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Comparison of Quality of Life of Students with Menorrhagia and Non Menorrhagia in Faculty of Medicine Unsyiah

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KEYWORDS
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ABSTRACT
This study investigates the impact of menorrhagia, a condition characterized by excessive menstrual bleeding exceeding 80 ml per cycle, on the quality of life among students in the Faculty of Medicine at Unsyiah. Menorrhagia has a multifactorial aetiology and can significantly affect women's daily activities due to excessive bleeding. This research compares the quality of life between students suffering from menorrhagia and those who do not. The study utilizes an analytical observational approach with a cross-sectional design, employing non-probability total sampling techniques. Data were collected using the Pictorial Bleeding Assessment Chart (PBAC), Visual Analog Scale (VAS), and the Short Form 36 Quality of Life (SF-36) questionnaire. Statistical analysis was conducted using the Chi-Square test, yielding the following p-values: 0.054 for physical function, 0.573 for physical role, 0.944 for pain, 0.944 for general health, 0.600 for vitality/energy, 0.024 for social function, 0.976 for emotional role, 0.844 for mental health, and 0.214 for overall quality of life across eight dimensions. The results indicate no significant difference in the quality of life between students with and without menorrhagia, except in the social function dimension ($p = 0.024$). Overall, the study concludes that menorrhagia does not significantly impact the quality of life of affected students compared to their peers without the condition, except for social functioning.

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INTRODUCTION

Adolescence, according to the WHO (World Health Organization), is a period of growth and development in a transitional period that occurs at the age of 10-19 years, or it can be said before reaching adulthood. The Indonesian Ministry of Health classifies adolescent age limits, namely, the age of 12-16 years for early adolescents and the age of 17-25 years for late adolescents (Wantania, 2016). In this adolescent phase, changes occur, both in physical, psychological and mature reproductive organs. Menarche, or first menstruation, is an important sign in adolescent girls as the biological maturity of the reproductive organs (Habiba et al., 2021).

Menstruation or menstruation is periodic and cyclical bleeding from the uterus or characterized by the event of shedding (desquamation) of the endometrial lining of the uterus. Every adolescent girl has a different menstrual cycle; in early adolescence, it is still possible that the menstrual cycle is not fully regular (Utomo et al., 2024). The volume of blood released during menstruation reaches 30-40 ml

per day. Menstrual bleeding that exceeds 80 ml per day is called menorrhagia (Levy-Zauberman et al., 2017).

Epidemiological studies report that menorrhagia affects a wide range of female individuals, with data of 8-27% on average at reproductive age. Menorrhagia is also influenced by geography and cultural background; studies have been conducted with age-restricted samples of adult women, and the prevalence of menorrhagia is increasing (Bandi et al., 2016). Menorrhagia is a major problem in 50-70% of women in the United Kingdom and the United States. A study in Sweden in 2014 showed that 32% of women experienced heavy menstrual bleeding, 39% with normal menstrual blood loss, 15% with mild menstrual blood loss, and 14% without menstruation. The study in Japan, with a sample of 19,254 women who had menstruated, 74% of whom experienced menstrual pathological symptoms, reported 50% of dysmenorrhea and 19% of severe menstrual bleeding (Pedlar et al., 2020). In developing countries, the incidence of menorrhagia is found to be 5-15% by women of reproductive age. In Indonesia, and especially in Aceh Province, there is no specific data on menorrhagia cases, but it is also not realized that menorrhagia cases may be experienced by most women in Aceh Province, but data collection is not carried out by the local health office.

Each woman has different risk factors that can trigger the occurrence of menorrhagia, these risk factors are considered to be influential, including the age of women over 35 years old, anovulatory menstrual cycles, obesity, nullipara and nutritional intake (Levy-Zauberman et al., 2017). This can affect the quality of life if the woman has menorrhagia. Menorrhagia can interfere with women physically, socially, and emotionally. In addition, menorrhagia can also interfere with her daily activities because the woman may need to change sanitary napkins regularly and have anxious feelings about social activities (Sheikh et al., 2023). Abnormal uterine bleeding that lasts for a long time will also cause the woman to experience anemia due to this event.

The novelty of this study stems from its focus on a population and region (Aceh) where menorrhagia remains largely undocumented. While global studies have shed light on the prevalence of menorrhagia in Western and Asian contexts, the unique cultural, nutritional, and healthcare factors influencing the condition in Aceh remain unexplored. This research aims to not only document the prevalence of menorrhagia in Aceh but also examine the specific risk factors that contribute to the condition in this region, such as anovulatory menstrual cycles, obesity, nulliparity, and inadequate nutritional intake. By addressing these factors, the study will provide valuable insights into managing and treating menorrhagia, contributing to improved health outcomes for women in Aceh.

Seeing this situation impact the quality of life of a woman, the researcher is interested in conducting research on female students of the Faculty of Medicine, Syiah Kuala University (Andriany et al., 2022). The respondents of this study are female students in the 2018 class because academic activities tend to differ from the previous level. This difference in academic activities can affect the lifestyle of each of these individuals because of the dense lecture schedule by studying the material in the clinical block, an effect caused by menorrhagia can affect the personal, social, family, and productivity of women, which will have an impact on their quality of life. Therefore, this research aims to compare the quality of life of female students with menorrhagia and non-menorrhagia at the Faculty of Medicine, Unsyiah. The findings of this study are expected to provide valuable insights into the impact of menorrhagia on the well-being of female students, which can inform better healthcare support and intervention strategies within educational institutions.

METHOD

This study uses a type of observational analytical research and a research design with a cross-sectional approach survey or cross-sectional approach to see the comparison between variables with measurements taken once at the same time (Wang & Cheng, 2020).

The sampling technique in this study is non-probability sampling with total sampling. The population and sample in this study are all Unsyiah Medical Education students, class of 2018, who have met the inclusion criteria and are not included in the exclusion criteria.

The instruments used are the Pictorial Bleeding Assessment Chart (PBAC) to assess the volume of menstrual bleeding, the Visual Analog Scale (VAS) to assess menstrual pain, and the SF-36 (Short Form) Quality of Life Questionnaire to assess the quality of life. Types of menorrhagia scales, menstrual pain, and quality of life are nominal (Groen et al., 2017). The data was analyzed using a statistical test, namely the Chi-Square test.

RESULT AND DISCUSSION

Sampling was carried out in Building F, Faculty of Medicine, Syiah Kuala University. The research was carried out from September 12 to September 23, 2019. All female students participated in the study, with a total of 102 female students who had met the inclusion and exclusion criteria.

The characteristics of the respondents in the study were grouped based on age, degree of menstrual pain, family history with menorrhagia, and family history with bleeding disorders. The data on the distribution of respondent characteristics are presented in Table 1.

Table 1.
General characteristics of respondents

Characteristics of Respondents	Frequency (n)	Percentage (%)
Age:		
17 years	2	2
18 years	24	23,5
19 years	57	55,9
20 years	15	14,7
21 years	4	3,9
Degree of Menstrual Pain:		
No Pain	6	5,9
Light	50	49
Keep	32	31,4
Heavy	14	13,7
Family History with Menorrhagia:		
Yes	13	12,7
Not	89	87,3
Family History with Bleeding Disorders:		
Yes	6	5,9
Not	96	94,1
Total	**102**	**100,0**

Based on the results of the research that has been obtained show that the dominance of the age of the respondents is 19 years old, with a total of 57 female students (55.9%). A total of 6 female students (5.9%) did not complain of menstrual pain, 50 female students (49%) complained of mild menstrual

pain, 32 female students (31.4%) complained of moderate menstrual pain, and 14 female students (13.7%) complained of severe menstrual pain. Respondents in the study who had a family history of menorrhagia amounted to 13 female students (12.7%) and a family history of bleeding disorders, which amounted to 6 female students (5.9%). As presented in Table 1.

The results of the study on 102 female students with an age gap of about 17-21 years showed that the dominant female student's age was 19 years old. Where age is one of the factors that can affect menstrual disorders related to the age of respondents who are still under 25 years old and will often experience menstrual disorders, this is caused by the anovulatory cycle that is often experienced in the adolescent group. In adolescence, there is a process of maturation of the endocrine system that will affect the performance of the axial ovarian hypothalamus with the time of maturity, which varies from individual to individual. As you get older, menstrual disorders will decrease. A study that has been conducted by Riris Novita (2018) with a total of 98 high school students found that 27 of them experienced changes in the amount of menstrual blood volume or menorrhagia.US$ 13

A total of 102 female students were used as research samples: female students who experienced menstrual pain with mild degrees 50 (49%), moderate degrees 32 (31.4%), and severe degrees 14 (13.7%). Dysmenorrhea or menstrual pain is classified into 2 categories: primary dysmenorrhea is menstrual pain in the absence of a pathological state in the pelvis and the presence of prostaglandins produced by the endometrium in the secretory phase (Friederich, 2017). The initial incidence of primary dysmenorrhea usually occurs within 6-12 months after menarche, with the duration of pain caused generally 8 to 72 hours when menstruation takes place. Secondary dysmenorrhea is menstrual pain caused by the presence of various pathological conditions in the female reproductive organs, namely endometriosis, adenomyosis, uterine myoma, cervical stenosis, pelvic inflammatory disease, or irritable bowel syndrome (Jiang, 2024).

In 13 (12.7%) female students had a family history of menorrhagia, while female students who did not have a family history of menorrhagia amounted to 89 (87.3%) respondents. In genetics, family history can be interpreted as genetic factors and a history of diseases in the family. A family history of illness identifies a person as having a higher risk of developing a disease. A study was conducted by Natalia Kuzmina et al (2011) on 208 patients at Karolinska University Hospital Solna, Stockholm, Sweden. In the group with idiopathic menorrhagia, totaling 152 women, 90 (59%) of them had a family history of experiencing menorrhagia, while in the group without menstrual disorders, which amounted to 56 women, 8 (14%) of them had a family history of experiencing menorrhagia.US$ 16

Female students with a family history of bleeding disorders amounted to 6 (5.9%) female students, while female students who did not have a family history of bleeding disorders amounted to 96 (94.1%) female students. Bleeding disorders are classified into two main categories, namely, coagulation deficiency factors and platelet disorders (Jain & Acharya, 2018). Hemostasis in the endometrium during the menstrual cycle has a close relationship with platelets and fibrin. The thrombin formation forms plugs and is followed by vasoconstriction so that normal hemostasis is formed, but in certain bleeding disorders, there is a deficiency of these components that causes menorrhagia. A study that has been conducted on 60 respondents at Kocaeli University Hospital, Turkey, found that 12 (20%) patients were detected with bleeding disorders, which included 1 case of type 3 von Willebrand disease, 2 patients with low von Willebrand factor antigen, 1 case of von Willebrand disease which is still unclear in patients, 3 cases of Bernard-Soulier syndrome, 2 cases of Glanzmann thrombasthenia, 2 cases of idiopathic thrombocytopenic purpura, and 1 case of factor VII deficiency congenitally.US$ 18

The frequency distribution based on menstrual bleeding of female students at the Faculty of Medicine Unsyiah is presented in Table 2.

Table 2.
Distribution of menstrual bleeding

PBAC*	Number (n)	Percentage (%)
Menorrhagia	54	52,9
No menorrhagia	48	47,1
Total	**102**	**100,0**

***PBAC (Pictorial Bleeding Assessment Chart)**

The results obtained show that respondents who experience menorrhagia are more than half of the population, namely 54 female students (52.9%), as presented in Table 2.

Frequency distribution based on the description of the quality of life of female students at the Faculty of Medicine Unsyiah is presented in Table 3.

Table 3.
Quality of Life of Female Students with Menorrhagia and Non-Menorrhagia

Quality of Life Dimension	Characteristics of Menstrual Disorders							
	Menorrhagia				Non-Menorrhagia			
	Good	%	Bad	%	Good	%	Bad	%
Physical Function	50	92,6	4	7,4	48	100,0	0	0
Physical role	49	90,7	5	9,3	45	93,8	3	6,3
Pain	47	87,0	7	13,0	42	87,5	6	12,5
General health	47	87,0	7	13,0	42	87,5	6	12,5
Vitality/energy	48	88,9	6	11,1	41	85,4	7	14,6
Social function	46	85,2	8	14,8	47	97,9	1	2,1
The role of emotions	44	81,5	10	18,5	39	81,3	9	18,8
Mental health	49	90,7	5	9,3	43	89,6	5	10,4

The results of the study that have been obtained show that the quality of life reviewed from the physical function dimension in female students with menorrhagia and non-menorrhagia is good (92.6% vs 100%), as well as the quality of life of female students with menorrhagia and non-menorrhagia which is reviewed from the physical role dimension are also good (90.7% vs 93.8%). Female students with menorrhagia and non-menorrhagia, when viewed from the quality of life in terms of pain dimension and general health dimension, are not much different (87% vs 87.5%), as well as the vitality/energy dimension in female students with menorrhagia and non-menorrhagia (88.9% vs 85.4%). Female students with menorrhagia with a quality of life based on the dimension of the social function obtained poor quality, while non-menorrhagia students obtained a good quality of life (85.2% vs 97.9%). The quality of life of female students with menorrhagia and non-menorrhagia in terms of emotional role dimensions was good (81.5% vs 81.3%), and the quality of life in terms of mental health dimensions in female students with menorrhagia and non-menorrhagia-was-also-good (90.7% vs 89.6%) as presented in table 3.

Table 4.
Comparison of Quality of Life of Female Students with Menorrhagia and Non-Menorragia at the Faculty of Medicine.

Quality of Life Dimension	Characteristic								P *value*	OR (95% CI)
	Menorrhagia				Non-Menorrhagia					
	Good	%	Bad	%	Good	%	Bad	%		
Physical Function	50	92,6	4	7,4	48	100,0	0	0	0,054	0,926
Physical role	49	90,7	5	9,3	45	93,8	3	6,3	0,573	1,531
Pain	47	87,0	7	13,0	42	87,5	6	12,5	0,944	1,043
General health	47	87,0	7	13,0	42	87,5	6	12,5	0,944	1,043
Vitality/energy	48	88,9	6	11,1	41	85,4	7	14,6	0,600	0,732
Social function	46	85,2	8	14,8	47	97,9	1	2,1	0,024*	8,174
The role of emotions	44	81,5	10	18,5	39	81,3	9	18,8	0,976	0,985
Mental health	49	90,7	5	9,3	43	89,6	5	10,4	0,844	0,878
Average 8 Dimensions	50	92,6	4	7,4	47	97,9	1	2,1	0,214	3,760

Based on the results obtained from the research that has been analyzed with the Chi-Square test, it shows that the p-value in the dimensions of physical function, physical role, pain, general health, vitality/energy, emotional role, mental health, and average result of 8 dimensions of quality of life has a value of $p>0.05$. In the dimension of social function, $p = 0.024$ ($p<0.05$). The probability value (p-value) is the amount of value to determine whether or not there is a difference between the dependent variable and the independent variable of a study, Table 4 shows that the p-value is greater than the reference p-value value ($p>0.05$) which means that there is no significant difference between the dependent and independent variables in this study.

Research conducted by Shankar et al. (2019) in London, United Kingdom, by reviewing evaluation studies of the quality of life of women suffering from menorrhagia, this systematic review shows that the quality of life in people with menorrhagia is poor, generally in women with inherited bleeding disorders. Research conducted by Kadir RA et al. (2022) in London, United Kingdom, shows that menorrhagia is rarely life-threatening, but menorrhagia will have a negative impact on women's personal, family, social, and work life and reduce their quality of life.

The results of this study, which used the SF-36 Quality of Life instrument to assess the quality of life of female students suffering from menorrhagia, showed that out of 8 dimensions, only 1 dimension was affected, namely the dimension of social function and was no significant difference in the quality of life dimension for the non-menorrhagia group. This is in line with a study conducted by Sule Gokyildiz et al (2013) on 295 respondents in Istanbul, Turkey, the group with menorrhagia was 138 women (46.8%), while the non-menorrhagia group was 157 women (53.2%) and there was no significant difference between the two groups in terms of health and general health problems related to the quality of life. However, in a study conducted by Trine S. Karlsson et al (2014) in Stockholm, Sweden, with a total of 1049 respondents, it was found that 472 women (45%) experienced menorrhagia and 577 women (55%) who were non-menorrhagia, from the results of the study women with menorrhagia and non-menorrhagia, were found to have all components of the quality of life dimension were significantly influenced by the condition of menorrhagia. Reviewing the impact of menorrhagia, a study conducted by Vineet Mishra et al (Perez et al., 2019) in Gujarat, India, with 90 respondents

suffering from menorrhagia, 55% of whom had iron deficiency anemia, made the respondents must be given Ferric carboxymaltose adequately to increase hemoglobin levels and iron reserves in the blood.

A person's quality of life can be affected by various factors, one of which is health conditions. Health conditions are aspects that contribute quite a bit to a person's quality of life. Physical functions affect emotional function, and there is a close link between these functions and the assessment of quality of life (Seidel et al., 2014). Research conducted by Winny Wishwadewa et al. (2022) at Cipto Mangunkusumo Hospital, Jakarta, shows that the more activities are carried out, the more emotional function will increase and have a positive impact on the quality of life; in other words, the quality of life will increase. The better the emotional function, the better the quality of life. A good aspect of emotional function will make a person more confident and not easily anxious, especially if the physical activity carried out is balanced, the quality of life will be better. Research conducted by Daniel Nugraha Aji et al (2017) at Cipto Mangunkusumo Hospital, Jakarta, on patients with thalassemia major explained that the quality of life is also influenced by a person's ability to participate in peer groups, family, and neighbors, as well as the ability to compete according to a person's level of development. Interpersonal conditions can also affect aspects of social function, including social relationships in the family and peers. It can be stated that good social function will increase the value of quality of life, while disruption of social function will affect the low quality of life.US$ 24

After conducting research, the majority of respondents did not know what could cause menstrual disorders, one of which was menorrhagia. For laymen, it is certainly not easy to determine the amount of bleeding released during menstruation, but it is possible to pay attention to certain indications, such as the large number of pads spent or the frequency of menstrual blood that penetrates clothes because they are not accommodated by pads, and can be through the Pictorial Blood Assessment Chart (PBAC). Menstruation is considered heavy if the woman has to change pads every hour or several hours in a row; other symptoms of excessive menstruation can include bleeding at night that makes you wake up to change pads and the presence of large blood clots during menstruation. Short or prolonged duration during menstruation is not important in diagnosing menorrhagia because menorrhagia can also occur during short menstrual duration as well (Zia & Rajpurkar, 2016).

CONCLUSION

There was no significant difference in the quality of life between female students with menorrhagia and those without at the Faculty of Medicine, Unsyiah. This finding suggests that factors beyond the presence of menorrhagia may influence students' overall quality of life. Future research should explore additional variables, such as stress levels, access to medical care, and coping mechanisms, to better understand the broader factors affecting the quality of life in this population.

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