

Adolescent Coping Mechanisms In Overcoming Menstrual Pain: A Systematic Review

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Abstract. Dysmenorrhea is cramping of the uterus associated with lower abdominal pain in female adolescent massively impaired the blood vessels. Dysmenorrhea eventually caused discomfort in daily activites due to mild to severe cramp such as limited academic activities, limited social activities and financial activities such as nausea, vomiting, diarrhea. About 70-90% of cases menstrual pain considerably occur during adolescence. This study employs systematic review method based upon PRISMA technique and tailored with inclusion and exclusion predetermined criteria such as article from Indonesia and Thailand published in 7 years (2016-2022) in full text from various databased, including PubMed, Google Scholar, CINAHL. Theme of research article is coping mechanism of adolescent women who experience dysmenorrhea. The findings of systematic review have concluded that every woman in both countries have their own coping mechanisms to overcome dysmenorrhea due to severity of pain. Thai women tend to use traditional medicine for mild to moderate pain such as drinking herb supplement, drinking hot beverage, hot compress, doing acupressure massage, doing exercise, food consumption, taking a rest and personal hygiene while Indonesian usually apply relaxation intervention such as resting, sleeping, warm compresses, and postioning comfortable position. However, both Indonesia and Thailand have the same coping mechanisms by taking painkillers for severe pain.

Keywords: Coping Mechanisms, Dysmenorrhea, Menstrual Cramp.

1. Introduction

Dysmenorrhea is a common gynecological problem experiencing in puberty period. Menstrual cramps can lead to mild to severe lower abdominal pain. Dysmenorrhea frequently disrupts daily activities and may be accompanied by symptoms like headache, nausea, vomiting, diarrhea, back pain, and mood changes. It typically occurs on the first day or a few days of each menstrual cycle. Dysmonerrhea can be described as colic or continuously, these things happen caused by contraction in endometrium.

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Dysmenorrhea classified into two factors there is primary and secondary [1]. Primary dysmenorrhea usually happens in the first menstrual in ages 10-15 until age 25 caused by uterus contraction and there is no relation to genecology diseases. Secondary dysmenorrhea caused by abnormality in uterus and reproduction system. According to World Health Organization (WHO) in 2017, incidence rate of pain in dysmenorrhea is really high. Averages from 50% woman in every country experience menstrual pain (dysmenorrhea) [2]. In Indonesia incidence rate of dysmenorrhea is 54.89% primary dysmenorrhea and 9.36% secondary dysmenorrhea [3]. In Thailand, the results also showed the high prevalence of dysmenorrhea up to 84.2%.

According to some studies study about the impact of dysmenorrhea can not only cause physical problem but can also cause tension in emotional and mental function of the adolescence, and therefore impact their daily activities. Mental function often get disturbed in dysmenorrhea is unstable emotion, feeling guilty, sexual fear, and they need some efforts to reduce the menstrual pain. However, every woman have their own way to overcome menstrual pain. Generally, they overcome their pain based on their cultures which are different in every region. The way to overcome and release discomfort from menstrual pain called as coping mechanism, there are many factors such as ages, education, knowledge, race, and culture. As well as the woman in different country have different way to overcome dysmenorrhea. Learning coping mechanism to overcome menstrual pain is important because it will identify the most effective way to reduce the pain during having dysmenorrhea. Therefore, this study will identify different coping mechanism of woman who experience dysmenorrhea in Indonesia and Thailand.

2. Method

Systematic review was employed within this study to conduct and in-depth, detailed thorough literature search. The study aims to review existing research on the topic and prevent redundancy in the field [4]. This systematic review research was utilized only academic research with full text based on PRISMA technique and tailored with inclusion and exclusion predetermined criteria. The next step after conducting a literature search is selecting articles from various journals that have been obtained using the PRISMA technique and adjusting to the predetermined inclusion criteria such as article published in 6 years (2012-2022), use Indonesian, Thai, and English Language, articles are available in full text, theme of research article is coping mechanism of woman who experience dysmenorrhea.

3. **Results and Discussion**

3.1. Searching Procedure

This study adopted keywords related to coping mechanisms in Thailand and Indonesia. Initially, 137 studies were identified. After removing duplicates, 82 papers remained for eligibility assessment. Subsequently, 36 studies were excluded as they did not meet the selection criteria, leaving 15 studies for qualitative analysis. The search and selection process is illustrated in a PRISMA flowchart in Figure 1, and Table 1 lists the studies included in this update.

Researcher	Study design	Participants age	Instrument
Murtiningsih, Lilis	Pre – experiment	- (categorized as	Numerical
Solihah, Sri Yuniarti (2019)	design	adolescent girls)	rating scale
Sofia Februanti, Tetet Kartilah, Peni Cahyati (2020).	Quasi experimental	18 - 22	VAS, Adolescent Pediatric Pain Tool (APPT)
Nursalam, Devi Wahyu Dwi Oktaviani, Ni Ketut Alit Armini, Ferry Efendi (2018)	Cross sectional	13 – 15	Ways Coping Questionnaire
Ferdinda Ajeng Selyani, Dhian Ririn Lestari, Kurnia Rachmawati (2022)	Cross sectional	12 – 15	Questionnaire
Dwi Ertiana, Muhammad Akhyar, Uki Retno Budihastuti (2016)	Cross sectional	- (categorized as early-middle adolescent)	Questionnaire
Yayat, Suryati, Nissa Agustin (2018)	Quasi experimental	- (categorized as middle adolescent)	Numerical rating scale
Kurniati Devi Purnamasari, Tita Rohita, Dini Nurbaeti Zen, Widya Maya Ningrum (2020)	Pre – experiment design	13 – 15	VAS
Aidha Rachmawati, Rizka Esty Safriana, Dwi Linda Sari, Finariqotul Aisyiyah (2020)	Quasi experimental	13 – 15	-

Table 1. Analysis of the articles method

Researcher	Study design	Participants age	Instrument
Lumastari Ajeng Wijayanti, Satria Eureka Nurseskasatmata (2021)	Descriptive exploratory non- hypothesis observational research	15 – 18	Numerical rating scale
Julaecha, Safitri, Ajeng Galuh Wuryandari (2020)	Quasi experimental	18 – 20	Numerical rating scale
Faridah BD, Yefrida Rustam, Nilur Rahma (2019)	Pre – experiment design	-	Numerical rating scale
Phanida Kamuttachat, Pitchanan Thiantongin (2022)	Descriptive research	- (categorized as late adolescent)	Questionnaire developed by Perai and Aranyaphak
Suphannachat Nusawat, Kanjana Deelurd, Patthamawan Inthasoi, Pitchanan Thiantongin (2022)	Descriptive research	59 - 90	-
Phanida Wamontree, Titipaphat Wiangchai, Thikhampron Khumule, Napatsorn Somboon, Supunsa Deepas, Khingdet Phasinam, and Dowroong Watchrinrat (2021)	Survey study	18 - 23	VAS
Prasong Tanmahasamut MD, and Sumphang Chawengsettakul MD (2012)	Cross-sectional descriptive study	Mean 21	Short form-36 Thai version 2 VAS

Intervention

From the 15 articles, 11 of selected articles them discussed the coping mechanisms of Indonesian women in dealing with menstrual pain. Out of the 11 articles, 8 focus on interventions aimed at alleviating menstrual pain in Indonesian women, with the relaxation method being the most commonly employed intervention across these articles. Meanwhile, 4 out of 11 mentioned that coping mechanisms commonly used by Indonesian women who experience menstrual pain, such as self-management, and the relationship with the

emotional regulation they experience. 3 of the 14 articles identified those coping mechanisms of Thai women in dealing with menstrual pain. These articles described those coping mechanisms commonly adopted by Thai women including consuming painkiller drug for severe pain, self-management, traditional medicine. Alternatively, Thai women's coping mechanisms vary depending on the severity of menstrual pain.

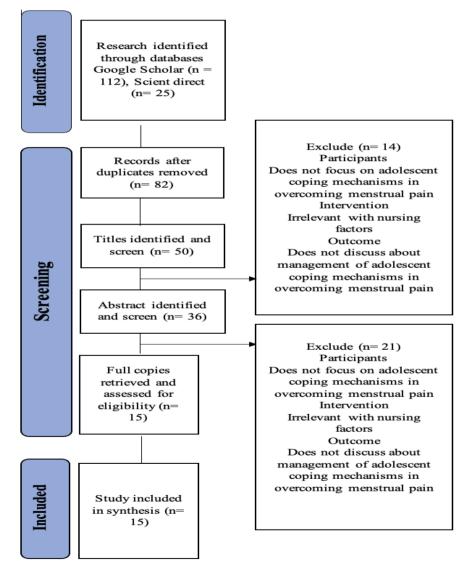


Fig 1. PRISMA flowchart of search strategy and study selection process

No.	Article	Literature Analysis	Source
1.	The Effect of Abdominal Stretching Exercise on Dysmenorrhea in Adolescent Girls	This research was carried out an adolescent women who have disminor. The intervention given was abdominal stretching exercise with an execution time of 10-15 minutes, 3 times in 7 days with a distance of 1 day, before menstruation in the following month. The results of the abdominal stretching exercise research showed a decrease in pain scale with an average dysminor pain scale before intervention of 6.16 (moderate) to 2.37 (mild). In statistical test results, p value < 0.001 concluded that abdominal stretching exercises can reduce dysmenorrhea pain scale in adolescent girls [5].	Murtiningsih, Lilis Solihah, Sri Yuniarti (2019).
2	Acupressure and Progressive Muscle Exercise Therapy Reduced Dysmenorrhea of Late Adolescent in Tasikmalaya, Indonesia	This study applies acupressure intervention and progressive muscle therapy to reduce dysmenorrhea in women with an age range 18-22 years. Respondents in this study were given acupressure and progressive muscle video tutorials, intervention was carried out 2 times in the first 2 days of menstruation. Results of this study after being conducted in 2 months conclude that the intervention can reduce the intensity of pain from scale 5.50 to 2.50. The quality of pain decreased from 10 to 3 with p value 0.001. The researcher	Sofia Februanti, Tetet Kartilah, Peni Cahyati (2020).

Table. 2 Analysis of the article results

No.	Article	Literature Analysis	Source
		concluded that there were significant changes in quality of pain before and after being given acupressure and progessive muscle exercises interventions [6].	
3.	Analysis of the Stressor and Coping Strategies of Adolescents with Dysmenorrhea	This study analyzed stressors and coping mechanisms in adolescents with dysmenorrhea. It was found that biological age and age of menarche are two of stress factors experienced by young age women. Academic stress is also one of the highest causes stress. Some of these stressors indirectly have an effect on physical health and caused dysmenorrhea during menstrual period. The highest average age of menarche in this study was 12 years old with a percentage of 62%, highest menstrual duration was 7 days which was 81%, and highest menstrual cycle was less than 22 days as much as 55%. The results of the study also show that 100% of young women experience lower abdominal pain with coping mechanisms mostly done by sleeping 87%, using drugs 17%, listening to music 28% [7].	Nursalam, Devi Wahy Dwi Oktaviani, N Ketut Ali Armini, Ferr Efendi (2018
4.	Hubungan Mekanisme Koping dengan Regulasi Emosi pada Remaja Putri yang Mengalami Dismenore	This study examines correlation of coping mechanisms with emotion regulation in young women who experience menstrual pain. From the results it was found that there was a relationship between coping mechanisms and emotion regulation. Dysmenorrhea experienced by students was explained it interfered with daily activities, reduced learning	Ferdinda Ajeng Selyani, Dhian Riri Lestari, Kurnia Rachmawati (2022)

No.	Article	Literature Analysis	Source
		concentration, decreased appetite, dysmenorrhea pain was felt so disturbing that some respondents stated that they cried when experiencing dysmenorrhea. The things that the students did to deal with the pain were lying down, taking herbal medicines in form of herbs, leaving it alone, doing a light massage, and drinking warm water. The percentage of coping mechanisms was found to be 66.4% maladaptive. Furthermore, the percentage of moderate emotion regulation is emotion regulation which is mostly applied by students, which is 72.4% of students [8].	
5.	Path Analysis of Factors which Correlated with Dysmenorrhea	Results of this study obtained several characteristics of the respondents, respondents with underweight BMI 33.33%; normal weight 60.6%; overweight 5.1%; obesity 1%. Furthermore, the results of coping mechanisms used by the respondents were as many as 101 respondents or 51% had carried out of existing coping mechanisms. Percentages of mild stress is 29.8%; mild stress 14.6%; moderate stress 28.3%; severe stress 17.2%; very heavy stress 10.1%. In this study, it was explained that several variables related to the analyzed dysmenorrhea were psychological stress, coping mechanisms, and family support [9]	Dwi Ertiana, Muhammad Akhyar, Uki Retno Budihastuti (2016)
6.	The Effect of Guided Imagery-Relaxation	From the study results, a pre- intervention assessment was	Yayat, Suryati, Nissa Agustin

No.	Article	Literature Analysis	Source
	Technique on the Intensity of Pain in Adolescent with Primary Dysmenorrhea	conducted. Out of 10 students interviewed, 3 experienced severe pain, 4 had moderate pain, 2 had mild pain, and 1 reported no pain. Coping mechanisms included herbal medicine (used by some), warm compresses (by 3 individuals), and resting (by 6 individuals). None of the respondents were familiar with the guided imagery-relaxation technique. After receiving the intervention, the median pain scale value decreased from 5.00 to 2.50 [10].	(2018)
7.	The Effect of Deep Breathing Exercises on Menstrual Pain Perception in Adolescents with Primary Dysmenorrhea	This study utilized Deep Breathing Exercise (DBE) to assess respondents' pain perception. The intervention involved 47 respondents and lasted for 30 minutes. The results showed that the average maximum frequency of menstrual pain after the intervention was rated at 6 on the scale, while the minimum average pain was rated at 2. There was a decrease in the pain score for 46.6% of respondents who initially experienced moderate to severe pain on the first day. The breathing relaxation intervention demonstrated a tendency to directly reduce the pain experienced on the Visual Analog Scale (VAS) according to Purnamasari et al. (2020).	Kurniati Dev Purnamasari, Tita Rohita Dini Nurbaet Zen, Widya Maya Ningrum (2020)
8.	Efektivitas Endorphin Massage dan Senam Dismenor dalam Menurunkan	In this study, endorphin massage and dysmenorrhea exercise were applied to reduce menstrual pain intensity in adolescent girls at	Aidha Rachmawati, Rizka Est <u>-</u> Safriana, Dw

No.	Article	Literature Analysis	Source
	Dismenor Primer	SMP Negeri 20. Thirty students were divided into two groups, with 15 receiving endorphin massage intervention and the other 15 receiving dysmenorrhea exercise intervention. The intervention lasted for 3 days, and measurements were taken pre and post-intervention. The paired t-test results for endorphin massage showed a significance value of 0.000 (p < 0.05), indicating rejection of H0 and effectiveness in reducing dysmenorrhea pain before and after the intervention. Similarly, the paired t-test for dysmenorrhea exercise yielded a significance value of 0.000 (p < 0.05), rejecting H0 and indicating effectiveness in reducing dysmenorrhea pain before and after the exercise according to Aidha et al. (2020).	Linda Sari, Finariqotul Aisyiyah (2020)
9.	Spiritual Emotional Freedom Technique (Seft) In Reducing Primary Menstrual Pain Intensity Toward Female Students Atsma Negeri 6 Kediri	In this study, the Spiritual Emotional Freedom Technique (SEFT) was applied to reduce the intensity of menstrual pain in adolescent girls. Before receiving SEFT therapy, most respondents experienced moderate levels of menstrual pain, with 17 respondents (54.85%). After the intervention, the frequency of pain intensity decreased, with 23 respondents experiencing mild pain (74.19%). This indicates a reduction in the intensity of menstrual pain following the intervention according to	Lumastari Ajeng Wijayanti, Satria Eureka Nurseskasatm ata (2021)

No.	Article	Literature Analysis	Source
		Wijayanti & Nurseskasatmata (2021).	
10	Pain Reduction During Dysmenorrhea With Yoga Movement	This study applied yoga movements to reduce menstrual pain scale which was applied to 33 female student respondents. After the intervention of respondents who experienced moderate pain as much as 57.5% of all respondents decreased to 18.1% and respondents who experienced mild pain from 33.4% of the total respondents to 0% Julaecha et al (2020).	Julaecha, Safitri, Ajeng Galuh Wuryandari (2020)
11	Efektivitas Aromaterapi Minyak Atsiri Daun Jeruk Purut Terhadap Penurunan Intensitas Nyeri Haid Remaja Putri	In this study, aromatherapy using essential oils from kaffir lime was employed to alleviate the intensity of menstrual pain in high school students. After receiving kaffir lime leaf essential oil aromatherapy, the average menstrual pain experienced by respondents was 2.88, with a range from 1 to 6 on the pain scale. The majority of respondents reported mild pain (72.22%), followed by moderate pain (27.76%), with no respondents experiencing severe pain. The mean value before and after the effectiveness of kaffir lime leaf essential oil aromatherapy was 2.444, with a p- value of 0.000. Since the p-value is <0.05, H0 is rejected, indicating a significant decrease in menstrual pain intensity before and after the aromatherapy intervention, as concluded by Bd et al. (2019).	Faridah Bd Yefrida Rustam, Nilu Rahma (2019)
12.	Classification of Dysmenorrhea	This study identified various elemental categories among	Phanida Kamuttachat,

No.	Article	Literature Analysis	Source
	among Students at Ubon Ratchathani Rajabhat University, Thailand According to the Màhaachortàrat Scripture	participants: 9.3% as earth element with symptoms like joint and muscle strains, 70.7% as water element experiencing frequent sickness, disrupted blood flow, and reduced food intake, 13.5% as wind element experiencing stomach pain and nausea, and 6.5% as fire element experiencing tension and heat in the vaginal area. The highest level of menstrual pain reported was moderate (scores 5-6) at 28%. Self-management behaviors included infrequent exercise during menstrual pain, increased food consumption, and maintaining personal hygiene according to reference [11].	Pitchanan Thiantongin (2022)
13.	Traditional Phytoremedies Used by Traditional Healers of Sisaket and Ubon Ratchthani Provinces of Northeastern Thailand to Treat Menstrual Disordes	According to articles sourced from traditional healers with over 20 years of experience, menstrual cramps are believed to be caused by cold conditions. These healers utilize herbal medicines comprising various plant-based remedies. They suggest fifteen remedies to be consumed over 3-7 days, twelve herbal preparations to be taken three times a day, and ten remedies to be consumed as needed [12].	Suphannachat Nusawat, Kanjana Deelurd, Patthamawan Inthasoi, Pitchanan Thiantongin (2022)
14.	A Study on Dysmenorrhea in Female Undergraduate Students at Mae Fah Luang University Applying the Mahachotarat	This study findings majority of the respondents experience mild to moderate pain during menstrual period. Based on the articles stated the participants reduce pain by practicing acupressure 88.7%, taking painkiller or analgesic 87.2%, massaging painful spot,	Phanida Wamontree, Titipaphat Wiangchai, Thikhampron Khumule, Napatsorn Somboon,

No.	Article	Literature Analysis	Source
	Scripture of Thai	hot compresses, drink hot	Supunsa
	Traditional Medicine	beverages 52.6%, taking rest	Deepas,
		79.1% [13]	Khingdet
			Phasinam, and
			Dowroong
			Watchrinrat
_			(2021)
15.	Dysmenorrhea in	The study revealed a	Prasong
	Siriraj Medical	dysmenorrhea prevalence of	Tanmahasamu
	Students ;	77.7% among medical students,	t MD, and
	Prevalence, Quality	adversely affecting their daily	Sumphang
	oof Life, and	activities, academic pursuits, and	Chawengsetta
	Knowledge of	quality of life. Most subjects were	kul MD (2012)
	Management	aware that mefenamic acid and/or paracetamol could alleviate	
		dysmenorrhea symptoms.	

Dysmenorrhea is a prevalent global issue among women. Traditional treatments such as NSAIDs, oral contraceptives, and progestins are commonly used to manage dysmenorrhea. However, some women opt for alternative and natural remedies to mitigate the potential side effects associated with medication. This study was conducted to determine various coping mechanisms of Indonesian and Thai women to overcome dysmenorrhea based on articles published from 2012-2022. The literature review indicates that several interventions effectively reduce the intensity of menstrual pain in both Indonesian and Thai women, with a focus on primary dysmenorrhea. Primary dysmenorrhea is characterized by painful, spasmodic cramping in the lower abdomen, typically occurring just before or during menstruation, often starting in adolescence. Furthermore, systemic symptoms such as nausea, vomiting, diarrhea, fatigue, and insomnia commonly accompany the pain [14]. Most women characterized their primary dysmenorrhea as moderate to severe. The variation in pain intensity could stem from variances in pain perception among women across different countries and the utilization of diverse scales to evaluate pain severity [15].

Based on 14 sources, 8 chosen articles identified several interventions that could effectively reduce menstrual pain or dysmenorrhea in Indonesian women. Several interventions was the relaxation method to reduce the insety of menstrual pain in respondents. Intervention literatures is 8 literatures consist of deep breathing exercises, spiritual emotional freedom technique (SEFT), yoga exercises, endorphin massage, dysmenorrhea exercise, citrus leaf essential oil aromatherapy, abdominal relaxation exercises, guided imagery relaxation, acupressure and progressive muscle exercises. The interventions previously mentioned were effective to reduce intensity of menstrual pain to women who experience dysmenorrhea in Indonesia. These interventions use relaxation techniques, which aim to reduce anxiety, reduce muscle tension, and will indirectly reduce or even eliminate the pain.

Relaxation techniques will make a person feel relaxed and will increase the production of endorphins which can reduce contraction in uterine muscle and abdominal cramps that are felt during menstruation[16]. Endorphins, neurotransmitters that hinder the transmission of pain signals, can ultimately diminish the perception of pain. Activities such as deep breathing, relaxation, and meditation are recognized for their ability to stimulate endorphin release in the human body [17]. The analysis results from 3 literatures obtained explain coping mechanisms of stress and pain in Indonesian women. Based on these 3 literatures, the most common coping mechanisms for Indonesian women are eating in large portions, crying, resting, warm compresses, positioning, and consuming painkillers. Coping strategy refers to the approach adopted by individuals to deal with experienced problems. It is a method utilized by everyone in facing challenges. Coping strategies are categorized into two main types: problem-focused coping and emotion-focused coping. Some of the factors that influencing individual in using coping strategies include health, ability to solve problems, positive thinking, social, and economic support. Emotion-focused coping has a positive correlation in reducing dysmenorrhea pain [18]. Research conducted by Ferdinand et.al. states that respondents or Indonesian women are easily angry when they are in their period because the pain they feel is dysminor, so they feel more sensitive because of excess production of the hormone estrogen, which triggers the production of serotonin which functions as a mood and emotion regulator [19].

Meanwhile, limited study was found in Thai articles. The results of the analysis of 4 selected literatures from Thailand explain the coping mechanisms in dealing with dysmenorrhea in Thai women were different. Research conducted by Kamuttachat & Thiantongin (2022) stated that menstrual pain depends on personal classification which prefer to personal characteristic. Within this study described that menstrual blood is divided according to the four elements of life, including earth, water, wind, and fire. These four groups are classified by birth date in Thai belief. The fire element is the highest level of menstrual pain. The study also stated that the average menstrual pain experienced by Thai women is characteristic of water or moderate pain. In addition, the level of menstrual pain is also influenced by self-management behaviours such as exercise, food consumption, and personal hygiene. Tanmahasamut and Chawengsettakul (2012) conducted research indicating that the prevalence of dysmenorrhea among medical students was 77.7%. This condition negatively affected their daily and academic activities. Most medical students were aware that mefenamic acid and/or paracetamol could alleviate dysmenorrhea. The results of the analysis of two other articles stated that the coping mechanisms of Thai women in dealing with dysmenorrhea on average used traditional medicine, such as drinking herbs from medicinal plants, and doing acupressure massage. The study states that Thai herbal medicines are effective in reducing the intensity of menstrual pain in Thai women (Nusawat, Deelurd, Inthasoi, & Thiantongin, 2022). Acupressure massage has been shown to be effective in reducing pain intensity and can improve hormonal balance and circulation in the pelvic area, thus providing a relaxing effect. Research conducted by Wamontree, Wiangchai, Khumlue, & Somboon (2021) mentions other coping mechanisms commonly used by Thai women in dealing with dysmenorrhea, including taking modern

medicine, sleeping/resting, and using hot compresses and consuming hot drinks. Drinking water has numerous health benefits. Consuming 1600–2000ml of water daily can reduce the duration of menstrual bleeding, the intake of pain relievers, and the severity of pelvic pain in young women with primary dysmenorrhea compared to those consuming less than 1600ml per day [20].

Each woman's coping mechanism for dealing with dysmenorrhea varies, influenced by the intensity of menstrual pain felt and their typical self-health management practices. As per the analysis findings, Indonesian women can employ different relaxation interventions to alleviate menstrual pain intensity, while Thai women typically resort to traditional medicine for relief. Additionally, women in both Indonesia and Thailand utilize various coping mechanisms like painkillers, rest, warm compresses, and adjusting positions for comfort.

4. Conclusions and Recommendation

The findings of systematic review concluded that every woman in Indonesia, and Thailand, have their own coping mechanisms to overcome dysmenorrhea due to severity of pain and culture. Thai women tend to use traditional medicine for mild to moderate pain such as drinking herb supplement, drinking hot beverage, hot compress, doing acupressure massage, doing exercise, food consumption, taking a rest and personal hygiene while Indonesian usually apply relaxation intervention such as resting, sleeping, warm compresses, and positioning comfortable position. However, both Indonesia and Thailand have the same coping mechanisms by taking painkillers for severe pain.

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