The Effect of Yoga Asanas on Dysmenorrhea Pain

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ABSTRACT

Background: Dysmenorrhea is pain, often very severe pain, felt in the lower abdomen during menstruation. Menstrual pain often lasts till the conclusion of the menstrual cycle and can be disruptive to daily activities. There are both pharmaceutical and non-pharmacological ways to treat dysmenorrhea pain. Yoga asanas are one non-pharmacological method of pain management. This study sought to ascertain how yoga asanas affected the pain associated with dysmenorrhea. This study used an incidental sampling technique along with a one-group pre-and post-test design and a quasi-experimental sampling strategy. The population of this study consisted of all dysmenorrheic grade 11 pupils. This study was conducted using a quasi-experimental methodology using a one-group pre-test and post-test design. The study's sample size was 19 samples, including 8 samples from the control group and 11 samples from the intervention group, as determined by the Mann-Whitney U and Wilcoxon t-Independent Sample tests. It can be concluded that yoga asanas do not affect dysmenorrhea in 11th-grade students based on the findings of this study, which revealed no difference in dysmenorrhea pain between the p values for the intervention and control groups of (0.373) and (0.915), as well as no difference between the two groups pre- and post-test dysmenorrhea pain with p values of (0.102) and (0.317).

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1. INTRODUCTION

Dysmenorrhea, or lower abdominal pain, is a condition that affects women throughout their menstrual cycles [1], [2]. The pathogenesis of dysmenorrhea stems from increased Myometrial hyperactivity, uterine tissue ischemia, and discomfort can all be brought on by an increase in vasoactive prostaglandin synthesis in the endometrium [3]. Primary and secondary dysmenorrhea are the two types of dysmenorrhea [4]. A pain issue called primary dysmenorrhea is a typical aspect of the menstrual cycle [5]. During menstruation, the discomfort often lasts until the conclusion of the menstrual cycle. Being in constant agony renders the victim immobile. Some young ladies feel pain throughout their period (Dysmenorrhea). However, dysmenorrhea has a long-term impact if not treated properly and will cause secondary dysmenorrhea [6]. Dysmenorrhea pain has different causes depending on whether the pain is classified as primary or secondary dysmenorrhea, but both of these pains if not treated or left alone will be bad for sufferers, especially teenagers because it can interfere with daily activities, especially the learning process [7] and work [8]. Besides that, The long-term impact is that it can trigger polycystic ovary syndrome and endometriosis[9].

Teenagers are more likely than adults to experience dysmenorrhea, particularly college students. According to a study conducted in Turkey, dysmenorrhea is common among college students [8]. In addition, in Malaysia, it was reported that as many as 74.5% of women who had reached menarche experienced dysmenorrhea. While in India, 183 teenagers aged 14-19 years. found as many as 119 or 65% of adolescents experienced dysmenorrhea...
The prevalence of dysmenorrhea is relatively high in Indonesia, with 60–70% of those affected [10]. Most girls suffer from pre-menstrual symptoms which indicate a problem. Therefore, appropriate intervention is needed to go through lifestyle changes [11].

Deal with dysmenorrhea pain, it can be done in various ways, such as with pain relievers such as analgesic drugs or NSAIDs [12], [13] and can also be eliminated by non-pharmacological alternatives such as warm compresses, dysmenorrhea exercise, and yoga. Yoga is a non-pharmacological technique that teaches about a combination of relaxation techniques, breathing, and body position to increase strength, and balance, and reduces pain [14]–[16]. Several studies mentioned that yoga is useful for reducing the intensity of primary dysmenorrheal pain [17], [18]. In yoga, there are several movements such as yoga Nidra, solar namaskar, yoga asanas, and yoga solar na-mascara [17]. Yoga asanas are one of the relaxation techniques that can stimulate the body to release endorphins and enkephalins, which are compounds that function to inhibit pain. Yoga asanas can reduce pain by relaxing the endometrial muscles that experience spasms and ischemia due to an increase in prostaglandins resulting in vasodilation of blood vessels [19]. This causes blood flow to the area that is experiencing spasm and ischemia to increase so that the pain felt can decrease. In addition, yoga can change the pattern of accepting pain to a more calming phase so that the body can gradually recover from the main pain disorder. Endorphin hormones can affect the transmission of pain impulses by suppressing the release of neurotransmitters at the synapse or inhibiting the conduction of pain impulses at the postsynaptic level.

2. **RESEARCH METHOD**

The experimental group and the control group both took a test before to receiving treatment in this study's non-equivalent control group design, namely a pretest, to know the condition of the group before treatment. Then after being given treatment 3 times for 45 minutes with a break of 5 minutes for one day, the experimental group was given a test, namely a post-test, to determine the post-test of the experimental group after treatment.

3. **RESULTS AND ANALYSIS**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean</th>
<th>Median</th>
<th>Standard Deviation</th>
<th>Min-Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages</td>
<td>16.27</td>
<td>16.00</td>
<td>0.467</td>
<td>16-17</td>
</tr>
<tr>
<td>Control</td>
<td>16.25</td>
<td>16.00</td>
<td>0.707</td>
<td>15-17</td>
</tr>
<tr>
<td>Menarche</td>
<td>13.00</td>
<td>13.00</td>
<td>0.775</td>
<td>11-14</td>
</tr>
<tr>
<td>Control</td>
<td>13.13</td>
<td>13.00</td>
<td>0.354</td>
<td>13-14</td>
</tr>
<tr>
<td>Lama Menstruasi</td>
<td>6.55</td>
<td>6.00</td>
<td>1.368</td>
<td>5-10</td>
</tr>
<tr>
<td>Control</td>
<td>5.75</td>
<td>6.00</td>
<td>2.375</td>
<td>3-10</td>
</tr>
</tbody>
</table>

The outcomes of the pretest value are shown the intervention group in table 1 above the average dysmenorrhea pain intensity of the respondents before doing yoga asanas was 4.58 with a standard deviation of 0.838, and after being given yoga asanas was 4.21 with a standard deviation of 0.855 with a *p*-value of 0.317. And in the control group the average respondent's dysmenorrhea pain intensity before being given the leaflet was 4.63 with a standard deviation of 0.744 and after being given the leaflet was 0.926 with a *p*-value of 0.102.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Min-Max</th>
<th><em>p</em>-Value</th>
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<tbody>
<tr>
<td>Intervention</td>
<td>4.58</td>
<td>0.838</td>
<td>2-5</td>
<td>0.317</td>
</tr>
<tr>
<td>Control</td>
<td>4.63</td>
<td>0.744</td>
<td>3-5</td>
<td>0.102</td>
</tr>
</tbody>
</table>

The intervention group's *p*-value for the Wilcoxon test was 0.316, and the control group's *p*-value was 0.316 in the control group, according to statistical analysis (0.102) in the control group is smaller than (0.05) so it can be concluded that Ha is rejected. As a result, there is no distinction between the pre-test and post-test of dysmenorrhea pain scores for students at Athalla Putra Health Vocational School in Palembang.
According to the results of table 3 above, the pre-test average value in the intervention and control groups is 4.85, the standard deviation is 0.838 with a p-value of 0.915, and the post-test average value in the intervention and control groups is 4.21, according to the difference in dysmenorrhea pain between the two groups and a standard deviation of 0.8555 with a p-value of 0.373.

The pre-test pain in the intervention and control groups showed a Mann-Whitney U test p-value (0.915) according to the statistical analysis and a p-value (0.373) for the post-test pain in both groups (0.05). Consequently, it might be said that Ha is turned down. This indicates that the evaluations of the value by the intervention and control groups are identical of dysmenorrhea pain of students at Athalla Putra Health Vocational School in Palembang.

Dysmenorrhea is a functional problem and not a disease state that causes pain, we can focus on a holistic approach by looking for the predisposing factors for dysmenorrhea in diet, lifestyle, and emotional environment. Yoga includes breathing techniques that relax the body, which helps relieve menstrual stress. Performing various positions in yoga can increase body flexibility, make muscles supple, and help relieve pain due to menstrual cramps and other causes [20].

Yoga consists of several poses or movements that are often used as a non-pharmacological therapy. The yoga intervention improves blood flow to the pelvis and triggers endorphin B production, which acts as a general painkiller [21]. In the study of Kim et al., it was found that yoga can be beneficial as a reliever of dysmenorrhea in adolescents [17], [22], Kapalabhati, Easy Pose (Sukhasana), Bow Pose (Dhanurasana), Wind Pose (Pavanamuktasana), Cobra Pose (Bhuganagasana), Cat Pose (Bidalasana), Fish Pose (Matsyasana), Anuloma Viloma, and Relaxation Pose are among the yoga poses that are thought to be effective for decreasing menstruation pain [24], Yoga pschimottanasana [14], Adho Mukha padmasana [14]. In addition, the yoga Nidra pose is an effective movement in hormones in patients who experience menstrual irregularities Menorrhagia, dysmenorrhea, oligomenorrhea, metrorrhagia, and hypomenorrhea are a few examples [25]. By raising blood levels of b-endorphins by four to five times, hatha yoga positions can help lessen the severity of dysmenorrhea pain. B-endorphins are released when someone practices hatha yoga therapy and are then caught by receptors in the limbic and hypothalamus that control emotions [26].

This study used yoga asanas as an intervention for dysmenorrheal pain and There is no impact of yoga asanas on dysmenorrhea. This is contrary to Patel's research. This suggests that yoga poses have an impact on dysmenorrhea [19]. According to Rakhshae'e's research, using yoga Asanas with three poses namely cobra pose, cat pose, and fish pose has effectiveness in minimizing menstrual pain intensity [24]. In the study of Aggarwal et al., it was found that yoga asanas have a positive relationship in reducing menstrual pain [27]. Other studies also explain that yoga asanas can reduce dysmenorrhea [28], [29] and can change their quality of life [30].

4. CONCLUSION

Based on statistical tests showing the Wilcoxon test findings, the intervention group was given a p-value of (0.317), the control group received a p-value of (0.102), and the Mann-Whitney U test yielded a p-value of (0.915) for pre-test pain. A conclusion that Ha is rejected can be drawn from the test in the intervention and control groups and the fact that the p-value (0.373) for post-test pain in both groups is less than (0.05). This suggests that yoga poses have no impact on female students' dysmenorrhea suffering at Athalla Putra Health Vocational School in Palembang.

REFERENCES


