

Abnormal uterine bleeding and associated factors among reproductive age women in Jimma town, Oromia Region, Southwest Ethiopia

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Abstract

Introduction: Abnormal uterine bleeding is any bleeding that deviates from normal menstruations. It differs in terms of frequency of bleeding, duration, and the pattern of bleeding during menstrual cycle or menopause. It is a major gynecological problem for medical visits among women in the reproductive aged group. However, data on abnormal uterine bleeding in Ethiopia are limited. Therefore, this study aimed to assess the abnormal uterine bleeding and associated factors among reproductive age women in Jimma town, Southwest Ethiopia.

Methods: Community-based cross-sectional study was employed from 1 January to 30 April 2020. Six hundred sixty women were selected by using systematic random sampling. Data were collected by using semi-structured questionnaires. Data were entered into EPI data version 3.1 and analyzed by using SPSS version 25 software. All predictor's variables with p value <0.25 in bivariable analysis were entered into multivariable logistic regression analysis. Variables with a p value of less than 0.05 in the multivariable analysis were taken as statistically significant predictors of abnormal uterine bleeding.

Results: Out of 660 participants, 225 (34.1%) had abnormal uterine bleeding. From women with abnormal uterine bleeding, the prevalence of metrorrhagia, heavy periods, oligomenorrhea, inter-menstrual bleeding, polymenorrhea, and amenorrhea was 59 (26.2%), 54 (24%), 53 (23.5%), 46 (20.4%), 35 (15.5%), and 25 (11.1%), respectively. History of abortion (adjusted odds ratio = 1.5, 95% confidence interval: 1.02–2.41), history of uterine fibroids (adjusted odds ratio = 3.83, 95% confidence interval: 1.85–7.94), history of sexually transmitted infection (adjusted odds ratio = 2.2, 95% confidence interval: 1.33–3.66), and the history of intrauterine device (adjusted odds ratio = 2.1, 95% confidence interval: 1.39–2.97) were significantly associated with abnormal uterine bleeding.

Conclusion: The prevalence of abnormal uterine bleeding was higher in Jimma town.

Keywords

abnormal uterine bleeding, Ethiopia, Jimma town

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Introduction

Abnormal uterine bleeding (AUB) is any bleeding that deviates from normal menstruations. It may differ in terms of frequency of bleeding, durations, and the pattern of bleeding during menstrual cycle or menopause.¹ 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.^{1–3} One-third of outpatient visits to the gynecology department are for AUB, and it

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accounts for more than 70% of all gynecologic consults in the premenopausal and postmenopausal women who suffer from various forms of this disorder at different ages in their life.³⁻⁵

It occurs during a women's problem with medically, mentally, and socially ill.⁶ In addition to this, it is one of common causes of anemia in women, especially in developing world.^{2,7} Abnormal menstruation is 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. In general, it affects maternal quality of life, socially and physically.^{2,5}

Abnormal bleeding may occur in different conditions. It may occur in pregnancy, secondary to hemostatic disorders, pathology of the genital tract, infections, systematic diseases, endocrine disturbance, obesity, stress, and extreme exercise account can all disrupt normal ovulatory function and may be considered as preventable risk factors for AUB.^{1-5,7-22}

In the general population, the AUB is different from different studies. The prevalence of AUB reported from 5% to 65% among reproductive age women. In addition, among Ethiopian population, studies done on AUB have been very limited. Therefore, this study was aimed to assess the AUB and its related factors among reproductive age women of Jimma town, Southwest Ethiopia. This study helps to identify the magnitude and risk factors of abnormal menstrual bleeding in the study setting. This is important for local health planners, policy makers to implement appropriate strategies for early screening, diagnosis, and treatment of AUB to decrease maternal morbidity and mortality.

Methods

Study area, design, and study period

Community-based cross-sectional study was employed from 1 January to 30 April, 2020, in Jimma town, Southwest Ethiopia. Study setting (Jimma Town) is 355 km away from Addis Ababa, capital city of Ethiopia. According to data from the municipality of the Jimma town 2018, total populations were about 205,384 and 42,788 households. From this, female were 104,745 and women in reproductive age were 23,462.

Population

The source population includes all age-eligible women (15–49) in Jimma town. The study subjects were systematically selected reproductive women aged 15–49 years in selected kebeles of Jimma town who had been living in Jimma town for at least 6 months.

Eligibility criteria

Women of reproductive age group of 15–49 years were included, and those who were seriously ill, those with

uncertain menarche or menopausal status, hysterectomy, oophorectomy, menopause, pregnant, and breastfeeding women were excluded.

Operational definition

Heavy periods: Total menstrual blood loss of 80 ml or more in a cycle of normal duration.

Metrorrhagia: Irregular excessive menstrual blood loss occurring over several consecutive cycles.

Polymenorrhea: Menstruation interval lasting less than 21 days.

Oligomenorrhea: Menstruation interval of more than 35 days but less than 90.

Amenorrhea: Failure to menstruate for 90 days or longer.

Inter-menstrual bleeding: Bleeding occurs between menses, discontinuous with the cycle archives.

AUB: Having any of these (heavy periods, metrorrhagia, polymenorrhea, amenorrhea, inter-menstrual bleeding).

Sample size determination and sampling procedure

The sample size was calculated by using a single proportion formula by considering the assumptions: P=50% the prevalence of AUB not done in Ethiopia. D=4% the margin of error, $Z_{\alpha/2}=1.96$ at 95% confidence of certainty. Thus, $n = ((Z_{\alpha/2})^2 * p(1-p)) / d^2 = 600$, considering 10% non-response rate=60 and the final sample size was 660. Six kebeles were randomly selected from total of 17 kebeles of Jimma town for the study. The final sample size was proportionally allocated to each kebele based on the size of household. Systematic sampling technique was used to recruit the participants. The interval of the sample was $k=22$, and it was determined based on the total number of households of each kebele.

Data collection tool

Data were collected through a pretesting structured questionnaire which is developed after reviewing different literatures (see Supplemental File). The questionnaire contains sociodemographic factors, lifestyle factors, reproductive history, and present clinically diagnosed disease.

Data analysis

The collected data were checked for its completeness and coded, then entered to EPI data version 3.1 and transported to SPSS version 23 for analysis. Descriptive analysis, such

as frequencies, percentage, and means, was done as necessary. Bivariable logistic regression was used to identify predictors and multivariable logistic regression was used to identify an association between the outcome and predictor variables. Independent variables having a p value less than 0.25 in the bivariable analysis was identified as predictors. Then predictor variable was transported to multivariable to identify significant variables and to avoid confounding. In the multivariable Hosmer and Lemeshow test, $p=0.32$. A p value less than 0.05 was considered as statistically significant risk factors.

Data quality assurance

To ensure the quality of data and cultural acceptance of the tool, pretests of data collection tools were carried out with 5% of reproductive age women in Agaro town prior to actual data collection. After the pretest, some clarification, correction was taken. Routinely gathered data were checked for completeness and neatness. Then, amendments and necessary correction were made.

Results

Sociodemographic characteristics of participants

A total of 660 participants were involved in this study with a response rate of 100%. The mean ages of the respondents were 32 (± 7) years. Two-thirds of the participants (458, 69.4%) had married history and one-third of the participants (202, 30.6%) had no married history. Regarding educational status of the respondents, around 170 (25.8%) can read and write followed by primary school (154, 23.3%) (Table 1).

Menstrual characteristics of women in reproductive age group

Out of 660 participants, 225 (34.1%) participants had AUB and out of participants with AUB, the prevalence of metrorrhagia, heavy periods, oligomenorrhea, inter-menstrual bleeding, polymenorrhea, and amenorrhea in reproductive aged women was 59 (26.2%), 54 (24%), 53 (23.5%), 46 (20.4%), 35 (15.5%), and 25 (11.1%), respectively (Table 2).

Lifestyle factors, reproductive history, and present clinically diagnosed diseases

Three-fourths (526, 79.7%) of the participants had body mass index less than 23.9 and only 134 (20.3) participants had body mass index greater than 24. More than half (357, 54.1%) of them were nulliparous and 303 (45.9%) were given more than one birth. About two-thirds (441, 66.8%)

Table 1. Sociodemographic characteristics of women for abnormal uterine bleeding (15–49 years) in Jimma town, Southwest Ethiopia, June 2020 (N=660).

Variables	Category	Number	Percentage
Age (years)	15–24	94	14.2
	25–29	145	22.0
	30–34	129	19.5
	35–39	115	17.4
	40–44	108	16.4
	45–49	69	10.5
Marital status	No marriage history	202	30.6
	Marriage history	458	69.4
Education status	Cannot read and write	150	22.7
	Can read and write	170	25.8
	Primary school	154	23.3
	Secondary school	96	14.5
	College and above	90	13.6
Occupational status	House wife	114	17.3
	Farmer	96	14.5
	Daily laborer	167	25.3
	Merchant	179	27.1
	Employer	104	15.8
Income (Ethiopian birr)	<1000	274	41.5
	1000–1999	224	33.9
	2000–2999	134	20.3
	≥ 3000	28	4.2

Table 2. Menstrual characteristics of women for abnormal uterine bleeding (15–49 years) in Jimma town, Southwest Ethiopia, June 2020 (N=660).

Variables	Category	Number	Percentage
Normal menstruation AUB		435	65.9
	Pattern of AUB	225	34.1
	Heavy periods	54	24
	Metrorrhagia	59	26.2
	Polymenorrhea	35	15.5
	Oligomenorrhea	53	23.5
	Amenorrhea	25	11.1
	Inter-menstrual bleeding	46	20.4

AUB: abnormal uterine bleeding.

of the participants had no abortion history and 219 (33.2%) of the participants had abortion history at least one. About one-third of the participants were using intrauterine device (IUCD) and hormonal contraceptives at least one time (Table 3).

Factors independently associated with AUB

In bivariable logistic regression analysis, history of abortion, history of uterine fibroids, history of sexually transmitted infection (STI), history of IUCD use, and history of hormonal contraceptive use were found to have a p value

Table 3. Lifestyle factors, reproductive history, and clinical diagnosis of women for abnormal uterine bleeding (15–49 years) in Jimma town, Southwest Ethiopia, June 2020 (N= 660).

Variables	Category	Number	Percentage
BMI (kg/m ²)	<23.9	526	79.7
	>24	134	20.3
Smoking	Never	618	93.6
	Occasionally smoke	32	4.8
	Regularly	10	1.5
Alcohol consumption	Never	493	74.7
	Occasionally drinking	143	21.7
	Regularly drinking	24	3.6
Number of pregnancies	Nulliparous	357	54.1
	Multiparous	303	45.9
History of abortion	No	441	66.8
	Yes	219	33.2
History of IUCD	No	431	65.9
	Yes	229	34.6
History of hormonal contraceptive use	No	433	65.9
	Yes	227	34.1
History of STI	No	435	65.9
	Yes	225	34.1
Uterine fibroids	No	598	90.6
	Yes	62	9.4
Uterine cancer	No	652	98.7
	Yes	8	1.3
Bleeding disorder	No	651	98.6
	Yes	9	1.4
Thyroid disorder	No	632	95.8
	Yes	28	4.2

BMI: body mass index; IUCD: intrauterine device; STI: sexually transmitted infection.

less than 0.25 in bivariable analyses. In multivariable logistic regression, history of abortion (adjusted odds ratio (AOR)=1.5, 95% confidence interval (CI): 1.02–2.41), history of uterine fibroids (AOR=3.83, 95% CI: 1.85–7.94), history of STI (AOR=2.2, 95% CI: 1.33–3.66), and history of IUCD use (AOR=2.1, 95% CI: 1.39–2.97) were independently associated with AUB (Table 4).

Discussion

This study assessed the prevalence and factors associated with AUB among reproductive age women in Jimma town, Oromia region, Southwest Ethiopia. This study showed that 34.1% of surveyed women had reported a history of AUB. The finding was similar to the study conducted in Tehran with a prevalence of 35.8%.³ Current finding was higher than that in studies conducted in other developing countries (8%–30%).^{22,23} Other studies in Iran had prevalence of AUB (27.2%),³ China 18.2%.¹ This discrepancy might be due to the lack of information, poor attitude toward health, and lack of health education programs. Lack of knowledge of women regarding AUB and the preventable factors and its association may increase the prevalence of AUB. This finding is notably

lower than that in study done in India with a prevalence of 36%.²⁴ This discrepancy might be due to differences in classification of AUB and definition of AUB, and this study was a community-based study which may decrease the magnitude of AUB.

From a total of participants with AUB, the prevalence of metrorrhagia, heavy periods, oligomenorrhea, intermenstrual bleeding, polymenorrhea, and amenorrhea in reproductive aged women was 59 (26.2%), 54 (24%), 53 (23.5%), 46 (20.4%), 35 (15.5%), and 25 (11.1%), respectively. The finding was in line with the study conducted in India: menorrhagia (24.6%), metrorrhagia (22.9%) polymenorrhea (17.1%), and polymenorrhea (10%).¹⁰ Another study showed bleeding pattern menorrhagia in (32%), followed by polymenorrhea (14%), metrorrhagia (9%), and menometrorrhagia (4%).²⁴ In Tehran (Iran), there was prevalence of metrorrhagia (8.9%), heavy periods (15.2%), polymenorrhea (10.6%), oligomenorrhea (15.2%), amenorrhea (2.2%), and intermenstrual bleeding (4.3%).³ An institutional based study, done in India, showed menorrhagia of 33% and hyper menorrhea of 11.89%.²⁰ Discrepancy might be due to the study setting (study done in India is an institution based) and this may increase the prevalence of AUB, differ in classification of

Table 4. Bivariable and multivariable logistic regression analysis of factors associated with abnormal uterine bleeding of women aged 15–49 years in Jimma town, Southwest Ethiopia, June 2020 (N = 660).

Variables	Category	AUB		Bivariate	Multivariate analysis	
		No (%)	Yes (%)	COR (95% CI)	AOR (95% CI)	p value
History of abortion	No	378 (57.3)	63 (9.5)	1	1	1
	Yes	173 (26.2)	46 (7.0)	1.74 (1.14–2.64)	1.5 (1.02–2.41)	0.046*
Uterine fibroids	No	386 (58.5)	212 (32.1)	1	1	1
	Yes	49 (7.4)	13 (1.9)	0.41 (0.26–0.91)	3.8 (1.85–0.7.94)	0.001*
History of STI	No	386 (58.5)	49 (7.4)	1	1	1
	Yes	179 (27.1)	46 (6.9)	2.04 (0.13–3.14)	2.2 (1.33–3.66)	0.002*
IUCD	No	330 (50)	101 (15.3)	1	1	1
	Yes	141 (21.4)	88 (13.3)	1.99 (1.48–2.85)	2.1 (1.39–2.97)	0.001*
History of hormonal contraceptive use	No	307 (46.5)	126 (19.1)	1	1	1
	Yes	129 (19.5)	98 (14.8)	1.83 (1.31–2.57)	2.0 (0.91–4.39)	0.084

AUB: abnormal uterine bleeding; COR: crude odds ratio; CI: confidence interval; AOR: adjusted odds ratio; 1: reference; STI: sexually transmitted infection; IUCD: intrauterine device.

*Value statistically significant.

AUB, lack of access to health system, and use of different age group.

Furthermore, according to the current finding, participants who had history of abortions were associated with a more than one and half fold increase in the risk of AUB. This finding is consistent with study done in China.¹ The association might be explained by most abortions are illegal in different countries and it is performed in poor aseptic conditions, mostly by drugs that disturb the menstruation cycle or AUB. Abortion shared common etiologies, such as underlying bleeding disorders.¹¹

History of STIs was associated with an increase in the risk of AUB. This result is consistent with studies done in India.²⁴ This association can be explained by the fact that ascending infection results in irritation of the uterine and Fallopian tube (salpingitis) leading to tubal dysfunction.²⁵ Women having a history of IUCD usage increases the risk of AUB. This finding was consistent with studies done in India.¹⁰ This association can be explained by the fact that the use of IUCD may irritate the uterus resulting in bleeding.²⁶ History of uterine fibroids was associated with AUB. This finding was consistent with studies done in India.⁶ This association can be explained by the fact that uterine fibroids put the pressure on the arteries supplying the uterine wall, which may cause AUB than usual or the fibroids activate the growth of blood vessels which leads to irregular menstrual bleeding.²⁷

This study help, local health planner, health institutions, health bureau and policy makers for routine screening, diagnosis of AUB for implementing appropriate strategies to decrease maternal morbidity and mortality due to AUB and used for evidence-based practice.

This study has also limitation: Questionnaire contains self-reporting symptoms of abnormal menstrual bleeding which may not represent actual problem. Also the study

design was cross-sectional, which does not show cause and effect.

Conclusion

The study revealed that the prevalence of AUB was 34.1% in the study setting. From AUB participants, the prevalence of metrorrhagia, heavy periods, oligomenorrhea, intermenstrual bleeding, polymenorrhea, and amenorrhea in reproductive aged women was 59 (26.2%), 54 (24%), 53 (23.5%), 46 (20.4%), 35 (15.5%), and 25 (11.1%), respectively. History of abortions, history of uterine fibroids, history of STI, and history of IUCD use were independent predictors of AUB. A health professional should be aware that the evaluation of iron deficiency and anemia is essentially important for women who present with AUB.

Based on the current finding, the following recommendations were made to be taken by different stakeholders. We wish to recommend local health planner, health institutions, health bureau, and policy makers for routine screening and diagnosis of AUB for implementing appropriate strategies to decrease maternal morbidity and mortality due to AUB. We also wish to recommend health providers to emphasize risk factors associated with AUB and apply evidence-based practice.

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Author contribution(s)

Urge Gerema: Conceptualization; Data curation; Formal analysis; Methodology; Software; Supervision; Writing—original draft; Writing—review & editing.

Kumsa Kene: Data curation; Funding acquisition; Investigation; Methodology; Software; Writing—original draft; Writing—review & editing.

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Diriba Dereje: Conceptualization; Investigation; Methodology; Project administration; Resources; Validation; Writing—original draft; Writing—review & editing.

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Ethical approval

Ethical approval or clearance letter RPSCMF/0132/19 was obtained from the Institute of Health, Jimma University. Permission letter was obtained from Jimma town Health Office and respective kebele administrative office before data collection. Written informed consent was obtained from all participants. Personal identifiers like name were not recorded to maintain confidentiality of the study participants.

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Availability of data and materials

The data set used and/or analyzed during the current study is available from the corresponding author on reasonable request.

Supplemental material

Supplemental material for this article is available online.

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