



# What Are the Affecting Factors on the Quality of Life and Level of Satisfaction and Comfort in Patients Suffering From Abnormal Uterine Bleeding?

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## Abstract

**Objectives:** Abnormal uterine bleeding (AUB) is a disorder which adversely influences the social status and level of satisfaction in women with reproductive ages. Improving health-related quality of life (HRQL) is a precious goal in the treatment of AUB. The aim of this study was to evaluate the QOL in patients with AUB and the affecting factors. More precisely, this study attempted to assess which different aspects of QOL may be influenced by AUB.

**Materials and Methods:** This cross-sectional study was performed on 152 women with AUB referring to our gynecology and obstetrics department of a tertiary center in Semnan, Iran in 2015-2016. The QOL was investigated in these women using Clinical History Assessment Tool (CHAT) and SF-36. Finally, the data were analyzed in SPSS-21 software and after performing Fisher exact test and K2 test,  $P < 0.05$  was considered to be significant.

**Results:** In general, 152 patients were enrolled in our study. The results suggested that the QOL and level of life satisfaction were not changed according to the age, gender, matrimonial status, place of residence, occupation, education, body mass index, or the hemoglobin level in this group. However, menorrhagia significantly affected the dimensions of physical functioning, vitality and dynamism, social functioning, and pain and general health perception.

**Conclusions:** Overall, women with AUB, especially those with menorrhagia, have extremely lower QOL than the others. By recognizing all contributing factors to the QOL in such women, it can be possible for gynecologists to help the women improve their diary functions and comfort levels. Nonetheless, more studies seem to be needed to evaluate these factors.

**Keywords:** Quality of Life, Menorrhagia, HRQL-AUB

## Introduction

Abnormal uterine bleeding (AUB) is one of the most noticeable disorders in women of reproductive age. In a new study in China, ovarian dysfunction, polyp, leiomyoma, adenomyosis, endometrial dysfunction, iatrogenic, malignancy, coagulopathy, and AUB-N were observed in 57.75%, 16.2%, 12%, 4.94%, 2%, 2%, 1.9%, 1%, and 0.9%, respectively, in 1053 participants within the age range of 15-55 years. AUB is defined as any irregularity or disruption in the menstrual cycle. In many studies, gynecologists have used the acronym PALM-COEIN to categorize causes as polyp, adenomyosis, leiomyoma, malignancy (and hyperplasia), coagulopathy, ovulatory disorders, endometrial, iatrogenic, and not otherwise classified (1). AUB is mostly expressed in qualitative terms since women with this disorder are unable to accurately describe their conditions. This limitation leads to difficulty in diagnosis and treatment initiation (2,3). There are various definitions and diagnostic algorithms for AUB and other studies have reported a prevalence of 10% to 52% for this disorder, which indicates a large

number of the affected and the need for further assessment of the patients (4-6). Many studies demonstrated the detrimental effects of AUB on the quality of life (QOL) in patients. For example, poor concentration at work, which occasionally forces taking several sick leaves (3), and the costs of treatment and recovery are among personal and social issues that affect the QOL in AUB patients. The World Health Organization defines the health-related QOL (HRQL) as complete personal, social, mental and spiritual well-being (7,8). In medical terms, the HRQL mostly applies to bleeding disorders, especially AUB (9-11). In their study, Rae et al emphasized the medical conditions associated with AUB in addition to noting personal and social problems caused by the disorder (e.g., iron deficiency) and attributed the reduction in HRQL to these conditions (12). In the Middle East, particularly the Persian Gulf countries, 30% to 56% of the cases of iron deficiency anemia are attributed to AUB (13-15). Therefore, improving HRQL is the primary goal in AUB treatment and an improved QOL is considered an outcome of treatment (16). Various factors affect the QOL

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of patients with AUB, including the amount and duration of bleeding (17). In another study by de Souza et al, the blood hemoglobin level seemed to have incredible effects on the QOL in women without a normal menstrual cycle (18). In addition, a systematic review in Australia showed that an average of one billion dollars is globally spent every year to treat AUB patients or to compensate for the losses caused by the disruptions in work and the forced sick leaves owing to the condition (19). The descriptive objective of this study was to identify the epidemiology and burden of this disorder in the community. Considering that descriptive epidemiology studies entail the researcher's answer to three questions concerning the disease (who, when, and where), the present study was conducted to vet the QOL in patients with AUB and the affecting factors in Semnan, Iran in 2015-2016.

### Materials and Methods

This cross-sectional study was done during 2015-16 on 152 AUB patients referring to the Gynecology and Obstetrics Clinics of Amir-al-Momenin hospital affiliated to Semnan University of Medical Sciences, Semnan, Iran. After obtaining a code of ethics for the research (IR.SEMUMS.REC.1394.232) from Semnan University of Medical Sciences, the study subjects were selected through a survey using the convenience sampling method over a one-year period. The study inclusion criteria were being within the age range of 20 to 45, visiting with an AUB suspicion, and experiencing changes or disruptions in the frequency of menstruation, along with the duration and amount of bleeding over the past three months. The exclusion criteria included lactation, a positive pregnancy test or evidence of pregnancy (e.g., delayed menstruation), histological disorders and a positive endometrial biopsy (e.g., hyperplasia and malignancy), and the use of intrauterine devices (IUDs) containing levonorgestrel. The other exclusion criteria were the use of gonadotropin-releasing agonists over the past six months, the use of DepoMedroxy progesterone acetate over the past 6 months, menopause, and chronic pelvic pain syndrome, coagulation disorders, or hemorrhagic disorders. Data were collected with a three-part questionnaire after obtaining written consent from the participants. The first part examined the demographic details of participating women, including 13 items on age, education, occupation, as well as the place of residence, body mass index (BMI), gravidity, the number of live births and miscarriages, underlying diseases, used medications and contraceptive methods, the date of the last menstruation, and hemoglobin level. The second part assessed the patients' clinical history and AUB using routine examinations and history-taking, as well as the Clinical History Assessment Tool (CHAT). It consisted of seven standard items approved by the Society of Obstetricians and Gynecologists of Canada for assessing the symptoms and evidence of AUB (20-22) and included two-choice questions for which positive

and negative responses received one and no point at all, respectively. The total obtained score in CHAT varied from 0 to 7 for each patient and scores of 5 or above indicated menorrhagia. The third and last part of the tool evaluated the patients' QOL using the standard SF-36 within 11 separate domains, each evaluating the QOL in patients over the past four weeks (i.e., the previous month). It should be noted that this tool is a standardized and commonly-used questionnaire, the validity and reliability of which were confirmed in systematic review studies (23). In terms of distribution variables, the subgroups of the statistical society were compared in terms of QOL scores using dual comparisons. Therefore, the minimum sample size for each subgroup was 30 to reach the normal distribution considering that there are expected to be 5 subgroups in some distribution variables then the sample size for the study included 150 people. This range of age was chosen due to the absence of premenopausal problems and menstrual disorders which might lead to bias in our study. The collected data through these questionnaires were analyzed in SPSS-21 using the *t* test and the chi-squared test or Fisher exact test for qualitative variables. All tests were performed at the confidence level of 95% and the significance level of less than 0.05.

### Results

A total of 152 patients with AUB participated in the study and their mean age was  $35 \pm 9.8$  years. In addition, 23% of the subjects were single while 77% were married. Further, 81 (53.3%) cases had a high school diploma or less and 71 (46.7%) of them had higher than high school education. A total of 115 (75.7%) women were housewives and 37 (24.3%) of them were employed. In general, 82 (56.6%) subjects had a BMI of 25 or below whereas 66 (43.4%) of them had a BMI above 25.

Furthermore, gravidity varied from 0 to 7 in the subjects and most women (46.7%) had no previous pregnancies. On the other hand, 36%, 83%, and 17% of them had live births, no miscarriages at all, and one to three miscarriages, respectively (Table 1).

The present findings showed no meaningful relationships between the QOL in AUB patients and marital status, education, occupation, and the history of anemia ( $P > 0.05$ , Table 2). Given that the QOL has eight dimensions, each dimension was separately assessed in the patients in relation to menorrhagia, and significant relationships were observed regarding physical functioning, vitality, social functioning, as well as pain and general health perception ( $P < 0.05$ ). However, no relation was found with role limitations because of physical health problems and emotional health problems, and mental health ( $P > 0.05$ ), the details of which are provided in Table 3.

### Discussion

AUB is one of the most common disorders that adversely affects the personal and social life of women of

**Table 1.** Demographic Characteristics of Participating Patients

Variable		No.	%
Age	≥35	83	54.6
	<35	69	45.4
Marital status	Single	35	23
	Married	117	77
Education	High school diploma	81	53.3
	Higher education	71	46.7
Occupation	Housewife	115	75.7
	Employed	37	24.3
Parity	No pregnancy	71	46.7
	Live birth	55	36
	Miscarriage	26	17
Body mass index	<25	66	43.4
	≥25	86	56.6

**Table 2.** The Relationship Between the Quality of Life and Demographic Characteristics

Variable		Mean	SD	P Value
Age	≤35	36.18	12.45	0.967
	>35	36.28	14.25	
Marital status	Single	35.04	12.75	0.580
	Married	36.56	13.44	
Occupation	Housewife	35.62	37.84	0.623
	Employed	37.84	11.67	
Education	High school diploma	36.18	14.81	0.964
	Higher education	36.28	11.41	
Body mass index	≤25	33.73	11.72	0.057
	>25	38.17	14.30	
Hemoglobin level	≥12	34.82	13.94	0.225
	<12	37.65	12.30	
Menorrhagia	Yes	33.31	13.88	0.016
	No	38.94	11.73	

**Table 3.** The Relationship Between Menorrhagia and Different Dimensions of the Quality of the Life of Participating Patients

Dimension		Mean	SD	P Value
Physical function	No	25.95	22.46	0.006
	Yes	15.76	18.89	
Physical role functioning	No	25.91	29.98	0.129
	Yes	34.17	32.75	
Emotional role functioning	No	25.38	30.90	0.311
	Yes	31.03	33.71	
Vitality	No	51.74	16.72	0.311
	Yes	43.89	15.76	
Mental health	No	46.76	17.11	0.119
	Yes	42.02	17.84	
Social functioning	No	39.55	24.09	0.001
	Yes	26.07	23.09	
Pain	No	50.30	24.82	0.004
	Yes	37.06	27.17	
General health perceptions	No	47.46	21.59	0.025
	Yes	39.57	19.06	

reproductive age (1). According to the present findings regarding the characteristics of life in AUB patients and its related factors, women with AUB, especially those with menorrhagia, have a lower QOL compared to those with a normal menstrual cycle, which is consistent with the results obtained in several studies. For example, Karlsson et al conducted an online survey of 5147 women with AUB aged 40-45 and suggested a lower QOL in AUB patients, and finally, found significant relationships between these limitations and the amount and frequency of bleeding (23). Based on the results of a study on 1589 patients with AUB, Rae et al also rated the QOL as low in these patients and found that the score of QOL decreases more significantly with higher amounts of bleeding and more irregular periods (12). A cross-sectional study conducted by Xu et al reported the score of QOL as 41.4 in 647 AUB patients and thus this index was rated as low in this group (24). In a trial conducted by Abu-Rafea et al on Middle-Eastern women, including 61 patients with AUB and 41 healthy women of reproductive age, the QOL was found to be lower in the AUB patients compared to healthy women (16). In another study, De Souza et al examined 58 patients with AUB and found that this condition is a factor that adversely affects the QOL (18). Additionally, Fraser et al conducted a systematic review study in Australia and reviewed 1113 AUB patients examined in different QOL published studies (1965-2007). Such studies used the SF-36 to investigate their subjects and reported a significantly lower QOL in AUB patients compared to the general population (4). Similarly, Kadir et al evaluated 99 patients during menstruation with varying degrees of hemorrhagic disorder and rated their QOL as low (22). In another review study on 18 different studies conducted on 1171 women with menorrhagia, Shankar et al also found a lower QOL in these women (25). Based on the findings of a prospective cohort study by Coulter et al on 348 patients followed up for 18 months, a lower QOL was found in women with hemorrhagic disorders compared to healthy women (26). In our findings, menorrhagic women had low QOL compared to others, which is in line with the results of the above-mentioned studies (4,12,16,18,22-26). The present findings showed no significant relationships between hemoglobin levels and changes in the QOL in patients with uterine bleeding problems, which is inconsistent with the results obtained by De Souza et al on 58 AUB patients with low hemoglobin levels. They found that reduced hemoglobin affects the QOL in such patients and proposed hematocrit indices as a reliable predictor of the QOL. This disparity may be caused by the smaller sample size in their research and the need for a more extensive assessment (18).

There was also a significant relationship between menorrhagia and the QOL since patients with menorrhagia had a significantly lower QOL compared to other patients with hemorrhagic disorders in five dimensions of the QOL, including physical functioning, vitality,

social functioning, pain, and general health perception. However, no significant relationships were found between this condition and the dimensions of mental health, role limitations caused by physical health problems, and role limitations caused by emotional health problems, which corroborates with the results obtained by Rae et al on AUB patients, in which patients with menorrhagia had a lower QOL (12). In Shankar's review study of patients with the hemorrhagic disorder, women with menorrhagia were found to have lower QOL scores in all 8 dimensions compared to the other women with uterine bleeding disorders, which is consistent with the present findings. The disparity of the findings with regard to three out of the eight dimensions of the QOL index appears to be due to the small sample size of our study compared to the study by Shaker (25). By identifying the factors associated with the QOL of people with abnormal uterus bleeding, it is possible to improve and control these patients, and finally, to improve the QOL of these patients, including a wide range of patients referring to gynecological clinics. In addition, by identifying the factors associated with the QOL of women with AUB (e.g., anemia), it is advisable to take preventive treatment of this disorder. Thus, further studies are needed to confirm our data.

### Conclusions

The obtained results showed a lower QOL in women with AUB, especially those with menorrhagia, compared to other women. The QOL is not noticeably related to any of the variables of age, marital status, body mass index, education, occupation, and hemoglobin level.

### Conflict of Interests

Authors have no conflict of interests.

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### References

- Fraser IS, Critchley HO, Munro MG, Broder M. A process designed to lead to international agreement on terminologies and definitions used to describe abnormalities of menstrual bleeding. *Fertil Steril*. 2007;87(3):466-476. doi:10.1016/j.fertnstert.2007.01.023
- Fraser IS, Critchley HO, Munro MG. Abnormal uterine bleeding: getting our terminology straight. *Curr Opin Obstet Gynecol*. 2007;19(6):591-595. doi:10.1097/01.aids.0000299801.42415.8a
- Munro MG. *Abnormal Uterine Bleeding*. Cambridge: Cambridge University Press; 2010.
- Fraser IS, Langham S, Uhl-Hochgraeber K. Health-related quality of life and economic burden of abnormal uterine bleeding. *Expert Rev Obstet Gynecol*. 2009;4(2):179-189. doi:10.1586/17474108.4.2.179
- Harlow SD, Campbell OM. Epidemiology of menstrual disorders in developing countries: a systematic review. *BJOG*. 2004;111(1):6-16. doi:10.1111/j.1471-0528.2004.00012.x
- Shapley M, Jordan K, Croft PR. An epidemiological survey of symptoms of menstrual loss in the community. *Br J Gen Pract*. 2004;54(502):359-363.
- Frick KD, Clark MA, Steinwachs DM, et al. Financial and quality-of-life burden of dysfunctional uterine bleeding among women agreeing to obtain surgical treatment. *Womens Health Issues*. 2009;19(1):70-78. doi:10.1016/j.whi.2008.07.002
- Sun Y, Wang Y, Mao L, Wen J, Bai W. Prevalence of abnormal uterine bleeding according to new International Federation of Gynecology and Obstetrics classification in Chinese women of reproductive age: a cross-sectional study. *Medicine (Baltimore)*. 2018;97(31):e11457. doi:10.1097/md.00000000000011457
- Barr RD, Saleh M, Furlong W, et al. Health status and health-related quality of life associated with hemophilia. *Am J Hematol*. 2002;71(3):152-160. doi:10.1002/ajh.10191
- Munro MG, Critchley HO, Broder MS, Fraser IS. FIGO classification system (PALM-COEIN) for causes of abnormal uterine bleeding in nongravid women of reproductive age. *Int J Gynaecol Obstet*. 2011;113(1):3-13. doi:10.1016/j.ijgo.2010.11.011
- Von Mackensen S. Quality of life in women with bleeding disorders. *Haemophilia*. 2011;17 Suppl 1:33-37. doi:10.1111/j.1365-2516.2011.02563.x
- Rae C, Furlong W, Horsman J, et al. Bleeding disorders, menorrhagia and iron deficiency: impacts on health-related quality of life. *Haemophilia*. 2013;19(3):385-391. doi:10.1111/hae.12014
- Al-Quaiz JM. Iron deficiency anemia. A study of risk factors. *Saudi Med J*. 2001;22(6):490-496.
- Sobande AA, Eskandar M, Archibong EI, Damole IO. Elective hysterectomy: a clinicopathological review from Abha catchment area of Saudi Arabia. *West Afr J Med*. 2005;24(1):31-35. doi:10.4314/wajm.v24i1.28159
- National Collaborating Centre for Women's and Children's Health. *Heavy Menstrual Bleeding*. London: RCOG Press; 2007.
- Abu-Rafea BF, Vilos GA, Al Jasser RS, Al Anazy RM, Javaid K, Al-Mandeel HM. Linguistic and clinical validation of the Arabic-translated Aberdeen Menorrhagia Severity Scale as an indicator of quality of life for women with abnormal uterine bleeding. *Saudi Med J*. 2012;33(8):869-874.
- Singh S, Best C, Dunn S, Leyland N, Wolfman WL. Abnormal uterine bleeding in pre-menopausal women. *J Obstet Gynaecol Can*. 2013;35(5):473-475. doi:10.1016/s1701-2163(15)30939-7
- de Souza SS, Camargos AF, Ferreira MC, et al. Hemoglobin levels predict quality of life in women with heavy menstrual bleeding. *Arch Gynecol Obstet*. 2010;281(5):895-900. doi:10.1007/s00404-009-1207-9
- McKay H, Derome F, Haq MA, et al. Bleeding risks associated

- with inheritance of the Quebec platelet disorder. *Blood*. 2004;104(1):159-165. doi:10.1182/blood-2003-11-4077
20. Pai M, Liu Y, Whittaker S, et al. Gender differences in bleeding problems and implications for the assessment of a bleeding disorder. *Blood*. 2007;110(11):2148. doi:10.1182/blood.V110.11.2148.2148
  21. Valberg LS, Sorbie J, Ludwig J, Pelletier O. Serum ferritin and the iron status of Canadians. *Can Med Assoc J*. 1976;114(5):417-421.
  22. Kadir RA, Sabin CA, Pollard D, Lee CA, Economides DL. Quality of life during menstruation in patients with inherited bleeding disorders. *Haemophilia*. 1998;4(6):836-841. doi:10.1046/j.1365-2516.1998.00208.x
  23. Karlsson TS, Marions LB, Edlund MG. Heavy menstrual bleeding significantly affects quality of life. *Acta Obstet Gynecol Scand*. 2014;93(1):52-57. doi:10.1111/aogs.12292
  24. Xu L, Lee BS, Asif S, Kraemer P, Inki P. Satisfaction and health-related quality of life in women with heavy menstrual bleeding; results from a non-interventional trial of the levonorgestrel-releasing intrauterine system or conventional medical therapy. *Int J Womens Health*. 2014;6:547-554. doi:10.2147/ijwh.s57470
  25. Shankar M, Chi C, Kadir RA. Review of quality of life: menorrhagia in women with or without inherited bleeding disorders. *Haemophilia*. 2008;14(1):15-20. doi:10.1111/j.1365-2516.2007.01586.x
  26. Coulter A, Peto V, Jenkinson C. Quality of life and patient satisfaction following treatment for menorrhagia. *Fam Pract*. 1994;11(4):394-401. doi:10.1093/fampra/11.4.394

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