SRIWIJAYA JOURNAL OF MEDICINE

The Relationship between Knowledge and Self-Medication Practices for Dysmenorrhea among Female Students of SMK Negeri 2 Palembang

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Abstract

Dysmenorrhea is a common occurrence in most women. The pain arising from dysmenorrhea ranges from mild to moderate and can disrupt daily activities and performance. Many women practice self-medication to alleviate this pain. This self-medication practice is influenced by several factors, one of which is the level of knowledge. This study aims to explore the relationship between the level of knowledge among female students and self-medication behavior in dysmenorrhea. This study used a cross-sectional design with a random sampling of female students from SMK Negeri 2 Palembang. The total sample involved 41 students. Data were collected and analyzed using chi-square and Mann-Whitney U tests. The majority of students experienced dysmenorrhea (87.8%) with an average Visual Analog Scale (VAS) score of 4.6. The duration of pain varied, with most experiencing pain for 2-3 days after menstruation. Almost all students (97.6%) had good or sufficient knowledge about dysmenorrhea. However, only a few students practiced self-medication (11.1%), with paracetamol being the most commonly used medication. The analysis showed a significant relationship between knowledge level and self-medication behavior (p=0.002, OR: 12.681). The level of knowledge among female students is significantly associated with self-medication behavior in dysmenorrhea. Better health education on dysmenorrhea management and the use of safe medication needs to be strengthened to reduce the risk of side effects and improve the well-being of students.

Keywords: Dysmenorrhea, Self-medication, Knowledge

1. Introduction

Menstruation is a natural event experienced by every woman during their reproductive years. During this period, most women experience dysmenorrhea. Dysmenorrhea is defined as cyclic lower abdominal or pelvic pain that can radiate to the lower back, legs, and inner thighs.[1] Additionally, dysmenorrhea can also manifest symptoms such as headaches, diarrhea, bloating, nausea, vomiting, back pain, and leg pain.[2] The severity of pain usually ranges from mild to moderate and can disrupt quality of life, leading to absenteeism from work or school and decreased academic performance.[3] The occurrence of dysmenorrhea typically begins during adolescence and lasts for 1 to 3 days.[4] This phenomenon is common in young adult women and constitutes a primary complaint during medical consultations.[5]

Adolescents with dysmenorrhea have a prevalence of 60% to 93%, with severe dysmenorrhea accounting for 36% to 52.5% of cases. Due to the natural nature of dysmenorrhea, many women choose to self-medicate rather than seek medical advice. In most cases, this self-medication entails the use of pharmaceuticals like paracetamol, NSAIDs, and antispasmodic medications in addition to non-pharmacological or herbal techniques like applying heat or using other herbal remedies.[2,6,7]

The World Health Organization (WHO) defines self-medication as the practice of selecting and using medication by individuals

to treat diseases or symptoms they recognize themselves.[5] This self-medication practice is common because it is considered a cheap, fast, and convenient solution. Patients take a proactive role in their self-medication decisions.[8] However, safe self-medication requires an adequate level of knowledge about drugs. Self-medication actions will be more effective if based on good knowledge, while actions without sufficient knowledge can result in the risk of adverse drug effects and harmful drug interactions. Not much is known about self-medication for dysmenorrhea in adolescent females. Adolescent females are often confused with various over-the-counter medication options, and they usually do not know the best analgesic for them. Research shows that most common self-treatment methods used by females are inappropriate, and this is due to a lack of information about proper drug selection, therapeutic dosage, and associated side effects. Adolescents also often hesitate to discuss menstruation and rarely seek optimal menstrual health.[6,9] The risk of self-medication for pain without sufficient knowledge includes gastrointestinal side effects and harmful drug interactions.[7] Therefore, this research aims to determine the relationship between the knowledge level of female students and self-medication behavior in dysmenorrhea.

2. Methods

This research is an analytical observational study with a cross-sectional design. The sample was obtained using a random sampling method with a minimum sample size of 20 individuals. The sampling method used total sampling. The inclusion criteria include all female students of SMKN2 Palembang who have experienced menstruation and are willing to participate in the study. Students with a history of other health disorders that could affect their perception of dysmenorrhea or self-medication or chronic diseases will be excluded from the study. Variables such as weight and height were obtained through direct measurement, while subject characteristics, knowledge level, and self-medication behavior were obtained using a questionnaire. Data obtained from the data collection was then converted into tables and percentages then processed using Statistical Package for Social Science (SPSS) version 20. The statistical analysis used in this research is the chi-square test, followed by the Mann-Whitney U post hoc test.

3. Results

The research sample is comprised of 41 individuals. The research results found that the majority of the sample's age ranges from 15 to 16 years old, with the highest percentage at the age of 15 (73.2%, Table 1). Most of the sample in this study has a normal body mass index (58.5%, Table 1), followed by underweight (31.7%, Table 1). There were no samples classified as obese. The majority of the sample in this study experienced their first menstruation at the age of 12 years old (31.7%, Table 1). Most respondents have regular menstrual cycles (58.5%, Table 1), with a menstrual duration of 2-7 days (68.3%, Table 1). The majority of the sample changes their pads 2-3 times per day (68.3%, Table 1.

Out of 41 samples, 36 of them experienced dysmenorrhea (87.8%, Table 2). The average Visual Analog Scale (VAS) score perceived by the respondents was 4.6. The duration of pain experienced by the respondents varied, with 13 individuals (31.7%) reporting pain for ≤ 1 day, 20 individuals (48.8%) experiencing pain for 2-3 days, and 3 individuals (7.3%) experiencing pain for > 3 days. A total of 23 respondents (56.1%, Table 2) reported a family history of dysmenorrhea, indicating the possibility of genetic factors in this condition. However,

only 3 respondents (7.3%) reported a history of other gynecological disorders.

Table 1. Characteristics of Sociodemography among Female Students at SMK Negeri 2 Palembang

Characteristics	n	%
Age		
14 yo	9	22.0
15 yo	30	73.2
16 yo	2	4.9
BMI		
Underweight	13	31.7
Normal	24	58.5
Overweight	4	9.8
Obesity	0	0.0
First menarche age		
10 yo	6	14.6
11 yo	11	26.8
12 yo	13	31.7
13 yo	9	22.0
14 yo	2	4.9
Menstrual cycle		
Regular	24	58.5
Irregular	17	41.5
Menstrual duration		
2-7 days	28	68.3
> 7 days	13	31.7
Pad changing frequency		
1x	1	2.4
2-3x	28	68.3
>3x	8	19.5

Table 2. Characteristics of Dysmenorrhea among Female Students at SMK Negeri 2 Palembang

Dysmenorrhea Characteristics	n	%
Dysmenorrhea	36	87.8
VAS Score	4.6	11.2
Pain duration		
≤ 1 day	13	31.7
2-3 days	20	48.8
> 3 days	3	7.3
Family history	23	56.1
Gynecological disorders	3	7.3

Table 3. Characteristics of Self-medication among Female Students at SMK Negeri 2 Palembang

Self-medication Characteristics	N
Self-medication	4
Drugs	
Paracetamol	3
Mefenamic acid	1
Ibuprofen	1
Diclofenac sodium	1
Improvement	3
No Improvement	1

Out of all the samples who complained of dysmenorrhea, only 4 individuals practiced self-medication (11.1%). The medications consumed to alleviate menstrual pain were paracetamol, mefenamic acid, ibuprofen, and diclofenac sodium. However, 1 sample reported no improvement after self-medication. No side effects were reported from the self-medication that had been done. Based on statistical analysis using the chi-

square test, there is a significant relationship between knowledge level and self-medication behavior (p=0.002, OR: 12.681, Table 4). Students with fair and good knowledge levels are more likely to engage in self-medication compared to students with poor knowledge levels.

Table 4. The Relationship between Knowledge and Self-Medication (SM) Practice among Female Students of SMK Negeri 2 Palembang

Knowledge	SM	Non-SM	Total	P value	OR
Poor	1 (2,4%)	0 (0%)	1 (2,4%)	0.002	12.681
Fair	1 (2,4%)	17 (41,5%)	18 (43,9%)		
Good	1 (2,4%)	21 (51,3%)	22 (53,7%)		
Total	3 (7,3%)	38 (92,7%)	41 (100%)		

4. Discussion

Dysmenorrhea is characterized as premenstrual or menstrual colic pain in the suprapubic area that radiates to the lower back and thighs in the absence of pelvic illness. The average length of discomfort that research participants feel is two to three days. Due to increased prostaglandin release during the first and second days of menstruation, the pain typically lasts between eight and seventy-two hours, with the first two days being the most intense.[10] The majority of female students in this study experienced dysmenorrhea (87.8%) with a pain severity level of approximately 4.6. Hadjou et al. also reported the same result with a dysmenorrhea prevalence of 92.9%.[11] Meanwhile, Azagwe et al. and Fernandez et al. reported dysmenorrhea prevalence rates of 64.7% and 79%, respectively. This variation is caused by differences in study design, and participant ages. Most studies also do not differentiate between primary and secondary dysmenorrhea.[12] Kabukçu et al. also found an average pain severity level of 5.22 (moderate pain). Pain severity is influenced by subjective perception of pain, cultural differences, age, and lifestyle.[13] In Indonesia, cases of menstrual pain can range from mild to severe. This pain often appears before, on the first day, or even after menstruation. There are two types of menstrual pain, namely secondary menstrual pain and primary menstrual pain. Secondary menstrual pain is pain accompanied by abnormalities in the reproductive organs due to pathological conditions such as ovarian cysts, endometriosis, and the like, while primary menstrual pain is normal pain caused by prostaglandin secretion and uterine muscle contractions.[9] The majority of samples in this study claimed not to have a history of gynecological diseases, thus it can be concluded that the pain experienced is primarily menstrual pain.

In this study, most patients have a normal BMI (58.5%), with only a few having an overweight BMI (9.8%). Dysmenorrhea tends to increase in the underweight, overweight, and obese groups.[2,14] Primary dysmenorrhea occurs due to excessive prostaglandin production. Prostaglandins induce contractions in the uterus, raise intrauterine pressure, and decrease blood flow, which results in hypoxia and ischemia. Malnutrition and low body fat are common in women with underweight BMIs. A healthy amount of body fat is necessary to sustain a regular ovulation cycle, but low body fat can disrupt both ovulation and regular menstrual cycles, resulting in an overabundance of prostaglandin secretion. Furthermore, low estrogen production in slim women can lead to anomalies in their ovulation cycles.[15] As for the mechanism by which obesity affects dysmenorrhea, it is not yet clear. Obesity is

associated with the severity of dysmenorrhea. This is suspected because PGE2 can cause fat accumulation through PGE2 receptors. Additionally, overweight subjects are known to be sensitive to neuropathic pain.[16]

Most participants experienced menarche at the age of 12 years. Other studies also found almost half (70.1%) of the participants began menstruating before the age of 12 years.[3,14,17] Approximately 58.5% of the samples in this study reported regular menstrual cycles. Almanasef & Alqarni also reported the same, with most participants reporting regular menstrual cycles and normal menstrual flow.[3] The most common duration of menstruation was in the 2-7 day range (68.3%), with a pad changing frequency of 2-3 times (68.3%). Menstruation lasts for five days, with a significant degree of fluctuation in cycle duration (26–35 days), and the fertile period starts five days before ovulation. Endocrine, autocrine, and paracrine factors that govern ovarian follicle formation, ovulation, luteinization, luteolysis, and endometrial shedding are responsible for the strict regulation of menstrual cycles.[18] Another study also reported that students who experienced menarche at < 12 years old are more susceptible to experiencing dysmenorrhea.[19]

The majority of respondents reported a family history of dysmenorrhea, which is consistent with research conducted by Almanasef & Alqarni and Shrestha et al.[3,17] One of the determinants of dysmenorrhea is a family history of the condition. According to Azagew et al., women who have a family history of dysmenorrhea are five times more likely to develop the condition than those who do not.[12]

Self-medication is a step in choosing over-the-counter medications such as traditional, modern, or other herbal remedies that can alleviate pain.[9] Shrestha et al. reported that 36.62% of medical students with primary dysmenorrhea practiced self-medication. This differs from the findings of this study, presumably because the research participants involved in this study are high school students. The reasons for practicing self-medication include the easy availability of drugs, information from textbooks, the mildness of the illness, cost-effectiveness, convenience, lack of time to consult a doctor, and self-confidence in self-diagnosis. Other reasons why adolescent girls self-treat without consulting a doctor are believed to be due to feelings of embarrassment and the belief that the menstrual pain they experience is normal and therefore does not require medical advice.[17] The most commonly used medication here is paracetamol. Paracetamol is the most commonly used analgesic antipyretic medication to alleviate pain. Paracetamol has advantages in effectiveness, affordability, relative safety, and suitability for all ages, and has fewer significant side effects compared to NSAIDs.[20]

Factors influencing self-medication include socioeconomic status, lifestyle, access to medication, patient satisfaction with health services, medication prices, exposure to advertising, internet access and proficiency in its use, family influence, level of education, age, gender, pharmacist involvement, previously prescribed medications, or advice from advertisements in newspapers or popular magazines.[5] Knowledge level significantly correlates with self-medication behavior. The three main domains in human daily learning activities are cognitive, affective, and psychomotor. Knowledge is part of the cognitive domain, attitudes are part of the affective domain, while behavior is part of the psychomotor domain. These three variables are closely related and mutually influence each other. Individuals with sufficient to good knowledge levels are more likely to engage in self-medication for dysmenorrhea compared to those with lower

knowledge levels, thus promoting rational self-medication.[21–24] One limitation of this study is the lack of further investigation into possible gynecological disorders that may occur.

5. Conclusion

Dysmenorrhea is a common issue experienced by most women during menstruation. This can impact the quality of life, lead to school absenteeism, and decrease performance. Self-medication is a common practice among adolescent girls to manage dysmenorrhea. One of the key factors influencing self-medication behavior is the level of knowledge. Adequate knowledge about dysmenorrhea and pain-relieving medication is crucial to ensure safe and effective self-medication practices. Adolescent girls with good knowledge levels tend to engage in self-medication behavior. Therefore, by enhancing knowledge and awareness among adolescents regarding the management of this condition, it is hoped that self-medication behavior can be improved and ultimately enhance the condition of female students.

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