

THE RELATIONSHIP BETWEEN AGE AND MENSTRUAL PAIN LEVEL WITH THE QUALITY OF LIFE OF FEMALE TEENAGERS AT SMAN 1 PETIR

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ABSTRACT

Background: Middle adolescents aged 14-17 years go through stages of physical and psychological maturity during this period. In terms of physical maturity, adolescents experience menstruation according to the development of their reproductive organs. During menstruation, some teenagers suffer from pain depending on their age. Menstrual pain experienced by teenagers can include feelings of fatigue, lower back pain, abdominal cramps, nausea, vomiting, dizziness, as well as activity disruption, mood changes, and in some cases, a refusal to engage in physical activities, and in the worst cases, temporary loss of consciousness. Of course, this can affect their quality of life. Objective: This study aims to find out the relationship between age and the level of menstrual pain with the quality of life of middle adolescents at SMAN 1 Petir. Method: This type of research is quantitative with a correlational descriptive design and a Spearman Rho correlation approach. The sample size consisted of 94 female students selected using a stratified random sampling. The instruments used were questionnaires, a Numeric Rating Scale, and the WHOQOL BREF, and the data were analyzed using SPSS for correlation tests. Results: This study shows that there is a relationship between the level of menstrual pain and the quality of life of adolescents at SMAN 1 Petir, with a p-value of 0.000 ($p < 0.05$) and a strong correlation of -0.552. For age, the p-value is 0.709 ($P > 0.05$) with a weak correlation of 0.039. The results indicate that pain has a much greater impact on quality of life compared to the age of the adolescents.

Keywords: age, level of pain, quality of life

INTRODUCTION

Adolescence is often associated with a short developmental phase or a transition that requires guidance. It is a very important developmental phase with many potentials and challenges. Adolescence is the period when people experience significant physical, social, emotional, and cognitive development (Vankerckhoven et al. 2023).

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Adolescent age is divided into three categories: early adolescence ranging from 10-13 years, middle adolescence between 14-17 years, and late adolescence 18-21 years. The middle adolescence phase includes teenagers aged 14 to 17 years. Girls' bodies undergo changes such as hip and waist growth, increased sweating, and development of reproductive organs. Meanwhile, growth in boys usually happens rapidly with their bodies becoming taller, weight increasing, acne appearing, muscles getting bigger, shoulders and chest widening, voice breaking, genital growth, mustache and beard growth, and the onset of menstruation in

Menstruation is a normal occurrence and it can be said that all normal women will experience it. However, in reality, many women experience menstrual problems (Widarti et al., 2024). Menstrual problems include irregular cycles, the duration of periods, the amount of menstrual blood, and menstrual pain. According to the World Health Organization (WHO) data in 2020, menstrual pain affected 1,769,425 people (90%), with 10-16% experiencing severe menstrual pain. Generally, the prevalence among young women is estimated between 67% and 90% (Nufus & Sutarno, 2023). Based on a report from the Central Bureau of Statistics in 2020, the prevalence of menstrual pain in Indonesia was 64.25%, found in teenagers aged 15-24 years. The incidence of primary menstrual pain was 54.88%, and secondary menstrual pain was 9.36%. The Banten Provincial Health Office, in collaboration with BPS in 2021, reported that menstrual pain in Banten occurred in 60.19% of 10,000 surveyed teenagers.

Menstrual pain is usually felt by some women at the beginning of their period. During this time, there are mild contractions in the uterine muscles that usually aren't noticeable. However, during menstruation, the contractions become stronger as part of the process of shedding the uterine lining. These contractions press on the blood vessels around the uterus, which slows down the flow of blood and oxygen to the uterus. The lack of oxygen causes the uterine tissue to release chemicals that cause pain (Oktavianto et al., 2018). The pain becomes worse because the body also produces chemicals called prostaglandins, which make the uterine muscles continue to contract. It is estimated that some women produce higher amounts of prostaglandins, so they experience more severe pain compared to others (Aini, 2024). Teenagers with menstrual pain sometimes think it's not a big deal because they believe their condition will return to normal, but the truth

Teen girls who experience menstrual pain have a decrease in their daily activities, find it hard to concentrate on schoolwork, and end up with unstable emotions that limit their social interactions with friends and family. On the other hand, teens who don't have menstrual pain can handle daily activities well, stay focused on learning, maintain stable emotions, and socialize better with friends and family. This shows that menstrual pain affects the quality of life of teenage girls compared to those who don't experience it (Handra & Yeni, 2024).

A preliminary study at SMAN 1 PETIR shows that menstrual pain is a common problem experienced by female students. Interviews with 10 students from various classes revealed that the menstrual pain they feel physically manifests as lower abdominal pain, accompanied by dizziness and fatigue, making it difficult for them to



carry out daily activities. Psychologically, the pain causes emotional changes, irritability, and anxiety, disrupting their emotional well-being. Socially, they tend to reduce interactions with friends and social activities because they feel uncomfortable. Academically, this situation can lead to decreased focus in studying, even missing school lessons and being absent.

Previous research discussing menstrual pain includes: analysis of dysmenorrhea factors by Marni et al. (2022), dysmenorrhea management factors (Juwita et al., 2022), and the influence of stress on dysmenorrhea (Hidayat, 2023). There is still little research discussing the relationship between menstrual pain and the quality of life of female students, even though this has a huge impact on a student's well-being related to attendance, which supports their performance during school.

Based on the problem above, the researcher wants to conduct a study about menstrual pain and the quality of life of teenagers, aiming to find out the level of pain, quality of life, and analyze the relationship between the level of pain and the quality of life of a female student at SMAN 1 Petir.

A limitation of this study is that it doesn't differentiate in detail the causes of menstrual pain, such as primary or secondary menstrual pain, which could possibly have different impacts on the quality of life of students at SMAN 1 Petir

METHODS

This study uses a quantitative analytic observational study with a cross-sectional design. The population in this study includes all female students of SMAN 1 Petir in 2026, totaling 545 students. The students selected as research subjects must have characteristics that match the criteria set in this study. The study used random sampling and sampling with stratified random sampling. Using the Slovin formula, a sample of 85 was obtained, plus a dropout rate of 8.5, so the total sample taken was 93.5, rounded up to 94 students. This study was conducted from May 11 to June 22, 2026. The instrument used in this study was the Numeric Rating Scale (NRS) with a scale of 1-3 for mild pain, 4-6 for moderate pain, and 7-10 for severe pain. There were also 26 questions about quality of life from the WHOQOL-BREF questionnaire, with several questions arranged according to the research variables to collect data. , namely the physical dimension, emotional dimension, social dimension, and environmental dimension with scores of 0-40 as poor, 41-80 as moderate, and 81-100 as good, and age is based on demographic data. The NRS instrument has already been standardized, while the WHOQOL-BREF questionnaire has been re-administered to Indonesian female students. WHOQOL-BREF is a measurement tool that is standardized, so its validity and reliability have been established. The World Health Organization (2012) explained that the validity of this tool ranges from 0.89 (for 3 domains) to 0.95 (domain 1), while the reliability ranges from 0.66 (3 domains) to 0.84 (domain 1). From the obtained data, it can be concluded that all items in the WHOQOL-BREF measurement tool are valid and reliable. For the program, the statistical package IBM SPSS v.21 (SPSS Inc.; Chicago, IL, USA) was used to evaluate the research data. Percentage values, arithmetic mean, and standard deviation are provided as descriptive statistics of the data. Normality test

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RESULTS

Tabel 1 Frequency Distribution of Demographic Characteristics, Pain Levels, Quality of Life Respondent Characteristics, Pain Level, Quality of Life

Variabel	N(%)	SD	Min-max	Median
class				
X	(54,3)			
XI	47(45,7)			
Age				
15	13(13,8)	665	15-17	16
16	49(52,1)			
17	32(34,1)			
Pain				
mild	13(13,8)	765	1-3	2
Moderat	49(52,1)			
Severe	32(34,1)			
Quality of Life				
Bad	12(12,8)	663	1-3	2
Currently	54(57,4)			
Baik	28(29,8)			

Based on Table 1, it is known that the majority of respondents are 16 years old, totaling 49 people (52.1%), and the pain level for 49 people (52.1%) is at a moderate level, with 54 people (57.4%) having a moderate quality of life.

Table 2 Normalitas Test

Variabel	N	Z	P Value
Age	94	2,704	0,001
Pain	94	2,774	0,001

Based on table 2, it is known that the distribution of respondents is not normally distributed

Table 3 The Relationship Between Age and Quality of Life

	Poor Qualit y of Life	Moderate Quality of Life	Good Quality of Life	Total (%)	P-Value	r
Age 15	0 (0.0%)	7 (53,8%)	6 (43,2%)	13 (100.0%)	<0,709	0.039
Age: 16 yrs	11 (22,4%)	27 (55%)	11 (22,6%)	49 (100.0%)		
17 years old	1 (1,8%)	20 (63%)	11 (34%)	32 (100.0%)		
Total	12 (13%)	54 (57%)	28 (30%)	94 (100.0%)		

Based on Table 3, it can be seen that the respondents aged 16 numbered 27 people (55%) with a P Value of <0.709 (>0.05) and a correlation value $r = 0.039$, which means there is no relationship between age and the quality of life of SMAN 1 Petir female students.

Table 4 The Relationship Between Pain Levels and Quality of Life

	Poor Qualit y of Life	Moderate Quality of Life	Good Quality of Life	Total (%)	P-Value	R
Mild Pain	0 (0.0%)	7 (31.8%)	15 (68.2%)	22 (100.0%)	<.000	-552
Mode rate Pain	1 (3.4%)	27 (65.5%)	10 (31.0%)	38 (100.0%)		
Severe Pain	11 (23,3%)	20 (65.1%)	3 (11.6%)	34 (100.0%)		
Total	12 (13 %)	54 (57%)	28 (34 %)	94 (100.0%)		

Based on Table 4, it can be seen that the range of menstrual pain among students is at a moderate level, with 27 students (65.5%) experiencing it, with a p-value of <0.00 (<0.05), and a strong correlation with quality of life, $r = 0.552$. It can be concluded that the intensity of pain has a very strong relationship with the quality of life of SMAN 1 Petir students.

DISCUSSION

According to Anantasari (2010), teenagers who are in their adolescent years are considered to be in a transitional period because they do not have a strong foundation yet, while their personalities are still developing. Teenagers are still not fully capable of controlling their physical functions. They are quite unstable and easily influenced by their surroundings. As part of the next generation, teenagers are expected to become meaningful individuals in the future and should also have a proper understanding of themselves. This understanding is very important for everyone in living their life, so they can have a clear picture of themselves and be able to make use of what they have learned.

For ages 16-17, changes related to several aspects include physical aspects, which are the maturation of reproductive organs in this age range accompanied by physical challenges such as menstrual pain, hormonal fluctuations, and fatigue. In addition, dissatisfaction with body image perception greatly affects the physical comfort and self-confidence of teenage girls. Teenage girls who have a positive perception of their bodies record higher quality of life scores. From a psychological aspect, aging from 16 to 19 years goes hand in hand with increased cognitive maturity and self-identity formation. However, teenage girls aged 17–18 often experience a temporary decline in psychological quality of life due to high levels of academic stress, graduation



preparations, and uncertainty about the future. Emotional stability generally improves at age 19 along with an increased sense of independence. Then, from the social relationship aspect, at the age of

In line with the research conducted by Haryono and Sari (2018), they stated that stress causes biochemical, psychological, and behavioral changes. This condition can lead to a decline in physical health, psychological well-being, and social relationships, thus reducing the quality of life. This study aims to analyze the relationship between academic stress and quality of life in adolescents. The research results show that the majority of female students are aged 16–17 years and are in grades 10 and 11. This age range falls into the category of middle adolescence, a period characterized by rapid physical, psychological, and reproductive development. However, in this study, there was no relationship between age and the quality of life of a female student at SMAN 1 Petir, in line with Bogor's Research and Innovation Planning Agency which states that the adolescent population segment aged 17-24 has the highest happiness index, which is 75.

Research by Marni et al., (2022) shows that the occurrence of dysmenorrhea is more commonly found in teenagers aged 16–19 because at this age, the reproductive organs have developed optimally and there is an increase in hormonal activity that plays a role in the onset of menstrual pain. The results of this study align with the characteristics of respondents in this research, who were mostly 16 years old..

The results of this research show that most female students fall into the moderate quality of life category. This finding is in line with the study conducted by Rahmawati et al. (2021), which showed that many teenage girls are at a moderate level of quality of life. This indicates that most teenage girls are still able to carry out daily activities, although there are some factors that influence their views on quality of life (Rahmawati et al., 2021).

Quality of life is a comprehensive concept, which not only includes physical health conditions but also covers psychological well-being, social relationships, level of independence, personal beliefs, as well as other characteristics related to an individual's environment. This includes a value system that reflects goals, expectations, standards, and concerns (Priyanto et al., (Kurniasari2, 2018)2025). Quality of life is measured using the WHO Quality of Life (WHOQOL-BREF) questionnaire. The quality of life domains include psychological, physical, social, and environmental health as follows: (Milah, 2022) (Bogor, 2024)

Of the two variables examined, the one most closely related to the quality of life of high school students at SMAN Petir is the level of pain compared to age, which aligns with Ferrans' (2005) opinion as cited in Dewi (2022). Quality of life is a person's feeling of satisfaction or dissatisfaction with various important aspects of life. Quality of life assessments are subjective because they are influenced by personal experiences, expectations, values, and health conditions. The better a person's physical, psychological, social, and environmental conditions, the better the quality of life they feel.



According to Putri et al. (2024), dealing with dysmenorrhea in the school environment among teenage girls can affect various aspects of school life for students, such as loss of focus, lack of attention due to the pain felt, difficulty completing assignments, low motivation, as well as permission to be absent from school or even asking to go home because of the pain experienced. It is known that individuals experiencing dysmenorrhea also face impacts on their emotional aspects. The pain felt can cause feelings of sadness, being prone to gloom, feeling stressed, and even lead to depression due to concerns about their condition. Other disturbances arising from dysmenorrhea can also affect social dimensions, including relationships with family and friends being affected because of being more sensitive when having to endure pain and limitations in participating in social activities with friends. Thus, the pain caused by dysmenorrhea

CONCLUSION

This study found that quality of life has a very strong relationship with menstrual pain compared to age. The higher the level of menstrual pain, the lower the quality of life scores/categories in respondents, more often missing lessons or not going to school, which will definitely lower the students' achievement levels.

ETHICAL STATEMENT AND CONFLICT OF INTEREST

Ethical approval was obtained from the Ethics Committee of the Faculty of Medicine and Health Sciences, Sultan Ageng Tirtayasa University (Approval number: 83/UN43.20/KEPK/2026 Date: May 11, 2026). This study was conducted according to the 2011 WHO standards. Before starting the study, consent was obtained from the teenage girls who voluntarily participated in this research.

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