The Relationship Between Stress Levels And The Incidence Of Dysmenorrhea In Adolescent Females At State Middle School 4 Banyuwangi

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ABSTRACT

Stress is one factor that can cause dysmenorrhea, a menstrual disorder. Stress can increase the production of prostaglandin hormones, which can stimulate uterine muscle contractions, resulting in pain. The purpose of this study was to determine the relationship between stress levels and the incidence of dysmenorrhea in female students at SMP Negeri 4 Banyuwangi. The research method was descriptive correlational using a cross-sectional approach with a purposive sampling technique and 72 respondents. Key findings showed that among adolescents, 26.4% had mild stress, 26.4% moderate stress, 23.6% normal stress, 16.7% severe stress, and 6.9% very severe stress. Regarding dysmenorrhea, 48.6% reported moderate pain, 29.2% mild pain, 18.1% severe pain, and 4.2% unbearable pain. There was a statistically significant correlation between stress levels and dysmenorrhea incidence (t-test, p=0.000, correlation coefficient 0.74), indicating that higher stress is associated with higher intensity of dysmenorrhea. Further research is recommended to include other variables such as age at menarche and family history.

Keywords: Dysmenorrhea, Female Students, Stress Levels

Introduction (font arial 11, bold with 1 spacing)

Most adolescent girls experience menstruation due to biological changes from the maturation of reproductive organs. Dysmenorrhea, or menstrual cramps, is severe pain during menstruation, often causing discomfort with symptoms such as nausea, vomiting, back pain, and mood changes (1,2).

Khotimah, Kirnantoro, and Cahyawati (2014) stated that dysmenorrhea is more common in adolescent girls who are experiencing anxiety, restlessness, and tension that can trigger pain(3). The resulting pain can cause impaired concentration, which has a negative impact on daily activities such as being absent from school, falling behind in class, and being unable to go to work. Fielding, Brown, and Thurmond (2011) divided dysmenorrhea into primary dysmenorrhea and secondary dysmenorrhea(4). Dysmenorrhea that is not accompanied by pelvic pathology is considered primary dysmenorrhea. Primary dysmenorrhea is caused by increased prostaglandins that cause strong contractions in the myometrium, while secondary dysmenorrhea is caused by problems in the reproductive organs (5).

Research conducted by Apriyanti, Harmia, and Andriani (2018) obtained data from the World Health Organization (WHO) in 2013, which found that 1,769,425 (90%) women experienced dysmenorrhea. In Indonesia, the incidence of dysmenorrhea, according to the Indonesian Ministry of Health in 2016, was around 55% (6). Research conducted by Juliana, Rompas, and Onibala (2019) in Manado found that 80.5% of respondents experienced dysmenorrhea (7).

Ismail, Kundre, and Lolong (2015) found that stress plays a role in the occurrence of dysmenorrhea. Stress is one of the psychological factors that trigger dysmenorrhea (8). Furthermore, Sari, Nurdin, and Defrin (2015) explained that when someone experiences stress, the body produces excess estrogen and prostaglandin hormones (9). These hormones can cause increased uterine contractions, which can lead to painful menstruation.

Sutjiato, Kandou, and Tucunan (2015) state that stressors experienced by college students vary from individual to individual. The causes are divided into internal and external factors. Internal factors include physical condition, learning motivation, and the student's personality. External factors include work, environment, family, facilities, and teachers [10]. Furthermore, Legiran, Azis, and Bellinawati (2015) state that academic factors, on the other hand, also contribute to stress potential, such as changes in learning styles from secondary school to higher education, school assignments, grade targets, academic achievement, and other academic problems [(11)].

Stress is the body's response to pressure, both internal and external. Stress can impact students' psychological aspects; positive impacts can increase creativity, while negative impacts can cause loss of concentration [(12)]. Furthermore, Yuniyanti, Masini, and Salim (2014) state that stress can trigger the release of hormones and peptides that increase the formation of prostaglandins [(13)]. This can stimulate uterine muscle contractions, which can cause pain during menstruation.

Nursing theory, according to Faye Glenn Abdellah in Alligod (2014), states that there are 21 nursing problems, one of which concerns comfort. Female students experiencing dysmenorrhea typically experience discomfort in daily activities due to the pain they experience [(14)]. Therefore, it is important to manage their stress.

Interviews with several female students at SMP Negeri 4 Banyuwangi revealed that academic stressors, such as schoolwork and grade targets, act as triggers. Some students reported experiencing pain during menstruation. Despite the commonality of dysmenorrhea in adolescents, few seek medical treatment, preferring over-the-counter medications, which may present side effects and risks. Thus, this study aims to examine the relationship between stress levels and the incidence of dysmenorrhea in female students at Klabat University.

METHODS

This study used a descriptive correlation design, which aims to determine the relationship between one variable and another based on the correlation coefficient. With a correlation, the study can obtain information about the level of the relationship, not the presence or absence of an effect of one variable on another [(15)]. In this study, frequency and percentage data analysis were used to describe stress levels and the incidence of dysmenorrhea, while Spearman's Rho/Rank test was used to determine the relationship between stress levels and the incidence of dysmenorrhea.

The population in this study was female students of SMP Negeri 4 Banyuwangi. The sampling method used was convenience sampling, where researchers can draw samples based on spontaneity. This technique allows researchers to determine the desired sample based on predetermined criteria [(16)].

The inclusion criteria were female students who had menstruated, female students who were present during the study, while the exclusion criteria were female students who did not experience dysmenorrhea, and female students who were not willing to sign the consent form to become respondents. The instrument in this study contained statements about stress levels adopted from the Depression Anxiety Stress Scale (DASS) which had been validated and tested for its reliability value, with a Cronbach's alpha value of 0.948, the questionnaire consisted of 14 questions with categories 0-14 normal, 15-18 mild, 19-25 moderate, 26-33 severe and > 34 very severe. Meanwhile, to measure pain experienced during menstruation using a numeric rating scale (NRS) pain assessment scale, the reliability test obtained was 0.746, category 0 no pain, 1-3 mild pain, 4-6 moderate pain, 7-9 severe pain, and 10 unbearable pain.

HASIL

After data collection and analysis using frequency and percentage formulas, stress levels were determined.

Table 1. Results of the Analysis of Stress Levels of Students at SMP Negeri 4 Banyuwangi

Category	Frequency	Percent (%)
Mild	19	26.4
Moderate	19	26.4
Normal	17	23.6
Severe	12	16.7
Extreme	5	6.9

Table 1 shows that of the 72 respondents, 19 (26.4%) experienced mild stress, 19 (26.4%) experienced moderate stress, 17 (23.6%) experienced normal stress, 12 (16.7%) experienced severe stress, and 5 (6.9%) experienced very severe stress. From the data, it was found that the highest level of stress experienced by students was mild and moderate stress.
The description of the incidence of dysmenorrhea in female students at SMP Negeri 4 Banyuwangi obtained the following results.

Table 2. Results of the analysis of the incidence of dysmenorrhea in female students at SMP Negeri 4 Banyuwangi

Category	Frequency	Percent (%)
Moderate	35	48.6
Mild	21	29.2
Severe	13	18.1
Unbearable	3	4.2

Table 2 shows that of the 72 respondents, 35 (48.6%) experienced moderate pain, 21 (29.2%) experienced mild pain, 13 (18.1%) experienced severe pain, and 3 (4.2%) experienced unbearable pain. From these data, it was found that the most common type of dysmenorrhea experienced by female students at SMP Negeri 4 Banyuwangi was moderate pain.
The relationship between stress levels and the incidence of dysmenorrhea in female students at SMP Negeri 4 Banyuwangi resulted in the following results.

Table 3. Relationship between Stress Levels and the Incidence of Dysmenorrhea in Female Students at SMP Negeri 4 Banyuwangi

Variable	*P- Value*	Correlation Coefficient
Stress levels and dysmenorrhea occurrence	0.000	0.449

Based on the results of the Spearman correlation statistical test, the p-value = 0.000 ≤ 0.05 with a correlation coefficient value of 0.449. This indicates that Ha: There is a relationship between stress levels and the incidence of dysmenorrhea in female students of SMP Negeri 4 Banyuwangi is accepted. Thus, it was found that there is a significant relationship between stress levels and the incidence of dysmenorrhea in female students of SMP Negeri 4 Banyuwangi. The closeness of the relationship is moderate with a positive (+) relationship direction, which means that the higher the stress level, the higher the level of pain when experiencing dysmenorrhea.

DISCUSSION

Legiran, Azis, and Bellinawati (2015) revealed that stress experienced by students can be caused by academic life, such as the demands of final grades and student expectations regarding the results. Another factor is the demands of assignments given by teachers [(11)].

Hakim (2018) revealed that the signs and symptoms that usually appear when someone experiences mild stress can be seen psychologically and physically [17]. Psychological symptoms are usually anger, sadness, despair, and emotional outbursts, while physical symptoms include heart palpitations, lethargy, and lack of energy. Symptoms that appear when someone experiences moderate stress include excessive negative emotions, insomnia, constipation, acid reflux, and impaired urination. According to Ambarwati, Pinilih, and Astuti (2017), stress in students can have both positive and negative impacts. The positive impact of stress is that students can be more motivated to develop themselves and their abilities. Meanwhile, the negative impact of stress can affect students' academic achievement and abilities [18].

The results of interviews conducted with respondents stated that the causes of stress experienced by female students were piling up assignments from teachers, demands for grades, but this stress could be overcome by getting support from people around them, being close to their parents, being grateful for all the circumstances they experienced, doing activities they enjoyed such as listening to music or watching dramas they liked, this was the basis for the stress experienced by female students being classified as mild stress and moderate stress.

Research conducted by Sari, Nurdin, and Defrin (2015) revealed that when someone experiences stress, the body produces excessive amounts of the hormone prostaglandin, which then causes increased uterine contractions, resulting in pain in the abdomen and hips during menstruation [9]. Furthermore, Ismail, Kundre, and Lolong (2015) revealed that stress is a factor that can influence the occurrence of dysmenorrhea [8].

Rustam (2014) stated that dysmenorrhea is characterized by pain in the abdomen and pelvis. Furthermore, dysmenorrhea can be characterized by stiffness in the hip area, irritability, sleep disturbances, and breast tenderness. Dewi and Runiari (2019) added that moderate dysmenorrhea is usually characterized by severe pain that radiates to the back and waist and begins to interfere with daily activities [19].

According to Setyowati (2018), dysmenorrhea has an impact on daily life. The impacts of dysmenorrhea include affecting concentration in class, not being able to exercise, declining performance in class, socializing with others being disrupted, experiencing a decline in grades, and a more significant impact is related to absenteeism because when someone experiences dysmenorrhea, they will ask for permission from school, campus, or work [20].

Based on the analysis results, the average female student experienced dysmenorrhea with moderate pain. This is in line with the results of research conducted by Rusli, Angelina, and Hadiyanto (2019) that most respondents who experienced stress experienced dysmenorrhea with moderate pain [21]. The results of interviews conducted by the researchers revealed that when experiencing dysmenorrhea, the female students experienced pain in the abdomen to the waist, and some experienced headaches and nausea.

According to Rahma, Lanti, and Hidayati (2014), stress is one of the triggers for dysmenorrhea [22]. This is because when someone experiences stress, the body increases adrenal cortisol secretion, which can interfere with the release of the hormone progesterone. If progesterone release is disrupted, prostaglandin synthesis will increase, which will affect uterine muscle contractions. Excessive uterine contractions can cause abdominal pain or cramps.

The results of this study are in line with research conducted by Yuniyanti, Masini, and Salim (2014) on grade X and XI female students of SMK Bhakti Kerya, Magelang City, in 2013, which obtained a p-value of 0.000 with a coefficient value of 0.334, which means there is a relationship between stress levels and the incidence of dysmenorrhea [23]. Furthermore, research conducted by Sandayanti, Detty, and Jemino (2019) on medical students at Malahayati University, Bandar Lampung, obtained statistical test results of $p = 0.029 < 0.05$ with a coefficient value of 0.704 [24]. These results indicate that there is a relationship between stress levels and the incidence of dysmenorrhea, with a strong positive variable relationship, which means that the higher the stress level, the risk of dysmenorrhea also increases.

CONCLUSION

From the results of this study, which aimed to determine the relationship between stress levels and the incidence of dysmenorrhea in female students at SMP Negeri 4 Banyuwangi, it can be concluded that most female students experience mild stress. Furthermore, most female students experience moderate dysmenorrhea. A significant relationship was found between stress levels and the incidence of dysmenorrhea in female students.

SUGGESTION

Female students are advised to allocate time for rest or engage in activities that help reduce stress. Further research is recommended to consider other variables that contribute to dysmenorrhea, such as age at menarche and family history**.**

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