

Menstrual Cycle Disorders in Adolescents

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ABSTRACT

Adolescence is an important transition period for women's reproductive health, characterized by a variety of physiological changes including the menstrual cycle. Menstrual cycle disorders, such as dysmenorrhea, oligomenorrhea, and amenorrhea, are common and can affect the quality of life of adolescent girls. This study aims to analyze the prevalence, risk factors, and impact of menstrual cycle disorders in adolescents in Indonesia through a literature reflection of articles published between 2019 and 2024. The results showed that about 67.8% of adolescent girls experienced at least one type of menstrual disorder, with dysmenorrhea being the most common complaint. Factors that affect this disorder include physical activity, stress levels, nutritional status, and body mass index. This research is expected to provide a scientific basis for the development of more effective prevention and treatment strategies for menstrual cycle disorders in adolescents.

Keywords: menstrual cycle disorders, adolescent women, risk factors

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INTRODUCTION

Adolescence is a critical transition period in a woman's life that is characterized by various physiological changes, including the onset of menstruation or menarche (Nessi Meilan et al., 2019). Regular menstrual cycles are an important indicator of adolescent girls' reproductive health, but menstrual cycle disruptions often occur during this period and can significantly affect their quality of life (Novita, 2018). The World Health Organization (WHO) reports that about 75% of adolescent girls in the world experience menstrual problems, with 15% of them experiencing disorders that require medical treatment (Syamsuryanita & Ikawati, 2022).

In Indonesia, the prevalence of menstrual disorders in adolescent girls is quite high, with various manifestations such as dysmenorrhea (menstrual pain), oligomenorrhea (long menstrual cycle), polymenorrhea (short menstrual cycle), and amenorrhea (not having a period) (Ristiani, 2023). Research conducted by Ridwan & Fibrila, (2024) showed that 67.8% of adolescent girls in Indonesia experienced at least one type of menstrual disorder, with dysmenorrhea as the most common complaint (55.3%).

Various studies have identified factors that contribute to menstrual cycle disorders in adolescents, including genetic, hormonal, nutritional status, physical activity, psychological stress, and lifestyle factors (Sequeira et al., 2024). A comprehensive understanding of these factors is essential for the development of effective prevention and treatment strategies. However, research that systematically examines the prevalence, factors and risks of menstrual cycle disorders in adolescents in Indonesia is still limited.

Menstrual cycle disruption in adolescent girls is a significant health problem and has a long-term impact on quality of life and reproductive health (Awa et al., 2024). The urgency of this research lies in the high prevalence of menstrual disorders among Indonesian adolescents, which can affect their daily activities, academic achievement, and psychological well-being. Although various causative factors have been identified, research that examines the prevalence,

risk factors, and approaches to handling menstrual cycle disorders in Indonesia is still limited. Given that adolescence is a critical period in the development of reproductive health, a deeper understanding is essential to devise effective prevention strategies.

The novelty of this study is its more comprehensive and systematic approach in exploring the prevalence and risk factors of menstrual cycle disorders among adolescent girls in Indonesia. This research will also examine the variation of causative factors based on demographic and geographical characteristics, providing a deeper and more specific understanding of the local context.

The benefits of this research include increasing public and adolescent awareness about the importance of maintaining reproductive health. In addition, the results of this study are expected to be a reference for the government and health workers in designing education programs and interventions that are more targeted. Thus, this research not only contributes to the academic literature, but also has a direct impact on improving the quality of life of adolescent girls in Indonesia.

METHOD

This study uses a literature review study method to examine menstrual cycle disorders in adolescent girls in Indonesia. Review literature studies were chosen because they allow researchers to collect, analyze, and synthesize a variety of relevant sources and research to provide a comprehensive overview of the topic being researched (Wahyudin & Lindawati, 2024).

Type of Research

This type of research is qualitative descriptive with an analytical approach to various literature and previous research. This approach aims to identify risk factors, the prevalence of menstrual cycle disorders, and treatment strategies that have been implemented.

Research Design

The design of this study uses a systematic design, where researchers collect data from various scientific journals, research reports, books, and reliable publications related to menstrual cycle disorders in adolescents. This design includes the stages of literature collection, selection based on relevance and quality, content analysis, and preparation of results in the form of scientific narratives.

Data Collection Techniques

Data collection is carried out through:

1. Primary Sources – International and national journals that discuss menstrual cycle disorders in adolescent girls.
2. Secondary Sources – Books, reports of health organizations such as WHO and BKKBN, as well as scientific articles relevant to the research topic.
3. Electronic Databases – Literature searches are conducted through national and international databases.

Data Analysis

The data was analyzed using a content analysis approach, where researchers categorized the results of previous research into several main themes, such as the prevalence of menstrual disorders, risk factors (genetic, hormonal, and lifestyle), and the impact of menstrual disorders on adolescent life. The results of the analysis are prepared in a narrative manner to provide a comprehensive and structured picture of the problem of menstrual cycle disorders in Indonesia.

RESULTS AND DISCUSSION

Menstrual cycle disorders are a common problem experienced by adolescent girls during the reproductive period. At the beginning of menstruation, cycle irregularities often occur due to a hormonal system that has not fully matured. Normal menstrual cycles range from 21-35 days, with an average of

28 days (Mahmudah, 2022). However, in the first 2-3 years after menarche, the cycle variation can be wider due to the immaturity of the hypothalamic-pituitary-ovarian axis (Husniawati et al., 2024).

1. Dysmenorrhea

According to WHO, the incidence of dysmenorrhea in the world was very high in 2018 (Wariyah et al., 2019). On average, more than 50% of women in each country suffer from dysmenorrhea, in the United States the percentage is about 60%, in Sweden about 72%, and in the United Kingdom a study found that about 10% of female students skip school for 1 to 3 days every month due to menstrual pain (Chayati & Na'mah, 2019). Menstrual dysmenorrhea is divided into 2 types, namely primary dysmenorrhea and secondary dysmenorrhea. Primary dysmenorrhea is known as PMS (primary dysmenorrhea) and does not have a specific pathology, experienced by adolescent women at 6 months to 2 years of the menstrual period. Meanwhile, secondary dysmenorrhea has specific pathophysiological causes, for example in the presence of fibromyomas and endometriosis 12. The term dysmenorrhea comes from the "Greek" language, namely dys (disorder or severe pain or abnormality), meno (moon) and rrhea which means flow or flow. So dysmenorrhea is pain in the area around the pelvis due to menstruation and the production of prostaglandins (Azzahra et al., 2023).

2. Amenorea

It is a condition in which a woman does not experience menstruation. The World Health Organization (WHO) estimates that the incidence of amenorrhea in adolescents is 10-15%, while in developed countries such as the Netherlands, the percentage of amenorrhoe is quite large, which is 13%. The incidence of amenorrhea in Indonesia is quite high. According to a survey conducted by the Ministry of Health on several schools in Indonesia in 2008. The results were 17,665 adolescent girls, 6,855 who had problems with their periods (40%). Primary amenorrhea is when menstruation does not occur at age 16 when accompanied by normal secondary sexual development, or at age 14 when it is not accompanied by secondary sexual development (Dayana & Rahmat, 2024).

3. Oligomenore

Oligomenosphere is a menstrual disorder that is often caused by one of them, hormonal imbalances, many factors that can affect such as lifestyle, activity level, and maybe even family history (Nur et al., 2022). According to the World Health Organization (2019) on average more than 75% of women experience menstrual cycle disorders (Lusiana Itha Dwi, 2023). In Indonesia, based on data, the percentage of menstrual cycle disorders at the age of 10-29 years is 31.6%. Menstrual cycle disorders are estimated to be oligomenorrhea 50% (Martini et al., 2022). Just before menstruation ends, women will experience irregular menstrual cycle changes. These changes can lead to longer or shorter menstrual cycles. The level of bleeding can also vary, it can be little or a lot. Heavy bleeding occurs due to a sudden increase in progesterone levels. In order for progesterone levels in perimenopausal women to be higher than normal, the cervical membrane dilates. As a result, the bleeding becomes abundant and suddenly accumulates (Nur et al., 2022).

4. Polymerae

Polymerae is a condition in which menstrual cycles are separated by less than 21 days (Sari, 2020). In the research Santi & Personal, (2018) Obtaining a prevalence of polymenorrhea of 10.5% of 89.5% of adolescents with menstrual cycle disorders. Polymerae can be caused by endocrine abnormalities that cause ovulation disorders and shortening luteal phases (Ilham et al., 2023).

5. Hypermenorrhea

Hypermenorrhea (menoragia) 15 Menoragia is menstrual bleeding with a blood volume or duration longer than normal with a normal regular cycle. Clinically, menoragia is defined as a total amount of menstrual blood of more than 80 ml per cycle and a menstrual duration longer than 7 days (Antina et al., 2023). The average adolescent girl who has hypermenorrhea disorder is around 5%. Hypomenorea Hypomenorea is menstrual bleeding with a smaller amount or a shorter or more than normal duration (Fathona, 2021).

Factors that Affect the Menstrual Cycle

According to Ilmi & Sebasmi, (2019) There are several factors that cause menstrual cycle disruption, namely:

1. Physical activity

Physical activity is divided into three levels, namely light, moderate, and heavy physical activity. Light activity is where everything related to moving the body, for example studying, reading books or novels, walking and playing (friends' houses). Then, moderate physical activity is the movement of the body which causes a considerable expenditure of energy so that it causes breathing a little faster than usual, for example, running exercises, feathers, going up and down stairs, washing dishes, and organizing at school or campus. Heavy physical activity is body movement that causes the expenditure of energy to burn quite a lot of calories, so that breathing will be much faster than usual, for example by cleaning the vehicle, washing clothes, cleaning the room, cleaning the toilet, ironing clothes, cleaning the house (sweeping, mopping, and cleaning the dust) (Maulia, 2022).

Physical activity with high or low intensity, can affect menstrual cycle irregularities. Where, if physical activity with high intensity can affect FSH and LH hormones. This is what causes menstrual cycle irregularities. Then, low-intensity physical activity can affect oxidative energy reserves. Where, this oxidized energy is needed for the reproductive process. This is what can cause menstrual cycle irregularities (Yolandiani et al., 2021).

Physical activity with heavy intensity can cause physiological disorders of the menstrual cycle. The disorders that occur are the absence of menstruation (amenorrhea), abnormal growth of the uterine wall, infertility, irregular menstruation or intermenstrual bleeding, and bone thinning (osteoporosis). Then, fatigue due to increased activity also increases the delay of menstruation and is even accompanied by pain (dysminorea) The resulting fatigue affects the release of eggs (ovulation) (Dzia, 2021).

2. Stress levels

Stress is a physical or psychological reaction to demands that trigger tension and will disrupt the stability of life and will affect the body's hormonal system. One of the impacts is a change in the menstrual cycle (Fransiska et al., 2017). The level of stress will affect the menstrual cycle, because the center of stress in the brain is very close to the regulation of the menstrual cycle in the brain (Hayati et al., 2017). Stress levels are divided into 3 (Sulaksmi, 2019) that is:

- a. Mild stress is stress that does not damage a person's physiological aspects that are generally felt and faced by people on a regular basis such as mostly sleep, forgetfulness, criticism, and congestion. Where, this situation usually ends in a few minutes or a few hours and will not cause illness unless faced continuously.
- b. Moderate stress is stress that occurs longer than a few hours to a few days, for example during disputes, due to overwork, unfinished agreements, family problems, and expecting a new job. Where, this citation can affect a person's health condition.
- c. Severe stress is chronic stress that occurs for several weeks to several years, caused by several factors such as financial difficulties, long-term physical illness, and disharmonious environmental relationships (friends, husband and wife, parents, family).

3. Nutritional status

In adolescents, it is necessary to maintain a good nutritional status by consuming a balanced diet because it will be needed during menstruation. During menstruation in the luteal phase, there will be an increase in nutritional needs. Limited or insufficient nutrition will cause disruption of reproductive function, organ function and growth. If the nutritional intake is good, it will not have an impact on menstrual disorders. However, if the nutritional intake is not good, it will cause complaints by feeling discomfort during the menstrual cycle (Berliana & Aslina, 2017).

4. Body Mass Index (BMI)

Body Mass Index (BMI) is a measurement for the proportional body in measuring the percentage of fat present in the body. But not to measure fat percentage, but to identify weight problems, which are used to estimate a healthy weight, according to height. BMI can affect the menstrual cycle through the role of the hormone estrogen excessive calories and spikes resulting from body gain which can contribute to an increase in estrogen in the blood, thus disrupting the menstrual cycle (Ony Tony & Heatubun, 2023).

CONCLUSION

Based on the results and discussion, this study shows that menstrual cycle disorders are a significant health problem among adolescent girls in Indonesia. The high prevalence indicates the need for more attention to adolescent reproductive health. Factors such as physical activity, stress, nutritional status, and body mass index contribute to menstrual cycle irregularities. Therefore, it is important to develop evidence-based intervention programs that can help prevent and address these disorders. Further research is needed to better understand the mechanisms that regulate menstrual cycle disorders and to formulate appropriate health policies to improve the quality of life of adolescent girls.

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