percent)
History of hypertension	Yes	7(1.4)
	No	495(98.6)
History of diabetes	Yes	3(0.6)
	No	499(99.4)
Alcohol intake	Never	54(10.8)
	Occasionally	448(89.2)
BMI	<18.5	21(4.2)
	18.5-24.9	431(85.8)
	≥ 25	50(10%)

5.4 Prevalence of abnormal uterine bleeding (AUB)

Among participants who visit gynecologic OPD, 167 (33.3%) had abnormal uterine bleeding, and, 119 (71.3%) of them had intermenstrual bleeding, 104 (62.3%) of them had bleeding that lasts for more than 8 days (Table 5).

Table 5 pattern of abnormal uterine bleeding among gynecologic OPD visits of reproductive age women in Bahir Dar public hospitals, 2023

Pattern of bleeding	Number(percent)
Bleeding lasting more than 8 days	104(62.27)
Bleeding that occur 24 days before	80(47.90)
Menses that come 38 days intervening	28(16.76)
Inter menstrual bleeding	119(71.25)
Menses lasting more than 90 days	16(9.58)
Post coital bleeding	27(16.16)

5.5 Determinants of abnormal uterine bleeding

In bivariable logistic regression analysis :age, parity, history of abortion, current use of hormonal contraceptives, current treatment of STD ,and alcohol consumption were statistically associated with AUB with P value less than 0.25 at 95% confidence interval. But only history of abortion, current treatment of STD, current use of hormonal contraceptives and alcohol consumption were significantly associated with AUB in multivariable analysis with P value less than 0.05.

Having history of abortion was found to be associated with AUB (AOR 3.95 ,95% CI 1.92-8.13).

Keeping other variables constant, the odds of having AUB is 3.82 times more likely for those using hormonal contraceptives currently as compared to those do not use(AOR3.82 ,95% CI 1.25-7.63).

Those mothers having currently having STD are 2.52 times more likely of having AUB than not treated (AOR2.52 ,95% CI 1.276-4.97).

Alcohol consumption increases the odds of having AUB by 4.01 fold as compared to those who don't drink(AOR 4.01 ,95% CI 2.58-12.98)(Table 6).

Table 6 determinants of AUB among reproductive age woman visiting gynecologic OPD in Bahir Dar public hospital, 2023(n=502)

Variable categories	AUB (%)		COR (95%cl)	AOR (95%cl)	P -value
	Yes	No			
Age					
15-25	43	52	1		
26-34	43	129	2.48(1.458-4.220)	1.918(0.859-4.283)	0.112
35-49	95	172	1.51(0.933-2.458)	1.564(0.669-3.659)	0.302
Income					
1. <1000	23	31	1.129(0.598-2.134)	0.856(0.307-2.385)	0.766
2. 1000–1999	37	92	2.083(1.252-3.467)	1.671(0.794-3.517)	0.176
3. 2000–2999	47	136	2.424(1.511-3.891)	1.654(0.885-3.092)	0.115
4. ≥3000	62	74	1		0.227
Parity					
Nulliparous	63	100	1		
Multiparous	106	233	1.385(0.938-2.045)	0.933(0.506-1.722)	0.826
History of abortion					
yes	34	32	2.545(1.506-4.229)	3.954(1.923-8.126)	<0.001*
No	133	303	1	1	
Current use of hormonal contraceptives					
Yes	123	98	6.412(4.224-9.687)	3.82(1.254-7.635)	<0.001*
No	46	235	1		
Current having STD					
Yes	41	57	1.551(0.986-2.439)	2.519(1.276-4.972)	0.008*
No	128	276	1		
Alcohol intake					
Never	29	25	1		
Occasionally	140	308	2.552(1.422-4.157)	4.010(2.58-12.989)	<0.001*

Note : * statistically significant variable

Abbreviations COR- crude odds ratio, AOR – adjusted odds ratio

6.DISCUSSION

Magnitude of abnormal uterine bleeding at tertiary hospitals of BahirDar ,North-West Ethiopia was 33.3% (95% CI 29.3-37.7). This is in line with population based study done in Iran which is 35.8% and community based cross sectional study done in Jimma which was 34.1% (4, 7). This value is greater than cross sectional study done in India which has prevalence of 8.9%, observational study conducted in India which is 20.48% and this difference might be due to difference in population age studied in which all age group is studied, large sample size studied, lack of information, poor attitude toward health, and lack of health education programs (15)(16). Compared to those did not having previous abortion, those having history of abortion were significantly associated with AUB (AOR 3.95(1.92-8.13)) which is greater than the study done in Jimma (AOR 1.5 (1.02–2.41)) and this difference can be due to study design and population difference (4). The association might also be explained by most abortions are illegal in different countries and performed in poor aseptic techniques and by drugs that disturb menstrual cycle and resulting AUB and abortion may share same etiologies such as an underlying bleeding disorders. In addition post abortion infections may increase risk of bleeding (1).

The odds of having AUB was 3.82 times more likely for those using hormonal contraceptives currently as compared to those do not use (AOR 3.82 , 95% CI 1.25-7.63) and there is a positive correlation with study done America (21) and usually they will discontinue due this problems. One fourth may discontinue its use in the first year because of irregular menstrual bleeding and even unable to menstruate may happen after extended use especially those injectables (1).

Having current STD was two and half times more likely of having AUB (AOR 2.52) and this finding is comparable with the study done in Jimma (AOR 2.2(1.33–3.66) (4). This association might be explained by the fact that ascending infection results in irritation of the cervix, uterus, and fallopian tube and denuded endometrium, damaged cervix can result in easily bleeding (1).

Alcohol consumption increases the odds of having AUB by 4.01 fold and there was clear association in which mixed findings on the causality (22). It is clear that alcohol consumption especially excessive might result and liver disease, nutritional deficiencies that may predispose to acquired bleeding disorders that result to AUB .

7. CONCLUSION

Prevalence of abnormal uterine bleeding is 33.3% and having different patterns. History of abortion, use of current hormonal contraception having current STI and alcohol intake have are significantly associated with AUB.

8. LIMITATIONS

This study shares the limitation of cross sectional study that may not indicate the real association. As the study is done only in tertiary hospitals which are referral centers, the prevalence in the study may not be indicative.

9. RECOMMENDATIONS

Health care providers in the tertiary hospitals should be vigilant in diagnosing AUB and importantly its possible causes and create awareness for patients to decrease risks of STI and prompt treatment for those having STI.

Public health personnel's should create awareness in the community about AUB and its potential causes, on prevention of STI has multiple health benefits.

Conducting similar research with large sample size & including the causes of Abnormal uterine bleeding is recommended.

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ANNEXES

Annex 1: Information and consent Sheet

Date _____ Code _____ Health facility _____

My name is I am here on behalf of Dr Daniel Yizengaw (Resident in Obstetrics and Gynecology), he is working on this research project to assess proportion and factors associated with abnormal uterine bleeding among reproductive aged women visiting gynecologic OPD at tertiary hospitals, Bahir Dar, North West Ethiopia as partial fulfillment of specialty in Obstetrics and Gynecology. I am interviewing women who come to OPD and you are selected for the interview. So your cooperation has great role for fruitfulness of this study. You do not have to answer any questions that you do not want to answer, and you may end this interview at any time as you want. Any care or service provision never be discontinued related to your refusal to participate in this study. The care & support will continue even you did not accept this study. You can change your idea at any time even if you accept the study.

Risks: by participating in this study you will not face any risk but if you suspect any risk you can rise at any time.

Benefits & incentives: No incentives you will get in participating in this study.

Confidentiality: Your information will not be disclosed for anyone except by the investigator. Your name will not be written in the paper but by only coding. This code only known by the data collector. The data may be seen by investigator, advisor and data collectors but for others not will be disclosed

Time of interview: The interview will take about 15-20 minutes

Consent sheet

I heard all information above about the purpose of study, confidentiality, risks & time taken for the interview in this study. If you ever have questions about this study, you should contact

Principal investigator:

DrDaniel Yizengaw, Phone number; +251913751221or Email: danyizengaw@gmail.com

Agreement of the Participant: Do you agree? A. Yes B. No

If yes continue or if no give thanks & proceed to other participant.

Name and sign of data collector _____ Date _____

Annex 2 :Questionnaire

Section I:Sociodemographic characteristics of participants

S.no	Variables	Response
101	Maternal age (in years)	___yrs
102	Marital status	1.Single 2.Married 3.Divorced 4.Widowed
103	Educational status	1.Can't read and write 2.Can read and write 3.Primary (Grades 1–8) 4.Secondary (Grade 9–12) 5.Collage and Higher Education
104	Occupation	1.Government employee 2.Merchant 3.Farmer 4.Private employee 5.Student 6.housewife
105	Income (Ethiopian birr)	1. <1000 2. 1000–1999 3. 2000–2999 4. ≥3000

Section II :menstrual characteristics

S.no	Questions	Response	Skip to
201	Do you have bleeding lasting more than 8 days per menstrual period?	1. yes 2. no	
202	Do you have menses that come in less than 24 days?	1. yes 2. no	If yes skip to 204
203	Do you have menses that come after 38 days?	1. yes 2. no	
204	Do you have bleeding that occurs between normal menses?	1. yes 2. no	
205	Do you absence of menstrual bleeding for a 3 or more month period?	1. yes 2. no	
206	Do you have bleeding after coitus?	1 yes 2 no	
207	Did this woman has abnormal uterine bleeding?	1 yes 2 no	

Section III:Gynecologic and obstetric factors

301	Number of pregnancies	1.Nulliparous 2.Multiparous	
302	History of abortion	1.yes 2.no	
303	Current use of IUCD	1.yes 2.no	
304	Current use of hormonal contraceptive use	1.yes 2.no	
305	Current STD	1.yes 2.no	

Section IV chronic medical illnesses

401	History of diabetes	1 yes 2 no	
402	History of hypertension	1 yes 2 no	

Section V:Lifestyle factors

501	Alcohol consumption	1.Never 2.Occasionally drinking 3.Regularly drinking	
502	BMI (kg/m2)	1 <18.5 2 .18.5 - <24.9 2.>=25	