Factors influencing coping mechanisms for premenstrual syndrome among adolescents in Indonesia

Henny Dwi Susanti[1*], Rintan Rikawati[1], Ninik Yunitri[2], Christina Yeni Kustanti[3], Min-Huey Chung[4,5]

[1] Department of Nursing, Faculty of Health Science, University of Muhammadiyah Malang, Malang, East Java, Indonesia.
[2] Faculty of Nursing, University of Muhammadiyah Jakarta, Indonesia.
[3] Bethesda Yakkum College of Health Sciences, Indonesia.
[4] School of Nursing, College of Nursing, Taipei Medical University, Taipei, Taiwan
[5] Department of Nursing, Shuang Ho Hospital, Taipei Medical University, New Taipei City, Taiwan

Abstract

Background: Premenstrual syndrome (PMS) is a common reproductive health problem experienced by adolescent girls and can impact physical, psychological, and social well-being. Despite the high prevalence of PMS, research in Indonesia specifically examining factors influencing adolescents' coping mechanisms in dealing with PMS is still limited.
Purpose: This study aims to analyze social factors (social support), psychological factors (depression, anxiety, stress), and menstrual characteristics that influence the coping mechanisms of premenstrual syndrome in adolescent girls in Indonesia.
Methods: This is an observational analytical study with a cross-sectional design in 321 adolescent girls aged ≥12 years using a purposive sampling technique. Data were collected using the PMS-COPE questionnaire, the Multidimensional Scale of Perceived Social Support, the DASS-21, and demographic data. Data analysis was performed using logistic regression.
Results: The analysis showed that social support ($p < 0.001$) and menstrual cycle regularity ($p = 0.035$) were factors that significantly influenced PMS coping mechanisms in adolescents. Adolescents tended to use coping strategies based on social and enjoyable activities.
Conclusion: Social support and the menstrual cycle play important roles in shaping adolescents' coping mechanisms for PMS. Nursing interventions that emphasize strengthening social support and menstrual health education are needed to improve adolescents' adaptive coping.

Keywords: adolescent; coping mechanisms; menstrual cycle; premenstrual syndrome; social support

Introduction

Menstruation is a natural biological process in the female reproductive cycle that is influenced by hormonal changes and may be accompanied by various physical and psychological responses (Siegel et al., 2024). In some adolescent girls, the hormonal changes that occur before menstruation trigger physical, emotional, and behavioral symptoms known as premenstrual syndrome (PMS), which can potentially disrupt daily activities and an individual's well-being (Nappi et al., 2022). Premenstrual syndrome occurs cyclically during the luteal phase of the menstrual cycle and is characterized by symptoms such as abdominal pain, headaches, breast tenderness, fatigue, mood swings, anxiety, and disturbances in sleep and appetite (Modzelewski et al., 2024). In moderate to severe cases, PMS can reduce quality of life, hinder social functioning, and negatively impact academic performance in adolescent girls

(Allegranzi et al., 2021). This situation makes PMS a health issue that is not only an individual concern but also has an impact on public health. Factors that can influence premenstrual syndrome (PMS) include

OPEN ACCESS

Jurnal Keperawatan Padjadjaran (JKP)

Volume 14(2), 246-256
© The Author(s) 2026
http://dx.doi.org/10.24198/jkp.v14i2.2699

Article Info

Received : January 01, 2025
Revised : March 02, 2026
Accepted : March 13, 2026
Published : August 28, 2026

Corresponding author

Henny Dwi Susanti*
Department Of Nursing, Faculty Of Health Science, University Of Muhammadiyah Malang, Malang, East Java, Indonesia.; Address: Jl. Bendungan Sutami No. 188-A Malang 65145 Telp. 0341-551149, 552443 Fax. 0341-582060; Phone: (+62) 85132478155; E-mail: hennydwi@umm.ac.id

Citation

Susanti, H.D., Rikawati, R., Yunitri, N., Kustanti, C.Y., & Chung, M.H. (2026). Factors influencing coping mechanisms for premenstrual syndrome among adolescents in Indonesia. *Jurnal Keperawatan Padjadjaran, 14*(2), 246-256. http://dx.doi.org/10.24198/jkp.v14i2.2699

Website

http://jkp.fkep.unpad.ac.id/index.php/jkp

This is an **Open Access** article distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License.

E-ISSN: 2442-7276
P-ISSN: 2338-5324

psychological, physiological, and social aspects. From a psychological perspective, high stress levels can exacerbate PMS symptoms, while maladaptive coping strategies can worsen the emotional and physical effects. Physiological factors, such as imbalances in estrogen and progesterone levels during the menstrual cycle, also contribute to the severity of symptoms. In addition, poor sleep patterns, lack of physical activity, and deficiencies in certain nutrients—such as magnesium and vitamin B6—can also worsen symptoms. Social factors, including support from family and friends, play a role in helping adolescents manage PMS symptoms more effectively; those with a supportive social environment tend to use more adaptive coping mechanisms (Kaiser et al., 2018).

A study conducted by Jasim & Alzubaidi (2024) found that activities such as sleeping, getting a massage, listening to music, getting enough rest, and drinking coffee in moderation are the most effective ways to manage premenstrual symptoms. In addition, according to (Huew et al., 2024) mindfulness techniques or counseling can help adolescents manage their stress and emotions. The methods a person uses to deal with stress and problems, including premenstrual symptoms, are known as coping mechanisms (Keten Edis & Keten, 2023). According to a study conducted by Parveen et al., (2024), mild symptoms such as fatigue or irritability can prevent a person from using simple adaptive coping techniques, such as distraction or exercise. Factors such as diet, physical activity, and stress levels can affect how effective a particular method is in managing PMS (Wochekaw et al., 2024).

Adolescents who experience premenstrual syndrome (PMS) tend to use at least one coping mechanism to manage their symptoms. Coping strategies are used by individuals to face and manage PMS symptoms. Research shows that adaptive coping mechanisms, such as relaxation techniques, physical activity, and stress management, can help reduce the impact of PMS. Conversely, ineffective coping mechanisms, such as avoidance or the use of medications without medical supervision, can worsen symptoms and increase discomfort (Aperribai & Alonso-Arbiol, 2020). Previous research has examined the factors contributing to stress among college students, the levels of stress they experience, and the coping mechanisms they use to manage it. This study identifies several major causes of stress among college students, such as academic pressure, tight deadlines, challenging exams, and social issues with peers. Additionally, the study found that students who use more adaptive coping mechanisms, such as time management and relaxation techniques, are able to reduce their stress levels and cope with stress more effectively. Conversely, those who rely on unhealthy coping mechanisms, such as alcohol or drug abuse, experience increased stress and negative effects on their mental health (Alkhawaldeh et al . , 2023).

A previous study showed that 49.4% of college students did nothing to manage PMS; 41% took pain relievers, and 17.7% exercised to manage the pain. These findings indicate that many adolescents lack effective coping strategies for dealing with PMS (Shippy & Ulland, 2020). In addition, a study by Davison et al. (2021) conducted among adolescent girls found that 67% of respondents experienced PMS, and the majority (65%) of them used maladaptive coping mechanisms, such as denial and avoidance. Furthermore, Eshetu et al. (2022) at Wolkite University in Ethiopia found that of 591 respondents, 37.9% experienced premenstrual symptoms and used coping mechanisms such as sleep and rest. Meanwhile, a study by Pradana (2020) found that 64.2% of adolescent girls in Indonesia used adaptive coping mechanisms to manage primary dysmenorrhea. This situation highlights the importance of raising public awareness and developing more organized interventions to address PMS as a public health issue (Gao et al., 2021). Research on coping mechanisms during menstruation remains limited in Indonesia, particularly among adolescent girls, and there are significant variations in prevalence. Consequently, it is difficult to generalize the findings of this study (Kumbeni et al., 2021) . Therefore, it is crucial to conduct research in Indonesia to provide scientific evidence that can serve as a foundation for developing effective interventions.

Premenstrual syndrome (PMS) is a condition experienced by most adolescent girls and can affect their physical, emotional, and social well-being. However, in Indonesia, understanding of effective strategies for managing PMS remains limited, while the factors influencing it have not been extensively studied within specific cultural and social contexts.

In Indonesia, research on PMS in adolescent girls is still dominated by studies on prevalence and physical symptoms, such as primary dysmenorrhea (Pradana, 2020). Research specifically examining the mechanisms underlying the management of PMS, as well as the physiological, psychological, and social factors that influence it, remains limited; therefore, the available scientific evidence is insufficient to support the development of comprehensive nursing interventions and health promotion programs (Kumbeni et al., 2021). A lack of understanding and education about PMS, as well as effective coping strategies, has the potential to increase the risk of psychological disorders, decreased academic productivity, and barriers to social interaction among adolescent girls. These limitations result in suboptimal approaches to managing PMS in adolescents, which tend to be symptomatic in nature. Therefore, research analyzing PMS coping mechanisms and the factors influencing them within the Indonesian social and cultural context is urgently needed as a foundation for developing promotive and preventive interventions tailored to adolescents' needs. This study aims to identify coping mechanisms and factors influencing

premenstrual syndrome among adolescents in Indonesia. The uniqueness of this study lies in its comprehensive analytical approach to PMS coping mechanisms, taking into account the local cultural context; therefore, this study is expected to make a tangible contribution to the development of more effective adolescent health interventions and public health policies.

Materials and Methods

Design

An observational analytical study with a cross-sectional design was conducted on 321 female adolescents aged 12-24 years using purposive sampling.

Examples and settings

The sample size for this study was determined using the G-POWER statistic, which yielded a minimum of 71 participants. Considering a 20% dropout rate, the required sample size was 321 participants. Overall, the total number of participants in this study was 321 .

Inclusion Criteria: 1. Teenage girls (12-24 years); 2. Able to use verbal communication; 3. There is no limit to the menstrual cycle; 4. Have no history of mental and gynecological illness.; 5. Do not take antidepressants, etc.; 6. Teenage girls who have experienced menstruation.

Exclusion Criteria: 1. Pregnant and breastfeeding women; 2. Menopausal women.

Variables

This study includes two categories of variables: independent variables and dependent variables. The independent variables in this study include demographic characteristics, social support, psychological factors, and menstrual characteristics. The dependent variable is coping mechanisms for premenstrual syndrome.

Instrument

Premenstrual Change Coping Inventory Questionnaire (PMS-Cope)

This study used a coping mechanism instrument for premenstruation created by Kaiser et al., (2018) , namely the Premenstrual Change Coping Inventory (PMS-Cope). This instrument consists of 17 questions consisting of 3 subscales. The subscale for seeking positive impact behavior consists of 7 questions, namely numbers 1-7, the subscale for seeking support consists of 5 questions, namely numbers 8-12, and the subscale for using health services consists of 5 items, namely numbers 13-17. The assessment on the PMS-Cope uses a Likert scale consisting of: disagree (1), doubt (2), agree (3), and strongly agree (4).

Multidimensional Perceived Social Support Questionnaire (MPSS)

This study used a social support instrument, namely the Multidimensional Perceived Social Support (MPSS) developed by Zimet et al., (1988) . This instrument consists of 12 questions consisting of a Partner Subscale with a total of 4 items (1, 2, 5, & 10), a Family Subscale with a total of 4 items (3, 4, 8, & 11), and a Friend Subscale with a total of 4 items (6, 7, 9, & 12). The MPSS is a tool to measure how much a person feels socially supported by family members, friends, and romantic partners. This questionnaire consists of twelve items divided into three main dimensions: social support (4 items), emotional support (4 items), and instructional support (4 items). Each dimension measures a different aspect of social support, such as feeling valued and cared for (emotional), practical help and information provided (instructional), and a sense of community and social bond (social). In the MPSS, ratings are made using a Likert scale, which typically consists of five options: strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5). The sum of the scores for each item in each dimension is used to generate a total score for each dimension. Lower scores indicate lower perceptions of social support, while higher scores indicate greater levels of social support. The MPSS is useful for assessing how social support can impact a person's social and psychological well-being and for providing insight into areas that may require additional support or attention.

DASS 21 Questionnaire

In this study, the psychological change instrument created by Lovibond and Lovibond (1995), DASS 21, consists of twenty-one questions that address three topics: depression, anxiety, and stress. The depression domain consists of 7 questions, namely numbers 1, 6, 8, 11, 12, 14, and 18. The anxiety domain consists of 7 questions, namely numbers 2, 4, 7, 9, 15, 19, and 20. Scoring on the DASS 21 uses a Likert scale, which usually consists of four answer choices, namely: does not happen to me (1), sometimes (2), quite often (3), and very often (4) (Susanti et al., 2022) .

Data collection

The data collection process in this study began with the development of a structured questionnaire, designed to evaluate coping mechanisms and factors influencing premenstrual syndrome (PMS) in adolescents. The questionnaire consisted of several sections, including demographic questions, a Likert scale to measure the treatment methods used by respondents, and questions measuring the intensity of PMS symptoms experienced by adolescents. To collect respondents, a purposive sampling method was used, in which a total of 325 participants were selected based on certain criteria relevant to the research objectives. However, after the selection stage, four respondents were excluded because they did not meet the inclusion criteria, leaving a total of 321 respondents eligible for this study.

Table 1. Demographic characteristics of adolescents in Indonesia (n = 321)

Variabel	Mean	SD	Frekuensi (n)	Presentase (%)
Age	2,87	0,334		
Middle teens			41	12,8%
Late teens			280	87,2%
Religion				
Muslim			313	97,5%
Non-muslim			8	2,5%
Ethnic				
Java			137	42,7%
Non Java			184	57,3%
Marital status				
Married			8	2,5%
Unmarried			313	97,5%
Last Education				
Low			291	90,7%
High			255	9,3%
Work				
Unemployd			255	79,4%
Employed			66	20,6%
Income (IDR/month)				
Low			182	56,7%
High			139	43,3%
Social Activity				
No			221	68,8%
Yes			100	31,2%
Menstrual period				
Normal			254	79,1%
Not normal			67	20,9%
Menstrual Cycle				
Normal			318	98,8%
Not normal			4	1,2%
Cycle Of Regularity				
regular			238	74,1%
irregular			83	25,9%
History of disease				
Yes			55	17,1%
No			266	82,9%
Age of Menarche				
Normal			247	76,9%
Not normal			74	23,1%
Residence				
Rural			229	71,3%
Urban			92	28,7%

Cont. Table 1.Demographic characteristics of adolescents in Indonesia (n = 321)

Variabel	Mean	SD	Frekuensi (n)	Presentase (%)
Sports Activities				
No			99	30,8%
Yes			222	69,2%
Disminore				
No			87	27,1%
Yes			234	72,9%
Smoking history				
No			313	97,5%
Yes			8	2,5%
family in the home				
Nuclear family			261	81,3%
Outside the nuclear family			60	18,7%
Sosial support	2,53	0,536		
low			6	1,9%
medium			139	43,3%
high			176	54,8%
Psychological changes	37,07	19,454	321	100%
Coping mechanism	1,78	0,416		
Adaptive			250	22,1%
Maladaptive			71	77,9%

Table 2. Coping Mechanisms in Dealing with PMS in Adolescents in Indonesia (n = 321)

Coping Mechanisms	Frekuensi (n)	Presentase (%)
I occupy myself with things I enjoy.	298	93
I distract myself.	192	60
I purposefully induce positive feelings.	278	87
I make time for my hobbies.	273	85
I get in motion.	270	84
I have my personal strategies to deal with symptoms (e.g.,hot-water bottle, hot bath, etc.).	222	69
I meet friends.	284	89
I talk with friends about my symptoms.	161	50
I purposely look for advice and support from other people.	225	70
I talk to my partner or a close friend about my complaints.	223	69
I seek comfort and understanding from others.	184	57
I exchange views with other women concerned.	230	72
I increasingly look for information about my physical complaints.	242	75
I look for new treatment options.	158	49
I try different alternative treatment options (e.g., evening primrose oil, light therapy, homeopathy, etc.)	104	32
I take medication form by physical complaints.	163	51
I avoid certain foods.	185	58

Table 3. Relationship between demographic characteristics, social support, psychological changes and coping mechanisms in adolescents in Indonesia (n = 321)

Variable	Coping mechanism	
	Chi-square	P Value
Age	177.947a	0,000a**
Ethnic	6.882a	0,009a
Marital status	289,798a	0,000a**
Smoking history	289,798a	0,000a**
Cycle of Regularity	74,844a	0,000a**
History of disease	138.695a	0,000 a **
Disminore	67,318a	0,000 a **
family in the home	125,860a	0,000 a **
Social Activity	45,611a	0,000 a **
Religion	289,798a	0,000 a **
Work	111,280a	0,000 a **
Last Education	212,215a	0,000 a **
Residence	58,470a	0,000 a **
Sports Activities	47,131a	0,000 a **
Age of Menarche	94,613a	0,000 a **
Menstrual period	108,938a	0,000 a **
Family Income (IDR/month)	5,513a	0,019
Menstrual Cycle	305,199a	0,000 a **
Sosial support	158,972a	0,000 a **
Psychological changes	182,421a	0,000 a **

Note: achi-square, ** p-value < 0.001

Table 4. Factors influencing coping mechanisms in adolescents in Indonesia (n = 321)

							95 % CI	
	B	S.E	Wald	df	Sig.	Exp(B)	Lower	Upper
Menstrual cycle	2.506	1.191	4.427	1	.035*	.082	.008	.842
Social Support	1.008	.287	12.341	1	.000**	.365	.208	.640

Note: ** p-value < 0.001, * p-value < 0.05

During the four-month data collection period, participants were asked to complete an online questionnaire. Before beginning the questionnaire, all participants provided informed consent explaining the purpose of the study, the procedures to be undertaken, and their rights as respondents, including the right to withdraw from participation at any time without consequence. All procedures conducted during this study were approved by the Research Ethics Committee of the University of Muhammadiyah Malang, which ensured that the study adhered to applicable ethical standards.

Data analysis

Data were analyzed using SPSS version 26. Univariate analysis was performed to understand basic data characteristics, such as frequency, mean, median, and standard deviation. For categorical variables, percentages were calculated to describe the prevalence of each category. Bivariate analysis using chi-square and multivariate analysis using logistic regression were used in this study because the dependent variable was categorical. Logistic regression allows researchers to explore the relationship between one or more independent variables and a nominal dependent variable. In a study conducted by Zhang (2023), logistic regression analysis was used to identify factors independently influencing coping mechanisms (PMS).

Ethical considerations

This research has been approved by the Research Ethics Committee of the Faculty of Health, University of Muhammadiyah Malang, Indonesia on July 18, 2024 (approval number: E.4.d/007/KEPK/FIKES-UMM/VII/2024).

Results

Univariate Analysis

Univariate analysis was conducted on research variables that included demographic characteristics of the sample consisting of age, province of origin, marital status, smoking history, age of menarche, menstrual cycle, cycle regularity, menstrual duration, previous medical history, history of dysmenorrhea, family at home, social activities, religion, occupation, last education, family income, residence, sports activities, social support, and psychological changes (depression, anxiety, stress) as well as coping mechanisms.

Of the 321 samples, the distribution of characteristics by age showed that 280 (87.2%) of the late adolescent sample outnumbered the 41 (12.8%) of the mid-adolescent sample. The predominance of Muslim (97.5%) and non-Muslim (2.5%) respondents indicates a strong cultural context in this study. Previous research has examined how menstrual stigma and restrictions affect adolescent girls across various religious and cultural contexts. These studies have shown that social restrictions, such as restrictions on activities during menstruation and menstrual stigma, can damage adolescent girls' self-esteem and leave them feeling isolated and ashamed. This can negatively impact their mental health and impact how they cope with PMS symptoms (King et al., 2025) . Therefore, it is crucial to emphasize menstrual health education and cultural change to promote a more open and positive acceptance of menstruation.

The majority of respondents were unmarried (97.5%), while married respondents (2.5%), which can affect social dynamics and reproductive health. The low education category (90.7%) and the secondary education category (9.3%). Classified as Unemployed (79.4%) and Employed (20.6%). Low family income (56.7%) and high (43.3%). Participating in social activities (31.2%) and not participating in social activities (68.8%). The sample was classified into Normal (98.8%) and Abnormal (1.2%). Regular cycles (74.1%) and Irregular (25.9%). History of disease (17.1%) and no history of disease (82.9%). Normal age of menarche (76.9%) and abnormal (23.1%). The sample came from rural (71.3%) and urban (28.7%). Of the 321 samples, respondents who had sports activities (69.2%) and did not have sports activities (30.8%). Menstrual pain was experienced by 72.9% of respondents, and no pain during menstruation by 27.1%. Most respondents had no smoking history (97.5%), and those with a smoking history (2.5%), which has a positive impact on long-term health. The dominance of the nuclear family at home was 81.3% and outside the nuclear family 18.7%. The sample had low social support (1.9%), moderate (43.3%), and high (54.8%). The psychosocial changes in this study had an average value of 37.07. High social support is positively associated with mental and physical health. Previous research has shown that social support and engaging in mood-enhancing activities are significantly associated with reducing the severity of PMS symptoms. Social support has been shown to be a key factor in effective coping strategies (Akın & Erbil, 2024) .

Of all study participants, 321 adolescents used at least one coping mechanism to cope with PMS symptoms, regardless of symptom severity. Among these mechanisms, "I occupy myself with things I enjoy" was the most common method used by 298 participants (93%), followed by "I meet with friends" by 284 participants (89%) (Table 2).

Bivariate Analysis

Bivariate analysis was used to assess the relationship between demographic data (age, province of origin, marital status, smoking history, age of menarche, menstrual cycle, cycle regularity, menstrual duration, medical history, dysmenorrhea, family members living in the same house, social activities, religion, occupation, last education, family income, residence, sports activities, social support) and psychological changes (depression, anxiety, stress) with premenstrual coping mechanisms.

Bivariate test results using chi-square analysis, from 321 samples used for factors related to premenstrual coping mechanisms showed that almost all variables had a significant relationship with the coping mechanisms of adolescent girls in Indonesia (p-value <0.05). This finding confirms the importance of demographic, social, and biological factors in influencing how adolescents cope with premenstrual symptoms (Van Heugten-van der Kloet & Lynn, 2020) .

Table 3 shows that all variables have a significant relationship with each other. With the p-value for each variable being smaller (P=0.000) than 0.05, this indicates a significant relationship with coping mechanisms.

Multivariate Analysis

Variables that are candidates for the multivariate model are independent variables that have a p-value <0.05 in the logistic regression analysis (Kullolli et al., 2024) . Based on Table 4, the results of the logistic regression test show that the factors that influence coping mechanisms for premenstruation are social support (p-value 0.000) and the menstrual cycle (p-value 0.035).

Table 4 shows the p-values for social factors (p-value 0.000) and menstrual cycle factors (p-value 0.035). This indicates a significant influence on coping mechanisms.

Discussion

Demographic data, independent variables (social support and psychological changes), and dependent variables from respondents covered various aspects such as age, religion, ethnicity, marital status, last education, occupation, income,

social activities, menstrual cycle, and social support. From the data analysis, it can be seen that the majority of respondents were late adolescents. The results of this study are in line with research conducted by Keten Edis & Keten, (2023) which stated that approximately 80% of adolescent girls experience premenstrual symptoms. This reflects the high prevalence of PMS among adolescent girls, especially the late adolescent phase which shows better coping mechanisms. This is caused by hormonal changes that occur during adolescence, as well as a lack of knowledge about how to manage symptoms. In terms of ethnicity, most respondents came from outside Java. Research by Harris et al., (2024) showed that ethnic background can influence access to health services. And the majority of respondents were Muslim. This is in line with research by Ayun et al., (2024) which highlighted the influence of religion on mental health and social behavior. Most respondents were unmarried.

According to research by Alkhawaldeh et al . (2023), this study explored stress levels in adolescents when facing stress. Research by Eshetu et al. (2022) found that family income influenced students' choice of coping mechanisms to deal with PMS symptoms. This study showed that students with lower family incomes tended to use less effective coping mechanisms, such as sleep and rest, compared to students with higher family incomes. Furthermore, social activities were a concern because most respondents did not engage in social activities. Lack of social activities can lead to social isolation and mental health problems. Research by Attia et al (2023) found that socially active students used various coping mechanisms to deal with PMS, including exercise and rest. Social activities reduced PMS symptoms, demonstrating the important role of social support in health management. Although many people experience menstrual problems, the fact is that most respondents have a normal menstrual cycle, which is important for reproductive health. In previous research, 73.9% of students had regular menstrual cycles and 41.1% experienced PMS. This study shows that students use various coping strategies, such as conflict avoidance and self-care practices. This suggests that awareness and acceptance of premenstrual changes influence how women cope with PMS symptoms (Keten Edis & Keten, 2023) . This study also shows that regular exercise can significantly reduce PMS symptoms and also suggests that exercise can improve the physical and mental well-being of adolescents (Ayyub et al., 2024).

According to Dysmenorrhea, the majority of the sample experienced pain during menstruation. The high rate of dysmenorrhea indicates a health problem faced by adolescent girls. Previous research has shown that dysmenorrhea almost completely affects the ability to cope with menstrual pain. Previous research indicates that premenstrual syndrome (PMS) affects approximately 47.8% of women of reproductive age. In this context, family support, especially from the nuclear family, can play a significant role in reducing PMS symptoms through adaptive coping mechanisms such as seeking social support and positive activities (Akın & Erbil, 2024). In terms of social support, the majority of respondents reported high levels of social support. High levels of social support are positively associated with mental and physical health. Previous studies have shown that social support and engagement in mood-boosting activities are significantly associated with reduced severity of PMS symptoms. Social support has been shown to be a key factor in effective coping strategies (Akın & Erbil, 2024). Nearly all respondents experienced psychological problems. Based on Psychological Changes, all respondents experienced psychological changes during adolescence, a critical phase in the development of self-identity and emotions. This study indicates that adolescent girls experience maladaptive coping patterns before menarche. The results indicate that the premenstrual phase is associated with decreased emotional and psychological well-being, and these problems decrease after menstruation begins. This study emphasizes the importance of physical and mental health during menstruation (Kochhar & Ghosh, 2022).

The study found that adolescents who exercised regularly reported less severe PMS symptoms and used more positive coping strategies. There was a significant association between physical activity and decreased PMS symptoms in adolescents. This is consistent with previous research that found that adolescents who exercised regularly reported lower levels of PMS symptoms and pain (Wochekaw et al., 2024). Adolescents who experience menarche earlier may face additional psychological challenges, such as stigma or social anxiety. Age at menarche can also influence their subsequent menstrual experiences and how they cope (Marques et al., 2022). Menstrual periods can impact adolescents' comfort and ability to perform daily activities during their periods. Research has shown that adolescents with longer menstrual periods are more likely to experience more severe PMS symptoms (Maity et al., 2022). Research by Yunike et al. (2024) found that menstrual cycle abnormalities are often associated with increased stress and difficulty managing symptoms, and the relationship between family income and access to health resources and education about reproductive health influences how adolescents manage PMS symptoms. A study showed that social support is very important for the mental health of adolescent girls during the premenstrual period and psychological changes such as anxiety and depression can worsen PMS symptoms (Zimet et al., 1988).

The results of the multivariate logistic regression analysis indicate that social support and the menstrual cycle significantly influence coping mechanisms in adolescent girls facing premenstrual symptoms. Both variables are considered to have a significant

influence, with a p-value of <0.05. This indicates that these variables contribute to adolescents' ability to control their premenstrual coping mechanisms. The interaction between biological, psychological, and social elements influences coping mechanisms, according to George Engel's psychosocial theory proposed in 1977 (Rejeki et al., 2024) premenstrual-related stress .

This study could help develop better interventions to help adolescents manage PMS. The results could be used to develop educational programs that raise awareness about PMS, reduce stigma, and increase social and cultural support. Furthermore, the study's findings could lead to health policy changes that support adolescents' mental and physical well-being to help them manage PMS symptoms.

Conclusion

This study shows a relationship between demographic variables, social support, and psychological changes with premenstrual coping mechanisms. Furthermore, adolescents engage in enjoyable activities and interact with friends. Factors influencing premenstrual coping mechanisms include social support and the menstrual cycle.

Based on the findings of this study, one of the most important nursing practices is encouraging adolescents to participate in social activities and interact with friends as an effective coping mechanism for managing PMS symptoms. Nurses can help adolescents participate in enjoyable activities and positive social interactions. Physical and social activities can help distract from PMS symptoms, reduce stress, and improve their emotional well-being. Nurses can also help adolescents feel more supported and connected to others by providing health education about PMS symptoms and organizing group discussions or social activities in a supportive health environment. These methods can improve their mood and help them cope adaptively with PMS symptoms.

Statement of Interest

The authors have no conflicts of interest to disclose.

Confession

The authors sincerely thank Kaiser for his permission and provision of the questionnaire, which was crucial for data collection in this study. The developed questionnaire significantly contributed to obtaining valid and relevant data to support the research findings. The authors hope that his work and dedication will continue to benefit the scientific community.

Thanks are also extended to Wallace Academic Editing for their assistance in improving the grammar and usage of English in this paper.

Funding

The authors declare that no funding was received for this research.

Data Availability

Data are available upon request from the authors.

References

Akın, Ö., & Erbil, N. (2024). Investigation of coping behaviors and premenstrual syndrome among university students. *Current Psychology, 43*(2), 1685–1695. https://doi.org/10.1007/s12144-023-04419-1

Alkhawaldeh, A., Al Omari, O., Al Aldawi, S., Al Hashmi, I., Ann Ballad, C., Ibrahim, A., Al Sabei, S., Alsaraireh, A., Al Qadire, M., & Albashtawy, M. (2023). Stress factors, stress levels, and coping mechanisms among university students. *The Scientific World Journal, 2023,* Article 2026971. https://doi.org/10.1155/2023/2026971

Allegranzi, B., Tartari, E., & Pittet, D. (2021). "Seconds save lives – clean your hands": the 5 May 2021 World Health Organization save lives: clean your hands campaign. *Journal of Hospital Infection, 111*(1), 1–3. https://doi.org/10.1016/j.jhin.2021.03.001

Aperribai, L., & Alonso-Arbiol, I. (2020). The role of mental health variables and coping strategies in premenstrual syndrome. *Health Care for Women International, 41*(3), 368–379. https://doi.org/10.1080/07399332.2019.1663193

Attia, G. M., Alharbi, O. A., & Aljohani, R. M. (2023). The impact of irregular menstruation on health: A review of the literature. *Cureus, 15*(11), e49146. https://doi.org/10.7759/cureus.49146

Ayun, Q., Taufik, T., & Ruhaena, L. (2024). The role of religious coping in psychological distress among university students: A scoping review. *Psikobuletin: Buletin Ilmiah Psikologi, 5*(2), 115–125. https://doi.org/10.24014/pib.v5i2.26954

Ayyub, S., Agrawal, M., Sharma, V., & Aravind, A. (2024). The effect of physical activity on premenstrual syndrome: A systematic review. *Annals of Neurosciences, 32*(4), 315–320. https://doi.org/10.1177/09727531241297012

Bass, J. D., Marchant, J. K., de Sam Lazaro, S. L., & Baum, C. M. (2024). Application of the person–environment–occupation–performance model: a scoping review. *OTJR: Occupational Therapy Journal of Research, 44*(3), 521–540. https://doi.org/10.1177/15394492241238951

Davison, K. M., Thakkar, V., Lin, S., Stabler, L., Macphee, M., Carroll, S., Collins, B., Rezler, Z., Colautti, J., Xu, C., Fuller-Thomson, E., Hey, B., Kelly, K., Mullaly, L., Remick, R., Ravindran, A., Paric, A., D'andreamatteo, C., & Smye, V. (2021). Interventions to support mental health among those with health conditions that present risk for severe infection from coronavirus disease 2019 (COVID-19): a scoping review of English and Chinese-language literature. *International Journal of Environmental Research and Public Health,*

18(14), Article 7265. https://doi.org/10.3390/ijerph18147265

Eshetu, N., Abebe, H., Fikadu, E., Getaye, S., Jemal, S., Geze, S., Mesfin, Y., Abebe, S., Tsega, D., Tefera, B., & Tesfaye, W. (2022). Premenstrual syndrome, coping mechanisms and associated factors among Wolkite university female regular students, Ethiopia, 2021. *BMC Women's Health, 22*(1), 1–11. https://doi.org/10.1186/s12905-022-01658-5

Gao, M., Gao, D., Sun, H., Cheng, X., An, L., & Qiao, M. (2021). Trends in research related to premenstrual syndrome and premenstrual dysphoric disorder from 1945 to 2018: A bibliometric analysis. *Frontiers in Public Health, 9,* Article 596128. https://doi.org/10.3389/fpubh.2021.596128

Harris, R., Cormack, D., Waa, A., Edwards, R., & Stanley, J. (2024). The impact of racism on subsequent healthcare use and experiences for adult New Zealanders: A prospective cohort study. *BMC Public Health, 24*(1), 1–11. https://doi.org/10.1186/s12889-023-17603-6

Huew, R. M., Elshebani, S. B., Alaskandrani, R. B., Abozed, M. A., & Ahmed, N. (2024). Dental practitioners' knowledge and attitude regarding the use of silver diamine fluoride for the management of dental caries. *Journal of Advance Medical Sciences, 4*(3), 1–7. https://dzarc.com/medical/article/view/581

Jasim, M., & Alzubaidi, M. (2024). The correlation between coping mechanisms and premenstrual syndrome among female nursing students in Al-Najaf Province. *Journal of Advance Medical Sciences, 4*(1), Article 1667. https://dzarc.com/medical/article/view/445

Kaiser, G., Kues, J. N., Kleinstäuber, M., Andersson, G., & Weise, C. (2018). Methods for coping with premenstrual change: Development and validation of the German premenstrual change coping inventory. *Women and Health, 58*(9), 1062–1079. https://doi.org/10.1080/03630242.2017.1377802

Keten Edis, E., & Keten, M. (2023). Premenstrual syndrome experiences and coping levels of university students: A mixed method study. *Bezmialem Science, 11*(3), 308–314. https://doi.org/10.14235/bas.galenos.2023.86547

King, A. S., Sikkema, K. J., Rubli, J., DeVries, B., & Cherenack, E. M. (2025). "Due to these restrictions, girls think of themselves as nothing": a qualitative and quantitative description of menstrual restrictions and stigma among adolescent girls across religious and other sociocultural contexts. *Journal of Adolescence, 97*(4), 901–916. https://doi.org/10.1002/jad.12463

Kochhar, S., & Ghosh, S. (2022). Impact of menstruation on physical and mental health of young adolescent girls. *International Journal of Health Sciences, 6*(April), 6693–6713. https://doi.org/10.53730/ijhs.v6ns2.6627

Kullolli, T., Trebicka, B., & Fortuzi, S. (2024). Understanding customer satisfaction factors: A logistic regression analysis. *Journal of Educational and Social Research, 14*(2), 218–231. https://doi.org/10.36941/jesr-2024-0038

Kumbeni, M. T., Ziba, F. A., Apenkwa, J., & Otupiri, E. (2021). Prevalence and factors associated with menstruation-related school absenteeism among adolescent girls in rural northern Ghana. *BMC Women's Health, 21*(1), 1–6. https://doi.org/10.1186/s12905-021-01418-x

Li, L., Lv, X., Li, Y., Zhang, X., Liu, M., & Cao, Y. (2023). Development and validation of risk prediction model for premenstrual syndrome in nurses: Results from the nurses-based the target cohort study. *Frontiers in Public Health, 11*, Article 1203280. https://doi.org/10.3389/fpubh.2023.1203280

Maity, S., Wray, J., Coffin, T., Nath, R., Nauhria, S., Sah, R., Waechter, R., Ramdass, P., & Nauhria, S. (2022). Academic and social impact of menstrual disturbances in female medical students: A systematic review and meta-analysis. *Frontiers in Medicine, 9,* Article 821908. https://doi.org/10.3389/fmed.2022.821908

Marques, P., Madeira, T., & Gama, A. (2022). Menstrual cycle among adolescents: Girls' awareness and influence of age at menarche and overweight. *Revista Paulista de Pediatria, 40*. https://doi.org/10.1590/1984-0462/2022/40/2020494

Modzelewski, S., Oracz, A., Żukow, X., Iłendo, K., Śledzikowka, Z., & Waszkiewicz, N. (2024). Premenstrual syndrome: New insights into etiology and review of treatment methods. *Frontiers in Psychiatry, 15,* Article 1363875. https://doi.org/10.3389/fpsyt.2024.1363875

Mu, S. S., Preethi, B., Meena, T. S., & Washington, J. K. (2024). Study of prevalence of premenstrual syndrome (PMS) among healthcare workers in a tertiary care hospital Chennai. *Texila International Journal of Public Health, 12*(3), Article Art022. https://doi.org/10.21522/TIJPH.2013.12.03.Art022

Nappi, R. E., Cucinella, L., Bosoni, D., Righi, A., Battista, F., Molinaro, P., Stincardini, G., Piccinino, M., Rossini, R., & Tiranini, L. (2022). Premenstrual syndrome and premenstrual dysphoric disorder as centrally based disorders. *Endocrines, 3*(1), 127–138. https://doi.org/10.3390/endocrines3010012

Parveen, S., Kanthi, J. M., & Bhaskaran, R. (2024). Premenstrual syndrome, coping mechanisms and associated factors among female students of a health sciences campus in South India. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology, 13*(7), 1764–1773. https://doi.org/10.18203/2320-1770.ijrcog20241773

Pradana, V. P. (2020). An Overview of Coping Mechanisms Among Adolescent Girls

Experiencing Primary Dysmenorrhea at SMP Negeri 1, Jember Regency. Repository Universitas Jember. http://repository.unej.ac.id/handle/123456789/98903

Rejeki, S., Chanif, C., Kurnia, A., & Wichaikull, S. (2024). Adolescent coping mechanisms in overcoming menstrual pain: A systematic review. *Advances in Health Sciences Research.* https://doi.org/10.2991/978-94-6463-467-9_4

Rezende, A. P. R., Alvarenga, F. R., Ramos, M., Franken, D. L., Dias Da Costa, J. S., Pattussi, M. P., & Paniz, V. M. V. (2022). Prevalence of premenstrual syndrome and associated factors among academics of a university in Midwest Brazil. *Revista Brasileira de Ginecologia e Obstetricia, 44*(2), 133–141. https://doi.org/10.1055/s-0041-1741456

Shippy, D. C., & Ulland, T. K. (2020). Microglial immunometabolism in Alzheimer's disease. *Frontiers in Cellular Neuroscience, 14*(9), 1–8. https://doi.org/10.3389/fncel.2020.563446

Siegel, R. L., Giaquinto, A. N., & Jemal, A. (2024). Cancer statistics, 2024. *CA: A Cancer Journal for Clinicians, 74*(1), 12–49. https://doi.org/10.3322/caac.21820

Susanti, H. D., Sonko, I., & Chung, M. (2022). Translation and validation of the depression anxiety stress scales for menopausal women in Indonesia. *Climacteric, 25*(5), 483–489. https://doi.org/10.1080/13697137.2022.2052839

Van Heugten-Van der Kloet, D., & Lynn, S. J. (2020). Dreams and dissociation—commonalities as a basis for future research and clinical innovations. *Frontiers in Psychology, 11*. https://doi.org/10.3389/fpsyg.2020.00745

Wochekaw, D. T., Melak, D., Adem, Y. F., Yemane, T. T., Tsegaw, S. A., & Mihiretu, M. M. (2024). Prevalence and determinant factors of premenstrual syndrome among secondary and preparatory school students in Dessie city administration, Northeast Ethiopia. *BMC Women's Health, 24*(1). https://doi.org/10.1186/s12905-024-03219-4

Yunike, Winta, M. V. I. W., & Pratiwi, M. M. S. P. (2024). Psychological distress and family support mediate suicidal ideation in adolescents diagnosed with cancer: A literature review. *Science Midwifery, 12(*2). https://doi.org/10.35335/midwifery.v12i2.1543

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment, 52*(1), 30–41. https://doi.org/10.1207/s15327752jpa5201_2