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## **The Effect of Sanyinjiao Acupressure on Decreasing Dysmenorrhea Pain: Scoping Review**

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### **ABSTRACT**

**Purpose:** Dysmenorrhea, characterized by challenging menstrual flow or menstrual pain, affects approximately half of all girls and women. Various approaches exist to alleviate the intensity of dysmenorrhea pain, among which non-pharmacological therapy stands out. Sanyinjiao acupressure (SP6) represents a non-invasive, cost-free, and time-efficient method to address discomfort during dysmenorrhea. The purpose of this research to assess the impact of Sanyinjiao acupressure (SP6) in diminishing the intensity of dysmenorrhea pain, a review of prior research is warranted.

**Method:** This research employed a scoping review methodology, drawing upon diverse references. The search for research literature was conducted across several databases, including PubMed, Science Direct, and EBSCO, using keywords such as "Sanyinjiao Acupressure" OR "SP6 Acupressure" AND "Dysmenorrhea," guided by the Arksey & O'Malley Framework and the PRISMA-ScR Checklist. Utilizing the Joana Briggs Institute (JBI) Appraisal Tool, the study evaluated the quality of articles, culminating in the inclusion of 7 research journals spanning from 2010-2022, aligning with predefined inclusion and exclusion criteria.

**Results:** Findings derived from the examination of seven eligible research journals indicate a substantial impact of Sanyinjiao acupressure (SP6) in mitigating the intensity of dysmenorrhea pain.

**Conclusion:** Sanyinjiao acupressure (SP6) has been substantiated as an effective intervention in non-pharmacologically diminishing the intensity of dysmenorrhea pain.

**Keywords:** Complementary; Therapy; Dysmenorrhea; Menstrual Pain

## INTRODUCTION

Dysmenorrhea is defined as the presence of painful cramps of uterine origin that occur during menstruation and represents one of the most common causes of pelvic pain and menstrual disorders (1). It is accompanied by other symptoms such as nausea, vomiting, dizziness, headache, irritability and depressive symptoms (2). Dysmenorrhea negatively affects women's quality of life (3). It is the leading cause of school and work absenteeism among women in reproductive age (4). The incidence of dysmenorrhea in the world is quite large. According to the World Health Organization (WHO), approximately 90% (1,769,425 people) of women experience dysmenorrhea and more than 50% of women in every country experience dysmenorrhea. The incidence of dysmenorrhea in Indonesia is 64.25% (107,673 people), consisting of 54.89% (59,671 people) experiencing primary dysmenorrhea from mild to severe and 9.36% (9496 people) experiencing secondary dysmenorrhea (5).

Many pharmacological and non-pharmacological treatments have been investigated to treat dysmenorrhea (6). Pharmacological treatments that are often used by most women are NSAIDs (Nonsteroidal Anti-Inflammatory Drugs) such as mefenamic acid, ibuprofen, diclofenac sodium and naproxen. Nonpharmacological treatment can be done in various ways such as warm compresses, massage, physical exercise, and acupressure (7).

Acupressure complementary therapy is ~~is~~ a part of holistic nursing care. Considering the high prevalence of primary dysmenorrhea among adolescents and its adverse effects on their health, trying to reduce this problem is an important clinical nursing task in primary care to improve health and self-care in women (8). The method is also easy to learn and teach, low cost, and simple and has no negative side effects, and everyone can utilize this method anywhere on their own (9). This is in line with another research, acupressure has been shown to be effective for the relief of a variety of pain in different populations (10). Menstruation is all dependent on the qi and blood produced by the spleen. Sanyinjiao is also the intersection point of the three meridians of liver, spleen and kidney (11). With full meridian blood in the three meridians of liver, spleen and kidney, the uterine vessels can promote blood circulation to reduce menstrual pain (12).

Research related to the effectiveness of sanyinjiao has also been conducted in India and showed statistically significant differences between pre- and post-tests. Therefore, acupressure therapy was shown to be effective in reducing dysmenorrhea in adolescent girls (13). Another study found similar results that sanyinjiao SP6 acupressure is an effective method for treating dysmenorrhea (14).

Scoping reviews are appropriate for identifying available evidence on how research is conducted and for identifying theoretical gaps. Therefore, this approach is useful for practice, education, research, and policy makers. Based on this background, the purpose of this scoping review is to assess the impact of Sanyinjiao acupressure (SP6) in diminishing the intensity of dysmenorrhea pain.

## METHOD

The research design that will be used by the author is a scoping review. Scoping reviews are used as a precursor to systematic reviews, which aim to identify the types of evidence available according to the topic being discussed, look for an overview of how research is carried out on a particular topic or field, identify characteristics or key factors associated with a concept and to explain systematic reviews (15). The preparation of this scoping review used the guidelines from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) scoping review extension checklist (16). The adapted review includes: (1) Identification of documents through systematic searches; (2) Screening of articles based on titles and abstracts; (3) Assessment of article eligibility in full text, (4) Critical Appraisal and (5) Inclusion of relevant articles.

### Identification of Research Articles (Search and Screening Process)

To develop the review focus and search strategy, the researcher used the Population, Exposure, and Outcome (PEO) Framework in managing and solving the review focus. The use of PEO will assist in identifying key concepts in the focus of the review, developing appropriate search terms to describe the problem. The framework in this study are, Population: Women, Exposure: Sanyinjiao Acupressure, Outcome's: Effectiveness. The keywords used in this study use medical subject headings (MeSH) and Boolean operators (OR and AND) which are described in table 1.

**Table 1. Keywords**

Population	Exposure	Outcomes
Woman	Accupressure OR Sanyinjiao	Impact OR Effect

The search for articles was discussed among the authors regarding the steps of information sources, search strategies, and selection of scientific evidence. The authors decided to limit the criteria to articles used from 2010-2022, original articles, internationally reputed articles, primary articles and articles published in English and conclusions regarding the effect of sanyinjiao acupressure on reducing dysmenorrhea pain. Articles in the form of reviews, opinions, SOPs, dissertations and articles without conclusions regarding the effect of sanyinjiao acupressure on reducing dysmenorrhea pain were used as exclusion criteria to minimize the risk of irrelevant studies.

The databases used in this research are; Pubmed, Science Direct and EBSCO. The step of the article findings are described in the PRISMA Flowchart. All article results are uploaded and entered into the referencing manager tool Mendeley then detect duplicate articles delete duplicate detected articles.

**Article Selection**

The authors discussed the screening process and ensured that the 7 articles obtained were suitable for inclusion in this study. Based on the search results from 3 databases, 272 articles were obtained. There were 40 articles from Pubmed, 162 articles from Science Direct and 70 articles from EBSCO. The next step is that all articles are entered into the Mendeley Reference Management Tool. A total of 30 duplicate articles so that the article was deleted with the final number of articles totaling 241 articles, then the two researchers screened articles based on titles and abstracts that were relevant to "The Effect of Sanyinjiao Acupressure on Decreasing Dysmenorrhea Pain". A total of 170 irrelevant articles were excluded, resulting in 25 eligible articles. The 8 articles included in this scoping review study are described in the data charting table (table 2) adopted from the Joana Briggs Institute (JBI) (17).

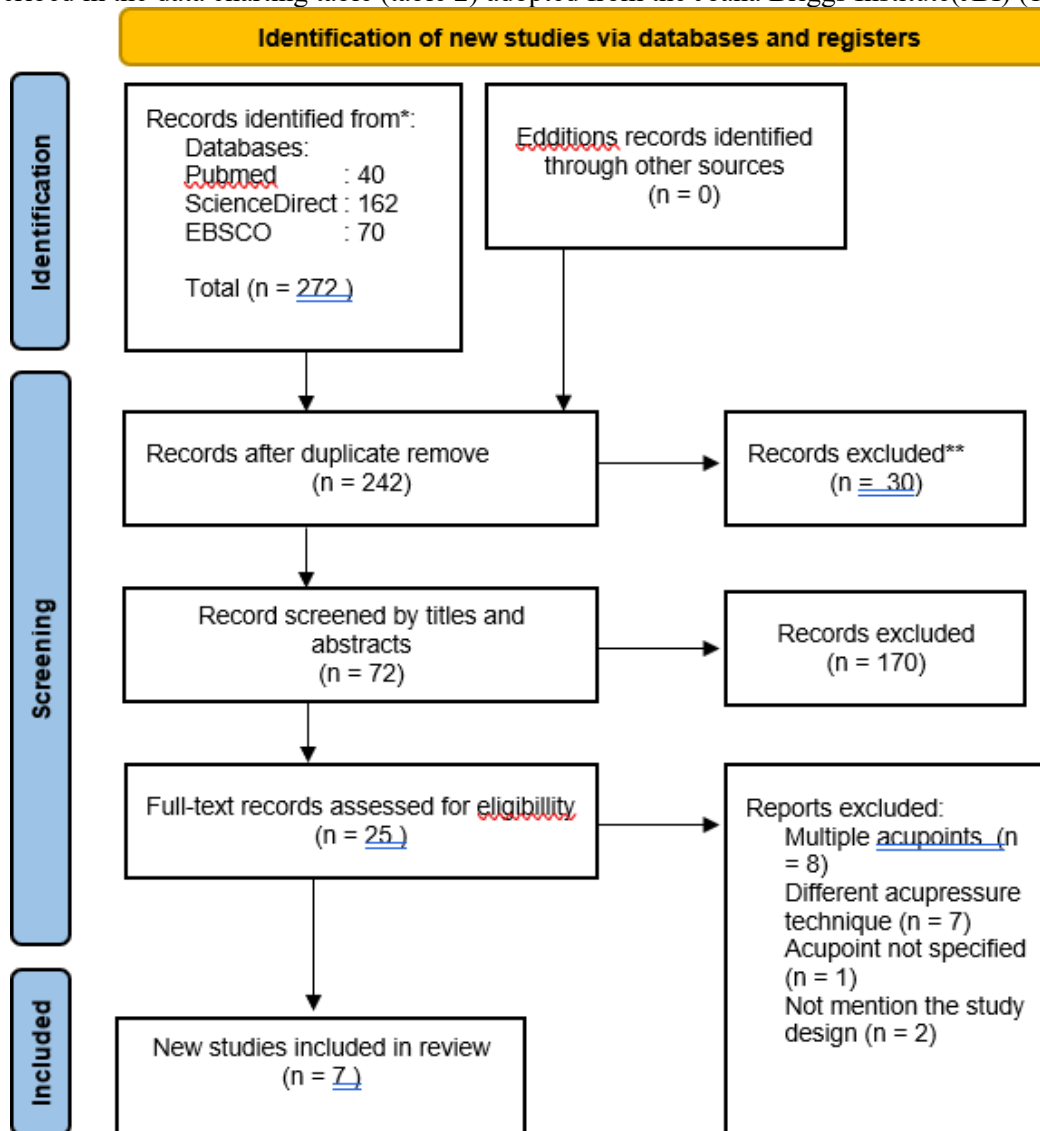


Figure 1. PRISMA Flowchart (18)

## RESULTS

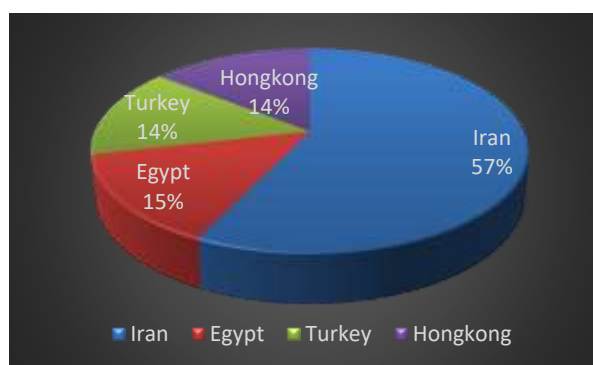
Table 2. Data Charting

No	Title/Country/ Author	Objective	Methods (Design, Sample, Variables, Instruments, Analysis)	Frequency and Duration of Intervention	Result
A1	The effect of acupressure at the Sanyinjiao point (SP6) on primary dysmenorrhea in students in dormitories of Tabriz  Iran (19)	This study aims to determine the effect of acupressure at the Sanyinjiao point (SP-6) on the severity of menstrual symptoms	D : <i>Randomized Control Trial</i> S : 72 girls I : <i>Visual Analog Scale (VAS)</i> A : <i>Chi-square test and independent t-test</i>	<b>Frequency:</b> 6 seconds of pressure, 2 seconds of rest <b>Duration:</b> 10 minutes (each leg 5 minutes)	The results of this study showed that acupressure at Sanyinjiao point (SP-6) had a significant effect on reducing the severity of dysmenorrhea symptoms compared to ibuprofen (NSAIDs).
A2	The Efficacy of Acupressure at the Sanyinjiao Point in the Improvement of Women's General Health  Iran (20)	The purpose of this study was to examine the effectiveness of Sanyinjiao point (SP6) acupressure on women's general health	D : <i>Randomized Control Trial</i> S : Eighty-six (86) students I : General Health Questionnaires (GHQ) A : <i>independent t test</i>	<b>Frequency:</b> 6 seconds of pressing and 2 seconds of releasing pressure (initial force of 1.21 kg gradually increases to 3.53kg at the end of the round/leg) <b>Duration:</b> 30 minutes	It was found that sanyinjiao acupressure was more effective ( $p < 0.05$ ) than sham pressure. The general health status of the participants changed more after the second month.
A3	Effect of Acupressure on Dysmenorrhea Among Adolescents  Egypt (21)	The purpose of this study was to evaluate the effect of acupressure on Sanyinjiao Acupoint on primary dysmenorrhea in adolescents.	D : <i>Case Control</i> S : 100 girls randomly divided into two equal groups I : <i>Visual Analog Scale (VAS)</i> dan <i>Mcgill Pain Questionnaire</i> A : -	<b>Frequency:</b> 10 minutes/leg at 8am and 8pm. <b>Duration:</b> 40 minutes per day until the 3rd day of the 2-month menstrual cycle.	There was a highly statistically significant difference between the two groups regarding the pain intensity according to VAS within 3 days in the first and second months ( $P \leq 0.001$ ). Sanyinjiao (SP6) is effective to relief the pain.
A4	The Effect of Acupressure Applied to Sanyinjiao (SP6) on Primary Dysmenorrhea  Iran (22)	The purpose of the study to determine the benefits of Sanyinjiao (SP6) for the treatment of primary dysmenorrhea	D : <i>Randomized Control Trial</i> S : Participants were 67 students with dysmenorrhea I : <i>Visual Analog Scale (VAS)</i> A : -	<b>Frequency:</b> 6 seconds then 2 seconds rest <b>Duration:</b> 20 minutes (10 minutes/leg)	In the acupressure group, there was a statistically significant difference between baseline and period 4 in total mean score ( $P < .05$ ), and the measurement for period 4 was lower than that for the first period.
A5	The effects of acupressure on primary dysmenorrhea: A randomized controlled trial  Iran (19)	Evaluating the effect of acupressure on primary dysmenorrhea in Iranian medical science students	D : <i>Randomized Controlled Trial</i> S : 30 young female college students with primary dysmenorrhea I : <i>Visual Analog Scale (VAS)</i>	<b>Frequency:</b> 8 seconds pressing, 2 seconds rest (120 pressing cycles) <b>Duration :</b> 20 minutes	Significant differences were observed in dysmenorrhea scores between the two groups immediately after 3 hours after treatment ( $1.66 \pm 1.98$ vs. $4.80 \pm 1.37$ ,

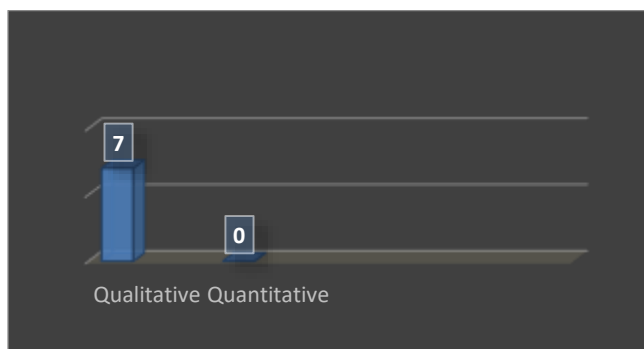
	medical science students of Iran	A : <i>t-test and ANOVA statistical tests.</i>	P=0.000). Acupressure on the SP6 can be an effective to reduce primary dysmenorrhea .
A6	Effect of acupressure at the Sanyinjiao point on primary dysmenorrhea: A randomized controlled trial  Iran (23)	to assess the effect of acupressure at Sanyinjiao point on primary dysmenorrhea	D : <i>Randomized Controlled Trial</i> S : 33 adolescent girls I : <i>Pain Visual analog scale dan McGill Pain Questionnaire (SF-MPQ)</i> A : -  <b>Frequency:</b> 6 seconds of pressure and released for 2 seconds (pressure at the beginning of 1.21 kg and then increased to 3.53kg at the end of therapy) <b>Duration:</b> 30 minutes (for 2 menstrual cycles)
A7	Effects of SP6 acupressure on pain and menstrual distress in young women with dysmenorrhea HongKong (24)	To evaluate the effect of Sanyinjiao acupressure (SP6) in reducing the level of Dysmenorrhea pain	D : <i>Randomized Control Trial</i> S : 40 girls I : <i>Pain Visual Analogue Scale (PVAS), Short-Form McGill (SF-MPQ)</i> A : <i>Mann-Whitney</i>  <b>Frequency:</b> 15 seconds and 15 seconds rest, repeated up to 10x (5 minutes/leg) <b>Duration:</b> 20 minutes after and before waking up and for the first 3 days of menstruation (3 menstrual cycles)

### Article Quality Assessment and Critical Appraisal

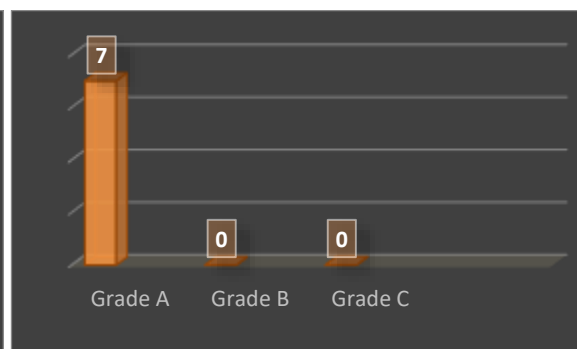
Researchers conducted a critical appraisal using the Joana Briggs Institute (JBI) tool because the tool from JBI is complete for all studies to be assessed and easy to understand. 6 articles to be examined used the Randomized Control Trial (RCT) study design and 1 article used Cross-sectional. Researchers categorized the assessment of articles into 3 categories; Grade A: very strong, Grade B strong, Grade C: weak. Based on the results, it was found that there were 7 A quality articles.



**Figure 2.** Article Characteristics by Country



**Figure 3.** Research Methodology



**Figure 4.** Article Quality

The research articles used in this study came from several countries, such as Iran (4articles), Egypt (1 article), Turkey (1 article), Hong Kong (1 article), and Nigeria (1 article). The characteristics of the articles based on the research design used can be seen in Figure 3. A total of 7 research articles were selected using quantitative research designs with details of 6 articles using RCT study designs and 1 article using case-control study designs. The characteristics of articles based on article quality can be seen in Figure 4. Based on the critical assessment conducted on 7 articles in this study, there are 7 articles with A quality. The articles are of good value as they are appropriate and provide clear information on the objectives, methods and results of the research.

## DISCUSSION

### Effectiveness of Sanyinjiao Acupressure on the Reduction of Dysmenorrhea

Acupressure sanyinjiao is effective in reducing dysmenorrhea pain, the results of review articles from various countries show significant results between before and after the intervention is given. Significant differences were seen in dysmenorrhea scores between the two groups immediately after intervention (3.50 - 1.42 vs. 5.06 - 1.43,  $P=0.004$ ) and also 3 hours after treatment (1.66-1.98 vs. 4.80-1.37,  $P=0.000$ )<sup>A5</sup>. Dysmenorrhea severity also decreased more in the study group than the control group at 30 minutes, 1, 2 and 3 hours after the intervention ( $P<0.05$ )<sup>A6</sup>. There was also a statistically significant decrease in pain scores for PVAS ( $P=0.003$ ) and SF-MPQ ( $P=0.02$ ) immediately after 20 minutes of acupressure SP6<sup>A8</sup>. Article <sup>A1,A2,A3,A7</sup> also showed the results of the severity of menstrual symptoms and the length of rest time in the 2nd and 3rd menstrual cycles were reduced more significantly.

This is in accordance with research conducted in Nigeria with the results that SP6 acupressure given by trained personnel significantly decreased pain intensity immediately after intervention (effect size = -0.718; CI = -0.951 to 0.585;  $P = 0.000$ ), and pain relief persisted up to 3 hours after intervention (effect size = -0.979; CI = -1.296 to 0.662;  $P = 0.000$ ) (25). Another investigation elucidated that the efficacy of acupressure diminishes, implying that while acupressure proves effective, its impact in alleviating dysmenorrhea typically spans a duration of 2-3 hours. The results indicate that there is a significant reduction of dysmenorrhea after acupressure (26).

### Frequency and Duration of Therapy

The review of articles revealed variances in frequency and duration; however, the typical approach involves applying pressure on the Sanyinjiao point (SP6) with the thumb for approximately 6 seconds, followed by a release or rest period of 2 seconds <sup>A1,A2,A4A6</sup>. Acupressure at Sanyinjiao (SP6) acupoint was performed alternately on each leg with an initial pressure force of 1.21 kg per single pressure action, gradually increasing to 3.53 kg at the end of the pressure round for each leg<sup>A2,A6</sup>. The average duration of the intervention was 20 minutes with 10 minutes per leg every day from the first to the third day of menstruation. This is in line with research done in Egypt, sanyinjiao point (SP6) should be pressed with the thumb for 1-3 minutes (6 seconds of pressure and 2 breaks) as far as pain can be tolerated. This procedure should be repeated for the other foot. Then the whole routine should be repeated with both feet for another 6 minutes (27).

### Differences With Other Complementary Therapies

The results of the study at<sup>A1</sup> showed that acupressure at the Sanyinjiao point (SP-6) had a significant effect on reducing the severity of dysmenorrhea symptoms compared to using NSAIDs. In a study<sup>A2</sup> it was found that acupressure was more effective than sham pressure. In addition, there were statistically significant differences between the two groups in four domains of their general health after the first month of intervention ( $p < 0.0001$ ). The general health status of the participants changed more after the second month such that acupressure was more effective than sham pressure ( $p < 0.05$ ). A similar comparison was also found at<sup>A6</sup>, during the second menstrual cycle, the

reduction was more prominent among participants of the sanyinjiao acupressure intervention group at all stages after the intervention ( $p < 0.05$ ).

Another article also compared sanyinjiao acupressure with placebo and found the mean VAS score for pain in the control group was statistically higher than that in the acupressure group on day 3 in period 3 ( $P < 0.05$ ). In addition, the acupressure group showed a statistically significant decrease of baseline pain from baseline for periods 1, 2, and 3, with  $P < .01$ ,  $P < .001$ , and  $P < .05^{A4}$ . Research at <sup>A7</sup> also comparing the severity of systemic symptoms between acupressure at points SP6 and SP8 revealed that the fatigue factor was significantly reduced at point SP6 ( $P = 0.004$ ).

According to (28) acupressure is a complementary/alternative therapy that stimulates certain acupoints in the meridians, aiming at system stimulation regulation, neurological and endocrine mechanisms to stimulate and balance physiological functions so that it is inappropriate to be used as a complementary therapy to reduce dysmenorrhea pain intensity. Furthermore, considering that primary dysmenorrhea stems from diminished energy levels within the uterus, and effective treatment for menstrual bleeding entails regulating energy flow, blood circulation, and organ function, particularly of the liver, spleen, and kidneys. The stimulation point known as the Sanyinjiao acupoint (SP6) or the interconnected pathway between the spleen, liver, and kidney represents a vital locus for acupressure treatment (29). Four fingers are placed above the ankle behind the posterior margin of the tibia, to stimulate the caterpillar of one of the internal branches passing through the uterus so that the Sanyinjiao point (SP6) is very effective in reducing the intensity of menstrual pain (30).

## CONCLUSION

Of all the literature reviewed, none contradict each other and there are no theoretical gaps. Based on 8 articles that have been reviewed, it is found that acupressure at the sanyinjiao point (SP6) is very effective in reducing the intensity of dysmenorrhea pain. Acupressure sanyinjiao (SP6) is also used as one of the interventions in reducing the intensity of dysmenorrhea pain (with primary dysmenorrhea category) because it is easy to do, cheap, effective and has no side effects. Adolescents can use their thumb to press sanyinjiao point that located 4 finger above the ankle for 6 seconds and then released the pressure for 2 seconds, and this cycle was repeated for 20 minutes with 10 minutes per leg everyday from the first to the third day of menstruation.

It is advised that women or adolescents seeking to alleviate menstrual pain (dysmenorrhea) should consider non-pharmacological remedies like self-administered sanyinjiao acupressure (SP6), which can be performed independently and without expense. To ensure academic rigor, health professionals should possess the knowledge to impart education and implement Sanyinjiao acupressure as an intervention to mitigate the severity of dysmenorrhea pain among adolescent girls.

## SUGGESTION

It is advised that women or adolescents seeking to alleviate menstrual pain (dysmenorrhea) should consider non-pharmacological remedies like self-administered sanyinjiao acupressure (SP6), which can be performed independently and without expense. To ensure academic rigor, health professionals should possess the knowledge to impart education and implement Sanyinjiao acupressure as an intervention to mitigate the severity of dysmenorrhea pain among adolescent girls.

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