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ORIGINAL ARTICLE

Factors associated with self-medication practices of primary dysmenorrhea among students

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ABSTRACT

Self-medication and home remedies are the most frequently used methods to relieve menstrual discomfort among female college students. The practice of self-medication varies among adolescent female students. Therefore, this study aimed to observe and analyze the factors associated with the practice of self-medication for primary dysmenorrhea among university students.This study used an analytical observational design with a cross-sectional approach, involving 207 female health students from Universitas Prima Indonesia. The sample was obtained through a purposive sampling technique. Data analysis included univariate analysis, bivariate analysis (chi-square and Fisher's exact test), and multivariate analysis (logistic regression). The prevalence of self-medication was reported to be 36.7%. Several factors were found to be associated with self-medication practices for primary dysmenorrhea among students, namely menstrual cycle (p<0.001, OR: 3.27, 95% CI 1.75-6.10), duration of pain during menstruation (p<0.001 OR: 3.85, 95% CI 2.10-7.07), and severity of pain (p=0.009 OR: 2.21, 95% CI 1.24-3.93). In contrast, age (p=0.316), academic year (p=0.889), family history (p=0.470), age at menarche (p=0.223), and menstrual duration (p=0.552) did not show a statistically significant association with self-medication practices for primary dysmenorrhea. The dominant factor influencing self-medication practices for primary dysmenorrhea was pain duration. Notably, self-medication with medications was found to be relatively low among health students with primary dysmenorrhea. Therefore, educational programs that address the limitations of self-medication with drugs need to be implemented effectively.

Keywords: primary dysmenorrhea,self-medication, university students

Introduction

Self-medication is an important public health problem in many parts of the world. Patterns of self-medication vary from community to community and are influenced by factors such as age, gender, household income, expenditure, self-care orientation, level of education and medical knowledge.[1,2] Getting medical help outside of the healthcare system in many countries is pretty common for small health problems. It is often a cheap, quick, and easy way to get better. Most people get their medicines from pharmacies and trust what their family, friends, or past orders say.[3] Some of the most commonly used medications include pain relievers, fever reducers, cough and cold medicines, skin care products, dietary supplements, and antibiotics. There are potential risks associated with the use of these medications, including misdiagnosis, improper dosing, selection of inappropriate therapy, masking of symptoms of serious illness, and drug interactions.[4,5]

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Lack of comprehension of warnings and precautions, storage conditions, acceptable usage time limitations, and unpleasant responses can all raise the likelihood of side effects.

Primary dysmenorrhea is menstrual pain in the absence of underlying pelvic pathology, and is experienced by more than 50% of women of reproductive age worldwide. It is one of the most common gynecologic conditions in adolescents and young women, with a prevalence of 50-80%.[6,7] Primary dysmenorrhea has varying degrees of negative impact on a woman's physical, psychological, and social functioning, leading to short-term absences from study or work.[8,9] Despite the significant frequency of Parkinson's disease among teenagers and young women across the world, healthcare professionals and women themselves sometimes treat it badly or neglect it. Dysmenorrhea problems are divided into two categories: main and secondary.[8] Secondary dysmenorrhea is caused by the presence of clearly recognized pathological diseases, such as intrauterine devices, endometriosis, pelvic inflammatory disease, or ovarian cysts. Primary dysmenorrhea, on the other hand, is unrelated to pelvic health or hormonal disorders, and it is more frequent in teenage females.[10]

Dysmenorrhea can be accompanied with menstrual bleeding and an irregular menstrual cycle. This disease can be due to stress, which affects menstruation rhythms.[11] To moderate the resultant stress reaction, the glands that produce adrenaline release the stress hormone cortisol. This hormone inhibits the generation of reproductive hormones from the ovaries.[12] Menstrual pattern changes include irregular menstrual periods, excessive menstrual flow, irregular cycles, a lack of menstruation for several months, and increased discomfort during menstruation.[13] Cramps, back and thigh pain, migraines, diarrhea, nausea, and vomiting are all common symptoms of menstrual discomfort.[7] This condition will encourage women to look for drugs that provide quick relief regardless of the side effects. Nonpharmacological strategies, such as taking traditional herbs and controlling physical or psychological activity through meditation and yoga, can be used as alternatives to self-medication before deciding to take analgesics for pain relief.[14] However, this strategy is still rarely applied by young women.[15] Most people prefer to drink quick pain relievers or take over-the-counter medications like ibuprofen and/or acetaminophen without thinking about dose or negative effects.[16] As a result, the purpose of this study is to determine the incidence of primary dysmenorrhea self-medication among health students at Prima Indonesia University, as well as the factors that impact it. This research serves as the foundation for promotional and preventative activities by health workers, including pharmacists, because it includes screening and early evaluation of variables that might impact primary dysmenorrhea. Pharmaceutical education for teenage girls can be tailored to the elements that contribute to it, allowing for better control over the quality of life associated with women's health.

Method

This research is an analytical observational study with cross-sectional design. This research was conducted at Prima Indonesia University from January 2025 to April 2025. The study population was all health students with a sample size of 207 people. Gastritis data collection using a questionnaire. The dependent variable was the practice of self-treatment of primary dysmenorrhea. Data were collected using a structured questionnaire. Before data collection, each patient was asked to give written consent. Independent variables included age, academic year, family history, duration of menstruation, duration of pain, menarche, and severity of pain.This study begins with a tabular description of the characteristics of the study data. Chi-square test and Fisher's exact test were used to analyze the relationship between the independent variable and the dependent variable. A bivariate analysis was used to evaluate the potential variables that may affect the dependent variable. In addition, a multivariate logistic regression model was selected to identify the determinants of primary dysmenorrhea self-care practices. Variables were considered statistically significant if the p-value was <0.05. Odd ratios, with 95% confidence intervals, were reported for the significance of predictor variables on the outcome variable in the multivariate logistic regression analysis.

Results

The present investigation uses an analytical observational design with a cross-sectional approach. This study was carried out the Prima Indonesia University between January and April 2025. The study population consisted of each of the health students, with a total sample size of 207. A questionnaire was used to collect data about gastrotritis. The dependent variable was the habit of self-treating primary dysmenorrhea.

This study was conducted at Prima Indonesia University among 207 health students at Prima Indonesia University. Based on the univariate analysis of the respondents, the majority were adolescents or young

adults aged 20 years and younger (77.8%), distributed fairly evenly between the first and third academic years, with most experiencing menarche at the age of 13 years or younger (67.1%) and having a menstrual duration of more than 4 days (62.8%) with a regular cycle (72.5%). Regarding menstrual pain experience, the distribution between pain duration ≤ 1 day and > 1 day was almost equal, with about half of the respondents having a family history of primary dysmenorrhea (50.2%) and the majority reporting mild pain severity (38.2%), although most did not self-medicate their menstrual problems (63.3%). These results showed that the prevalence of self-medication for primary dysmenorrhea among health students at Prima Indonesia University was 36.7% (Table 1).

Table 1. T2DM patient characteristics (n=207)

Variable	n	%
Age		
≤ 20 years	161	77.8
> 20 years	46	22.2
Academic year		
1st year	75	36.2
2nd year	57	27.5
3rd year	56	27.1
4th year	19	9.2
Menarche		
≤ 13 years	139	67.1
> 13 years	68	32.9
Duration of bleeding		
≤ 4 days	77	37.2
> 4 days	130	62.8
Pattern of Menstrual cycle		
Reguler	147	71.0
Irreguler	60	29.0
Duration of pain		
≤ 1 days	105	50.7
> 1 days	102	49.3
Family history of pain		
Yes	104	50.2
No	103	49.8
Severity of pain		
Mild	128	61.8
Severe	79	32.2
Self-Medication Practices		
Yes	76	36.7
No	131	63.3

Table 2 shows the bivariate analysis of risk factors for primary dysmenorrhea self-medication practices. The results of the bivariate analysis revealed several relationships between the independent variables and self-medication practices. In the menstrual cycle variable, the group with irregular cycles showed a significantly higher tendency to practice self-medication. A total of 34 respondents (56.7%) with irregular cycles chose self-medication, compared to only 42 respondents (28.6%) from the group with regular cycles. Statistical analysis yielded a p value of <0.001, indicating a highly significant difference. Furthermore, the odds ratio (OR) value of 3.27 with a 95% confidence interval between 1.75 and 6.10 indicated that respondents with irregular menstrual cycles were 3.27 times more likely to self-medicate compared to those with regular cycles. Similarly, pain duration showed a strong association. Respondents who experienced pain with a duration > 1 day were significantly more likely to self-medicate, with 54 respondents (51.4%) choosing this option compared to only 23 respondents (22.5%) in the group with pain duration ≤ 1 day. This difference was highly statistically significant with a p value of <0.001. The OR value of 3.85 (95% CI: 2.10-7.07) indicates that respondents with pain duration were 3.85 times more likely to self-medicate.

Table 3 shows the results of the multivariate analysis, which aimed to identify factors independently associated with self-medication practices in cases of primary dysmenorrhea. After controlling for other variables in the model, the results showed that pain duration had a statistically significant association with self-medication practices (p value = 0.004). The regression coefficient (B) of pain duration was 1.121, with an Exp(B) value of 3.07. This indicates that women with longer pain duration are 3.07 times more likely to

practice self-medication. Meanwhile, the variables menstrual cycle (p-value = 0.163, Exp(B) = 2.03, 95% CI 0.75-5.49) and pain severity (p-value = 0.488, Exp(B) = 0.72, 95% CI 0.30-1.80) showed no statistically significant association with self-medication practices in this multivariate model. This means that after controlling for the effect of pain duration, menstrual cycle and pain severity did not independently influence the propensity of women with primary dysmenorrhea to self-medicate. Thus, pain duration was a significant independent predictor of self-medication practices among women with primary dysmenorrhea.

Table 2. Bivariate analysis based on primary dysmenorrhea self-medication practices

Variables	Self-Medication Practice				*p-value*	*Odd ratio (95% CI)*
	Yes		No			
	n	%	n	%		
Age						
≤ 20 years	62	38.5	99	61.5	0.316	1.43 (0.71-2.89)
> 20 years	14	30.4	32	69.6		
Menarche						
≤ 13 years	47	33.8	92	66.2	0.223	0.69 (0.38-1.25)
> 13 years	29	42.6	39	57.4		
Academic year						
1st – 2 ndyear	48	36.4	84	63.6	0.889	0.96 (0.53-1.72)
3 rd – 2 td year year	28	37.3	47	62.7		
Duration of bleeding						
≤ 4 days	26	33.8	51	66.2	0.552	0.82 (0.45-1.47)
> 4 days	50	38.5	80	61.5		
Pattern of Menstrual cycle						
Reguler	42	28.6	105	71.4	<0.001	3.27 (1.75-6.10)
Irreguler	34	56.7	26	43.3		
Duration of pain						
≤ 1 days	22	21.6	80	78.4	<0.001	3.85 (2.10-7.07)
> 1 days	54	51.4	51	48.6		
Severity of pain						
Mild	34	28.8	87	71.2	0.009	2.21 (1.24-3.93)
Severe	42	47.2	47	52.8		
Family history of pain						
Yes	41	39.4	63	60.6	0.470	1.26 (0.72-2.23)
No	35	36.7	68	66.0		

Table 3. Multivariate analysis based on primary dysmenorrhea self-medication practices

Variables	B	Exp (B)	95% C.I.for EXP(B)	*p-value*
Pattern of Menstrual cycle	0.708	2.03	0.75-5.49	0.163
Duration of pain	1.121	3.07	1.42-6.64	0.004
Severity of pain	-0.323	0.72	0.30-1.80	0.488

Discussion

Self-medication practices were found in 76 (36.7%) out of 207 students. The most commonly used drugs were non-steroidal anti-inflammatory drugs, mainly mefenamic acid and ibuprofen.[17,18] The practice of self-medication is very common among health students. It is facilitated by the easy availability of drugs and information from textbooks and seniors.[19] Other reasons may be the mild nature of the disease, cost-effectiveness, convenience, quick cure for common ailments, lack of time to consult a doctor, and confidence in self-diagnosis. Inappropriate self-medication usually leads to serious health hazards such as adverse drug reactions, prolonged pain and drug dependence, and increased resistance of pathogens in the case of antibiotics. In our study, more than one-third of university students reported self-medication for

dysmenorrhea. In a previous study, the frequency of self-medication among university students experiencing dysmenorrhea was 41.7% and 65%, respectively.[19,20]

The study shows that irregular menstrual cycles lead women to self-medicate. This may be because women who have irregular menstrual cycles tend to have more severe menstrual pain. In women with irregular cycles, hormonal imbalances may lead to irregular or excessive prostaglandin production prostaglandins may be produced in excess: Hormonal fluctuations can trigger the release of prostaglandins in larger amounts or at inappropriate times. Increased sensitivity of the uterus to prostaglandins: Hormonal imbalances can make the uterine muscles more sensitive to the contractile effects of prostaglandins, making contractions stronger and more painful.[21] This is also in line with the results of a study showing that women who have heavier menstrual pain tend to self-medicate.[15] Previous research suggests that people with prolonged pain are often driven to use over-the-counter painkillers or home remedies before considering or seeking professional medical advice.[3] Persistent pain may lead to a proactive approach to self-management of symptoms, particularly if previous experience has shown that self-medication is effective in providing temporary relief. Multivariate analysis revealed that pain duration was a significant independent predictor of self-medication for primary dysmenorrhea ($p=0.004$, $Exp(B) = 3.07$). This suggests that women who reported longer menstrual pain duration were almost three times more likely to self-medicate than women with shorter pain duration, even after controlling for other factors, such as cycle regularity and pain severity.

Women who reported longer duration of menstrual pain also showed a significant tendency to self-medicate. This occurs in response to persistent pain, which leads individuals to seek quick and easily accessible therapeutic solutions to relieve prolonged discomfort.[19] Long-lasting menstrual pain creates a greater symptom burden. It interferes with daily activities, work, sleep, and overall quality of life, creating an urge to seek independent pain relief.[22–24]

The current study has some limitations. The results of the current study are from one university with a small sample size. The study only included health students, which limits the ability to generalize the results, as health and allied health students receive various related courses, such as pharmacology. This is likely to have an impact on the treatment of dysmenorrhea and the ability to self-medicate. A multicenter study with a large sample of students from different disciplines is needed, which would allow the generalization and comparison of the results of the study.

Conclusion

This study indicate that the majority of T2DM patients within this study cohort were middle-aged and older adults. The predominant level of educational attainment was upper secondary or vocational schooling, with diverse occupations, primarily homemakers and self-employed individuals. A majority of patients reported no family history of diabetes. Over half of the patients reported non-adherence to their medication regimen, and the majority exhibited poor glycaemic control. Although descriptive analysis suggested a difference in medication adherence between the groups with good and poor glycaemic control, statistical analysis did not reveal a significant association between medication adherence and glycaemic control within this study cohort.

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