



## The Severity of Primary Dysmenorrhea among Middle Adolescent Students at Public Senior High School 5 Surakarta: An Overview

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### A B S T R A C T

Dysmenorrhea refers to the experience of pain resulting from uterine cramps during menstruation. Typically, this pain arises at the start of the menstrual cycle and persists for several hours or even days until it reaches its highest intensity. The prevalence of primary dysmenorrhea is highest among individuals aged 15 to 25 during their late teenage years and early adulthood. This research provides an overview of the severity of primary dysmenorrhea among mid-adolescent students. This paper is an analytical observational research design with a cross-sectional approach. The target population comprised 578 female students aged fifteen to eighteen enrolled in Public Senior High School 5 Surakarta. The sample was 139 respondents by simple random sampling technique. Data analysis used the mean score method, and the research instrument utilized the NRS (Numeric Rating Scale) questionnaire. The results demonstrated the average age of the respondents was 16 years old. In addition, menarche, menstrual duration, and menstrual cycle were within the normal range, with menarche occurring at 12 years old, a menstrual duration of 6 days, and a menstrual cycle of 28 days. Furthermore, the mean dysmenorrhea pain scale in respondents was 4.89. In summary, most female students at Public Senior High School 5 Surakarta experienced primary dysmenorrhea but were still able to manage the pain during their daily activities.

## INTRODUCTION

There are various disorders during menstruation, one of which is dysmenorrhea. Dysmenorrhea occurs when menstruation begins and lasts for several hours to several days until it reaches its peak. Solid and regular contractions of the uterine walls, as well as the presence of high levels of prostaglandin hormones, are the cause of dysmenorrhea (Larasati, T. A. and Alatas, 2016; Ferries-Rowe, Corey and Archer, 2020; Kho and Shields, 2020; McKenna and Fogleman, 2021).

According to the World Health Organization (WHO), in 2013, as stated in Syafriani's (2021) research, dysmenorrhea occurred in approximately 1,769,425 women worldwide, with about 10-15% experiencing severe dysmenorrhea. In Indonesia, the prevalence of dysmenorrhea reached 60-70%, with a primary dysmenorrhea incidence rate of 54.89% and a secondary dysmenorrhea rate of 45.11% (Wahyuni & Zulfahmi, 2021). Furthermore, dysmenorrhea incidence among high school-age adolescents in Surakarta was 67% (Noviandari and Winarni, 2015).

The peak occurrence of dysmenorrhea happens during late adolescence to early adulthood, with an age range of 15 to 25 years (Sahin *et al.*, 2014; De Sanctis *et al.*, 2016; Tsamara, Raharjo and Putri, 2020).

Most women who experience extremely severe premenstrual pain find it difficult to accept their condition. They struggle to control their emotions when experiencing premenstrual symptoms (Parazzini *et al.*, 1994; Sahin *et al.*, 2014; Angelhoff and Grundström, 2023). Emotional factors are associated with increased estrogen and prostaglandin hormones (Noviyanti *et al.*, 2021; Chopyak *et al.*, 2022; Roy and Mondal, 2023). During stress, estrogen and prostaglandin hormones can intensify uterine contractions, ultimately leading to menstrual pain (Sari, Nurdin and Defrin, 2015; Vannuccini *et al.*, 2022; Ruqaiyah *et al.*, 2023).

Every teenager has varying sensitivity to pain, ranging from mild pain that does not interfere with activities to severe pain that significantly disrupts their daily activities and requires medical examination. A novelty in this study is highlighting dysmenorrhea pain scores through the numeric rating scale. This approach describes the severity of dysmenorrhea experienced by adolescents in the middle phase, ages fifteen to eighteen. Therefore, this research provides an overview of the severity of primary dysmenorrhea among mid-adolescent students at Public Senior High School 5 Surakarta.

## METHOD

This paper was an analytical observational research design with a cross-sectional approach. The target population comprised 578 female students aged fifteen to eighteen enrolled in Public Senior High School 5 Surakarta. The sample was 139 respondents by simple random sampling technique. The authors collected data from April to June 2023. Data analysis used the mean score method, and the research instrument utilized the NRS (Numeric Rating Scale) questionnaire. Figure 1 illustrates the Numeric Rating Scale, and Table 1 presents the severity of primary dysmenorrhea. The ethics committee approved this research with the ethical code 73/UNS27.06.11/KEP/EC/2023.

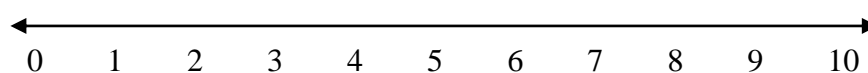


Figure 1. Numeric Rating Scale

Table 1. The severity of primary dysmenorrhea is based on the numeric rating scale.

Dysmenorrhea pain Scale	Description
0	No pain
1 – 3	1. Almost unfelt pain (very mild), 2. Unpleasant pain is similar to being pinched. 3. The pain is still tolerable. Similar to being pricked or lightly punched in the face.
4 – 6	4. Distressing pain (pain felt deeply), like a bee sting or a toothache. 5. Intense, deep, and profoundly distressing pain. It is comparable to a muscle sprain or strain. 6. Intensifying pain (stabbing so solid and deep pain) that disrupts communication.
7 – 10	7. Extremely intense pain (felt so strongly). There may be a lack of self-care and minimal communication. 8. Pain that is so intense or genuinely excruciating. It prevents self-care and communication. 9. Pain is highly intense, agonizing, unbearable, and cannot be tolerated. 10. Intense pain leads to loss of consciousness and inability to express it.

## RESULT

Table 2 shows the average age of the respondents is 16 years old. In addition, menarche, menstrual duration, and menstrual cycle are within the normal range, with menarche occurring at 12 years old, a menstrual duration of 6 days, and a menstrual cycle of 28 days.

Table 2. The characteristics of the respondents by age, menarche, menstrual duration, and menstrual cycle

The characteristics of the respondents	Mean	Minimum	Maximum	Standard deviation
Age (years old)	16.1	15	18	0.96
Menarche (years old)	12.12	10	14	0.871
Menstrual duration (days)	6.35	3	7	1.1
Menstrual cycle (days)	28.41	28	35	3.12

Table 3 indicates the mean dysmenorrhea pain scale in respondents of 4.89, indicating pain perceived intensely, resembling sensations like a bee sting or toothache. It may also be a robust, profound, and notably distressing pain like a muscle sprain or strain. The escalating pain with such acute and intense qualities can interfere with communication.

Table 3. The severity of primary dysmenorrhea.

Variable	Mean	Minimum	Maximum	Standard deviation
Dysmenorrhea pain Scale	4.89	0	10	2.24

## DISCUSSION

In this study, respondents' average age of menarche was 12 years old. It indicated that most of them were within the range of regular menarche age. According to previous research, most females experienced menarche between 10 and 14 years old (Ravi *et al.*, 2020; Aslan and Ünüvar, 2021; Nuraida *et al.*, 2023). Moreover, the respondents in this paper had an average menstrual duration of 6 days, implying that most encountered a regular length of menstruation. Generally, females experience an average menstrual duration of 3 to 7 days (Hatmanti *et al.*, 2022; Habiba and Benagiano, 2023). Furthermore, the respondents' average menstrual cycle in this research was 28 days, indicating that most had a routine and appropriate menstrual cycle. Typically, a regular menstrual cycle for females is within the range of 28 to 35 days (Bull *et al.*, 2019; Patricio and Sergio, 2019; Itriyeva, 2022; Salamin *et al.*, 2022). In conclusion, this study's results indicated that most respondents experienced regular menstrual duration and cycle and normal menarche.

This study measured the severity of primary dysmenorrhea in female students at Public Senior High School 5 Surakarta using the Numeric Rating Scale (NRS) questionnaire with a scale from 0 to 10. The data analysis showed that the average dysmenorrhea pain scale in respondents was 4.89. It indicated that most female students at Public Senior High School 5 Surakarta experienced primary dysmenorrhea but were still able to manage the pain during their daily activities. Some of the contributing factors to increased dysmenorrhea pain are menarche, menstrual cycle, and menstrual duration. A study conducted in 2022 revealed that there was a correlation between menarche and primary dysmenorrhea. Early menarche could increase the risk of experiencing severe primary dysmenorrhea (Duman, Yıldırım and

Vural, 2022). The menstrual duration and cycle are also the risk factors of primary dysmenorrhea. The longer the menstrual duration and cycle, the higher the intensity of uterine muscle contractions. Further, it leads to the incidence of primary dysmenorrhea (Duman, Yıldırım and Vural, 2022).

## CONCLUSION

In summary, most female students at Public Senior High School 5 Surakarta experienced primary dysmenorrhea but were still able to manage the pain during their daily activities. Middle adolescents could enhance their awareness and knowledge about managing dysmenorrhea by reading information in books and on the internet. They also could communicate with medical professionals to have a better understanding of how to cope with primary dysmenorrhea. Furthermore, healthcare professionals must provide health education about reproductive disorders, particularly dysmenorrhea, as a preventive measure and to control reproductive issues in women. In addition, further researchers should expand on predisposing factors of dysmenorrhea in middle adolescents.

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