THE RELATIONSHIP BETWEEN EMOTIONAL REGULATION AND THE SEVERITY OF PRIMARY DYSMENORRHEA IN ADOLESCENT GIRLS AT STATE SENIOR HIGH SCHOOL 1 NGAWI

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Article Info	ABSTRACT
Corresponding Author: Diah Ayu Agustina, Dheny Rohmatika, Eni Rumiyati Kusuma Husada University Surakarta Email: dheny_rohmatika@ukh.ac.id	*Dysmenorrhea is caused by strong and consistent contractions that occur in the uterine wall and an increase in the hormone prostaglandin. Dysmenorrhea can result in unbearable pain and poor emotional control. This study aims to observe and analyze the relationship between emotional regulation and the degree of primary dysmenorrhea pain in female adolescents at SMA Negeri 1 Ngawi. This study is an analytical observational research study with a cross-sectional approach. This study was conducted at SMA Negeri 1 Ngawi in October 2024 with a sample of 174 respondents who had met the inclusion criteria. Data collection was carried out by filling out a questionnaire and then the data was analyzed statistically using the Spearman Rho Test. The Spearman Rho test shows a significance value (p = 0.000 (≤ 0.05), an r value of -0.765 and a negative correlation direction. Thus, this study reveals a significant correlation between emotional regulation and the severity of primary dysmenorrhea pain among female adolescents at State Senior High School 1 Ngawi.*

1. INTRODUCTION

According to health data, 60-70% of Indonesian women experience dysmenorrhea, comprising 54.89% primary dysmenorrhea cases and 45.11% secondary dysmenorrhea cases (Wahyuni & Zulfahmi, 2021). Studies indicate primary dysmenorrhea typically commences 6-12 months post-menarche, with pain duration ranging from 8-72 hours (Yasir et al., 2014). The highest prevalence occurs among adolescents aged 17-24 years (Silaen & Dewi, 2015).

Dysmenorrhea is characterized by menstrual cramps, abdominal pain, and lower back pain. Dysmenorrhea is categorized into three severity levels: mild, moderate, and severe (Maidartati, 2020). Wrisnijati & Wiboworini (2019) identified three severity levels of dysmenorrhea. Mild dysmenorrhea presents with lower abdominal pain. Moderate dysmenorrhea involves radiating pain to the back and thighs, accompanied by decreased concentration, reduced appetite, and additional symptoms. Severe dysmenorrhea is characterized by widespread pain in the back, pelvis, and thighs, potentially causing nausea, vomiting, diarrhea, headaches, inability to concentrate, and loss of consciousness.

Untreated dysmenorrhea can exacerbate health conditions potentially leading to infertility and mortality. Research by Lubis (2018) indicates that emotional conflict, tension, and anxiety contribute to discomfort and emotional distress. Most women experiencing severe premenstrual pain struggle with emotional regulation and adaptation (Aini, 2021). Individuals lacking effective emotional regulation skills are prone to emotional disturbances. Emotional regulation enables individuals to manage emotions effectively, improving overall emotional well-being (Yusuf & Kristiana, 2017).

Although men and women possess equivalent emotional regulation capacities, research suggests that women tend to exhibit poorer emotional management skills (Ratnasari & Suleeman, 2017). Aris (2017) posits that emotional instability is a distinct characteristic predisposing young women to complex problems with significant life implications. According to Muntari (2014), dysmenorrhea exhibits significant correlation with anxiety, tension, and stress among adolescent females, directly influencing their behavior during menstrual cycles. Additionally, these emotional experiences substantially impact quality of life, yielding both positive and negative consequences. This preliminary study reviews existing literature and prior research findings. Research by Lestari (2014) indicates that 70-90% of adolescents experience menstrual pain. Adolescents struggle to regulate their emotions effectively due to limited self-awareness and understanding of their emotions, potentially leading to negative thoughts and behaviors (Fauziah & Fauziah, 2021).

Preliminary research conducted by the researcher on June 3-4, 2024, at State Senior High School 1 Ngawi revealed that 53 female students (67%) reported experiencing menstrual pain, often accompanied by additional symptoms such as headaches and fatigue. Additional data from the School Health Unit and nurse interviews revealed that 27 students (33%) received treatment for dysmenorrhea at the between August 2023 and June 2024, out of 80 students experiencing dysmenorrhea. The study found that Grade 10 and 11 students comprised the majority of dysmenorrhea cases. Furthermore, the consequences are severe, with some cases resulting in fainting. Given the lack of research exploring the relationship between emotional regulation and primary dysmenorrhea severity at State Senior High School 1 Ngawi, this study aims to investigate the correlation between emotional regulation and primary dysmenorrhea severity among female adolescents at State Senior High School 1 Ngawi.

2. RESEARCH METHOD

This research was conducted at State Senior High School 1 Ngawi from October 8 to November 8, 2024. Employing a quantitative approach, this observational-analytical study utilized a cross-sectional design to examine the relationship between the independent variable (emotional regulation) and the dependent variable (primary dysmenorrhea pain), collecting data simultaneously (Rane et al., 2017). This study employed simple random sampling technique to select participants from the population, ensuring equal probability for each member to be chosen (Sugiyono, 2021).

The population for this study comprised 315 female students from Grade 10 and 11 at State Senior High School 1 Ngawi, aged 14-16, who had

experienced menstruation (data collected June 3-4, 2024). The minimum sample size required was 177 respondents. The sampling technique used in this study is simple random sampling, a method for determining samples from a population by using a simple random approach, so that each population has an equal chance of becoming a sample (Sugiyono, 2021). The inclusion and exclusion criteria are as follows:

a. Inclusion Criteria
   1) Adolescent females aged 14-16 years.
   2) Have experienced menstruation.
   3) Willingness to participate as respondents throughout the study.
b. Exclusion Criteria
   1) Suffering from specific gynecological disorders or secondary dysmenorrhea.
   2) Incomplete questionnaire responses.

This study employed univariate and bivariate analysis. Univariate analysis examined relevant variables, presenting respondent characteristics - including age, menarche age, menstrual duration, menstrual cycle, exercise frequency, emotional regulation, and primary dysmenorrhea severity - in detailed frequency distribution tables with percentages.

Bivariate analysis tested hypotheses involving two variables, examining the statistical relationship between independent and dependent variables. This analysis utilized Spearman's Rho test, supported by SPSS version 25.0 for Windows.

This research has ethical clearance by the Health Research Ethics Commission of Kusuma Husada University on October 8, 2024, with No. 2377/UKH.L.02/EC/X/2024. The researcher conducts the study with a strong scientific attitude and adheres to research ethics.

3. RESULTS

a. Research Location Description

This study involved 177 Grade 10-11 students at State Senior High School 1 Ngawi. However, only 174 met the inclusion criteria. Data collection occurred directly using research questionnaires from October 8 to November 8, 2024. State Senior High School 1 Ngawi is a public high school located in Ngawi Regency, East Java Province, Indonesia. State Senior High School 1 Ngawi, located at Jl. Ahmad Yani No. 45, Wareng, Beran, Ngawi District, Ngawi Regency, East Java, is a prominent secondary education institution in

Indonesia. Following the national three-year education standard, the school offers classes from Grade 10 to Grade 12. Strategically situated and being the only public high school in Ngawi city, State Senior High School 1 Ngawi provides exclusive educational value.

b. Respondent Characteristics

Table 1. Distribution of Respondent Characteristics

Variable		F	%
Age	14 years	21	12
	15 years	61	35
	16 years	92	53
Onset of Menstruation	9 years	4	2
	10 years	16	9
	11 years	42	24
	12 years	58	33
	13 years	47	27
	14 years	7	4
Menstrual flow duration	< 3 days	1	1
	3-7 days	140	80
	> 7 days	33	19
Menstrual cycle	< 21 days	19	11
	21-35 days	153	88
	> 35 days	2	1
Exercise frequency	< 30'	22	13
	30-60'	110	63
	> 60'	42	24

Source: Primary Data 2024

Based on Table 1 above, the results show that the majority of respondents in this study, consisting of 92 respondents (53%), were 16 years old. The characteristics of the respondents based on the age of menarche in this study were mostly at the age of 12 years, with 58 respondents (33%). Based on the duration of menstruation, the majority of respondents had a menstruation duration of 3-7 days, with 140 respondents (80%). Based on the menstrual cycle, the majority of respondents had a menstrual cycle of 21-35 days, with 153 respondents (88%). Furthermore, based on the frequency of exercise, the majority of respondents had an exercise frequency of 30-60 minutes, with 110 respondents (63%).

c. Description of Primary Dysmenorrhea Pain and Emotional Regulation

Table 2. Description of Primary Dysmenorrhea Pain and Emotional Regulation

Variable		F	%
Emotional Regulation	Mild	7	4
	Moderate	100	57
	Severe	67	38
Degree of Dysmenorrheal Pain	No Pain	44	25
	Mild Pain	18	10
	Moderate Pain	99	57
	Severe Pain	13	7

Source: Primary Data 2024

Based on Table 2 above, the results show that the majority of respondents, consisting of 100 respondents (57%), had moderate emotional regulation. Additionally, the majority of respondents, consisting of 99 respondents (57%), experienced moderate primary dysmenorrhea pain.

d. The Relationship Between Emotional Regulation and Primary Dysmenorrhea Pain Intensity in Female Adolescents

Table 3. The Relationship Between Emotional Regulation and Dysmenorrhea Pain Severity

		Emotional Regulation	Degree of Dysmenorrheal Pain
Emotional Regulation	Correlation Coefficient	1.000	-.765**
	Sig. (2-tailed)		.000
	N	174	174
Degree of Dysmenorrheal Pain	Correlation Coefficient	-.765**	1.000
	Sig. (2-tailed)	.000	
	N	174	174

Table 3 presents the results of the statistical analysis using Spearman's rho test, which revealed a significant correlation between the degree of primary dysmenorrhea pain and emotional regulation (r = -0.765, p < 0.05). This finding indicates a strong negative relationship between the two variables, suggesting that higher levels of emotional regulation are associated with lower degrees of primary dysmenorrhea pain. The results provide support for the first hypothesis (H1), which posits a relationship between emotional regulation and the degree of primary dysmenorrhea pain in female adolescents at State Senior High School 1 Ngawi. Consequently, the null hypothesis (H0) is rejected.

4. DISCUSSION

This study was conducted to examine the relationship between emotional regulation and primary dysmenorrhea pain in female adolescents attending State Senior High School 1 Ngawi. A total of 177 female students in grades X and XI were recruited for the study, but only 174 met the inclusion criteria, as three students had not yet experienced menarche. The participants were categorized based on demographic characteristics, including age, age at menarche, menstrual duration, menstrual cycle, exercise frequency, emotional regulation, and primary dysmenorrhea pain severity.

a. Respondent Characteristics

Adriani (2018) study revealed that the average menarche age for Indonesian adolescent girls nationally falls within the 13-14 year range. Consequently, dysmenorrhea typically affects girls aged 14-16, coinciding with their high school education. This research employed a 14-16 year age range as respondent selection criteria, encompassing the youngest and oldest participants, to provide a comprehensive understanding of the phenomenon.

This study's findings indicate that 58 respondents (33% of 174) experienced menarche at age 12. According to Yulita et al. (2022), menarche typically occurs between 10-14 years as part of normal reproductive development. Consequently, these results align with standard menarche age ranges, with most respondents experiencing menarche within the considered normal age range.

This study's results indicate that 80% (140/174) of respondents experienced menstrual durations between 3-7 days. According to (Harzif, 2018), normal menstrual duration ranges from 3-7 days, aligning with reproductive health standards. Consequently, the findings suggest most respondents' menstrual durations conform to normal standards, reflecting good reproductive health.

The study revealed that 88% (153/174) of respondents experienced menstrual cycles within the 21-35 day range. According to Villasari (2021), normal menstrual cycles last 21-35 days. Our findings support this theory,

indicating optimal reproductive health among most respondents.

The study revealed that 63% (110/174) of respondents engaged in daily physical activity for 30-60 minutes. According to McMillan et al. (2016), individuals are considered sufficiently physically active if they engage in at least 30 minutes of exercise or physical activity daily, or 3-5 times a week. The findings suggest that a significant proportion of respondents met recommended exercise frequencies, demonstrating awareness of physical activity's significance.

b. Emotional Regulation

The study revealed that 57% (n=100) of the 174 respondents exhibited moderate emotional regulation. This finding is consistent with Silvanus et al. (2017) study on female adolescents at SMAN 7 Malang, which reported that 97.10% of female adolescents exhibited adequate emotional regulation. In adolescent females, adequate or suboptimal emotional regulation is attributed to ongoing emotional development, resulting in immature emotional control. The first factor influencing emotional regulation is age, where increasing age corresponds to improved emotional control. The second factor is family dynamics. Individuals learn to express and manage emotions through observation and interaction with parents, emphasizing the crucial role parents play in teaching effective emotional regulation techniques. The third factor influencing emotional development is environment, which significantly impacts emotional growth (Ratnasari & Suleeman, 2017).

Individuals with good emotional health tend to exhibit higher pain tolerance for moderate to severe pain compared to those with low emotional stability (Silvanus et al., 2017). Low emotional control increases women's vulnerability to depression, stress, anxiety, and other psychological issues (Fitriani & Alsa, 2015).

This study's findings align with Eliza et al., (2020) research, indicating 60.6% of female students exhibit adequate emotional regulation. Effective emotional regulation in adolescents is crucial, as well-managed emotions can reduce dysmenorrhea pain, whereas poorly regulated emotions exacerbate pain intensity.

c. Degree of Dysmenorrheal Pain

The severity of primary dysmenorrhea in students at State Senior High School 1 Ngawi was assessed using the Numeric Rating Scale (NRS) questionnaire. Analysis of 174 respondents revealed that 99 (56.9%) experienced moderate pain. Characterized by sharp, stabbing sensations akin to bee stings or toothaches, intensifying pain disrupts communication (Antik, 2020).

A study by Sari & Hayati (2020) found that dysmenorrhea pain among female students at State Senior High School 1 Tanjungbalai was predominantly moderate, affecting 48% (12 respondents), followed by severe pain, affecting 16% (4 respondents). This study is supported by (Gustina, 2015) research, indicating most respondents experienced moderate pain due to increased prostaglandin hormone levels, triggering uterine contractions and pain. High levels of prostaglandin directly correlate with pain intensity, indicating that increased prostaglandin concentrations exacerbate pain severity (Andira, 2019). Research by Luh et al. (2019) revealed that moderate menstrual pain affected 40.3% (48/119) of students at State Junior High School 2 Denpasar.

This study's results diverge from Cahyaningtias & Wahyuliati (2016) findings, indicating prevalent mild pain among respondents. This discrepancy stems from individual variations in pain perception, resulting in differing pain tolerance levels. A significant factor influencing individual pain perception is prior pain experience, particularly the effectiveness of previous menstrual pain management strategies (Suparmi & Musriyati, 2017). The discrepancy between this study and Cahyaningtias & Wahyuliati (2016) may be attributed to differences in population characteristics, particularly age range, significantly influencing individual pain perception.

d. The Relationship Between Emotional Regulation and Dysmenorrhea Pain Severity.

The results of the sample distribution based on emotional regulation and primary

dysmenorrhea pain severity in Table 2 show that the majority of female adolescents at State Senior High School 1 Ngawi, consisting of 100 respondents (57.5%), had moderate emotional regulation, and 99 respondents (56.9%) experienced moderate primary dysmenorrhea pain.

The statistical analysis using Spearman's rho test revealed a significant correlation between primary dysmenorrhea pain and emotional regulation, with a p-value of 0.000 (p < 0.05). This finding indicates a statistically significant relationship between emotional regulation and primary dysmenorrhea pain in female adolescents at State Senior High School 1 Ngawi.

The results of the Spearman's rho test revealed a significant correlation coefficient of -0.765, indicating a strong negative relationship between emotional regulation and primary dysmenorrhea pain. This finding suggests that higher emotional regulation is associated with lower primary dysmenorrhea pain intensity, with a contribution of 76.5% to the relationship.

This study's findings are supported by Khoerunisya (2015), who reported a negative correlation between emotional regulation and menstrual pain in adolescents, indicating higher emotional regulation leads to lower menstrual pain. Further research by (Hasanah & Samaria, 2022) supports this finding, indicating that enhanced emotional regulation correlates with decreased pain intensity.

This finding aligns with (Hasanah & Samaria, 2022) study, which revealed a significant relationship between emotional regulation and primary dysmenorrhea pain intensity among female adolescents at State Senior High School 9 Depok. The researcher suggests that a more stable emotional state in adolescent females enhances their pain tolerance.

This study supports the theory that emotional regulation plays a crucial role in determining menstrual pain intensity among adolescents, consistent with Khoerunisya's (2015) findings. This study's findings align with Muntari (2014) research at State Senior High School 7 Malang, indicating a positive correlation between menstrual pain in adolescent girls and anxiety, tension, and stress levels.

Contrary to this study's findings, Ni'mah et al., (2021) reported no significant correlation between emotional status and dysmenorrhea severity in adolescent girls, as 61.1% of respondents experienced menstrual pain despite exhibiting positive emotions.

5. CONCLUSION

This study concludes that there is a significant relationship between emotional regulation and primary dysmenorrhea pain among female adolescents at SMA Negeri 1 Ngawi. The respondents, with an average age of 16 years, exhibited normal menarche, menstrual cycles, and durations, as well as moderate physical activity. The majority of respondents had moderate emotional regulation and experienced moderate primary dysmenorrhea pain. The Spearman Rho correlation test showed a significant negative correlation (r = -0.765) between emotional regulation and primary dysmenorrhea pain, indicating that higher emotional regulation is associated with lower primary dysmenorrhea pain.

6. RECOMMENDATIONS

This research aims to benefit female students at SMA Negeri 1 Ngawi by enhancing emotional regulation skills to alleviate primary dysmenorrhea, inform healthcare professionals in designing interventions to reduce primary dysmenorrhea pain through effective emotional regulation, and provide a foundation for future researchers to explore emotional regulation and primary dysmenorrhea pain in diverse populations.

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