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A comparative study on the effectiveness of Yoga and Mitchell Relaxation Technique in primary dysmenorrhea: A comparative study

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Abstract
Background: Primary dysmenorrhea is one of the most common gynecological problems among young women, often interfering with daily activities and quality of life. Non-pharmacological interventions such as Yoga and relaxation techniques have been widely adopted as safe, effective approaches to relieve menstrual pain.
Objective: To compare the effectiveness of Yoga and Laura Mitchell Relaxation technique in reducing symptoms of primary dysmenorrhea among adolescent females in terms of WaLIDD score.
Method: A total of 80 young women aged 18–24 years diagnosed with primary dysmenorrhea were randomly allocated into two groups: A Yoga group (n=40) and a Mitchell's relaxation technique group (n=40). The trial was carried out over six months until completion. Each therapy was delivered under appropriate supervision for two successive days.
Result: In total, 80 participants were analyzed (Yoga group n=40, Mitchell's relaxation technique group n=40). Both groups demonstrated remarkable improvement in pain based on the WaLIDD score before and after the intervention ($p>0.05$). The findings indicate that the average decrease in post-intervention WaLIDD score did not differ significantly between group A and group B. The mean reduction in WaLIDD score for group A = 23.57 and group B = 25.81 appeared nearly identical. Therefore, no substantial variation was observed between the two interventions.
Conclusion: Yoga as well as Mitchell's relaxation technique produced a significant reduction in dysmenorrhea symptoms within each group; nonetheless, no meaningful difference was detected between the groups ($p>0.05$). Thus, both strategies are equally beneficial in alleviating primary dysmenorrhea.

Keywords: Primary dysmenorrhea, Yoga, mitchell's Relaxation method, walidd assessment, adolescent females

Introduction
Dysmenorrhea is pain during menstruation and is a common gynecological complaint among young females [1]. It often interferes with daily activities [2], and emotional or behavioral problems may worsen symptoms [3]. Primary dysmenorrhea occurs without pelvic disease, mainly due to prostaglandin secretion causing vasoconstriction and uterine ischemia [4]. Secondary dysmenorrhea arises from reproductive abnormalities like endometriosis, cesarean scars, or fibroids, and is associated with cramps, back pain, nausea, diarrhea, and fatigue [5]. Yoga improves health, strengthens muscles, and reduces menstrual pain, while relaxation techniques provide calmness and stress relief 6. Dysmenorrhea lowers quality of life, causes absenteeism, and may lead to loss of bone mineral density [7]. Its prevalence in India ranges between 50% and 87.8% [8]. Non-pharmacological treatments such as yoga and relaxation are beneficial, reducing stress, improving circulation, and relaxing muscles without major side effects9. Laura Mitchell's relaxation training is widely used for its simplicity and quick results [10]. Primary dysmenorrhea presents as cramps without pelvic disease, beginning with menstruation and lasting up to three days, often with nausea, dizziness, or sleep disturbance [11]. Women with dysmenorrhea have higher prostaglandin levels, leading to stronger uterine contractions [12]. Different prostaglandins influence pain: PGI_2 relaxes, PGE_2 contracts and dilates vessels, while $PGF_{2}\alpha$ causes vasoconstriction [13]. Primary dysmenorrhea occurs without underlying pathology [14], while secondary dysmenorrhea is associated with pelvic abnormalities [15]. Pain is most severe in the first 24–48 hours of bleeding [16]. Non-pharmacological methods such as yoga, massage, and physiotherapy reduce menstrual cramps [17]. NSAIDs like ibuprofen, naproxen, diclofenac, and mefenamic acid are first-line drugs that block prostaglandin synthesis [18]. Oral contraceptives are also used but may cause anxiety and irritability [19].

Yoga, practiced for over 3,000 years, is recognized as a holistic system of health and alternative medicine [20]. Relaxation techniques reduce stress, strengthen immunity, and improve overall quality of life [21]. The Mitchell Method is a simple relaxation approach that relieves muscular tension from stress and can be practiced anytime [22].

Need for Study
Primary dysmenorrhea is highly prevalent in India, women face numerous challenges when experiencing primary dysmenorrhea (severe menstrual pain). Medications are used to reduce the pain, but they can also cause some side effects. To reduce these side effects, practicing free yoga and relaxation at home will definitely help alleviate the discomfort, and the woman's pain will lessen. Physical therapy stimulates sympathetic activity. Thus, exercise helps

to reduce symptoms of primary dysmenorrhea. There are various studies done about the effect of Physical therapy like Yoga and Relaxation technique to relieves symptoms of primary dysmenorrhea. Laura Mitchell technique has the primary goal which is usually nondirected relaxation. The Laura Mitchell approach involves reciprocal relaxation, moving one part of the body in the opposite direction from an area of tension, and then letting it go. Generally, Laura Mitchell technique is used to provide relaxation which can help to ease the period cramps. So, the purpose of the study is to compare the significant effects of Laura Mitchell's technique & yoga training on the symptoms of primary dysmenorrhea.

Aims and Objectives

This study aims to compare Yoga and Mitchell Relaxation technique on primary Dysmenorrhea in term of WaLIDD score in adolescence female.

Objectives

1. To find out effectiveness of yoga in reducing symptoms of primary dysmenorrhea in term of WaLIDD score in adolscence female.
2. Find out effectiveness of Laura Mitchell Relaxation technique on symptom of primary Dysmenorrhea in term of WaLIDD score in adolscence female.

Materials and MethodologY

The present study was carried out at Rashtrasant Janardhan Swami College of Physiotherapy and followed a comparative study design. A total of 80 adolescent females diagnosed with primary dysmenorrhea were recruited using the convenient sampling method. The participants were equally divided into two groups, with 40 participants in Group A and 40 participants in Group B. The overall study duration was six months, and each participant underwent the assigned intervention for two consecutive days. The required materials for the study included an informed consent form, an instructional guide, a quiet room, mats, pillows, a stadiometer, and a BMI calculator for baseline assessment.

Procedure

Eighty adolescent females (18–24 years) with primary dysmenorrhea were recruited by convenient sampling based on inclusion and exclusion criteria. Written informed consent was obtained from all participants. On the first day of the menstrual cycle, baseline assessment was done using the WaLIDD score Participants were randomly assigned into two groups (n=40 each).

Group A (Yoga): Participants practiced Shavasana – restorative posture lying supine with deep breathing to relax abdominal muscles and reduce cramps (10 min) [25] Gomukhasana – seated knee-stacking posture with arm clasp to improve pelvic blood circulation and relieve pain (10 min) [26] and Yogamudrasana – forward-bending seated posture promoting deep breathing, stress reduction, and gentle abdominal pressure to ease bloating and discomfort (10 min) [27] Total yoga session = 30 minutes daily for two consecutive days during menstruation.

Group B

(Mitchell Relaxation Technique) Participants were instructed to sequentially tense and release muscles: pushing the head against the bed, pulling shoulders downward, sliding elbows outward, abducting and extending fingers, rolling thighs outward, adjusting knees, and plantar flexing feet. After each movement, they stopped to register sensations of relaxation. Slow deep breathing was emphasized throughout, with awareness of body weight and points of support. A soothing visualization from forehead to neck was included. The session ended with gradual return to active state by stretching and opening eyes to avoid fainting [28]. Total duration = 30 minutes daily for two consecutive days during menstruation. Post-intervention WaLIDD scores were assessed, and pre- and post-intervention outcomes were compared between the two groups.

Selection criteria

Inclusion criteria

Adolescent female who diagnosed with primary dysmenorrhea

Participants must be women aged 18 to 24

Participants must have a BMI between 18 and 25 kg/m²

Who have regular menstruation phase (5 to 8 day)

Regular cycle of menstruation (25 to 30 day)

Exclusion Criteria

Girls who practicing daily exercise, Yoga and Relaxation

Irregular or infrequent menstruation

BMI>25 kg/m²

Outcome Measure

WaLIDD score [23, 24]

A scale-type survey (working ability, location, intensity, days of pain, dysmenorrhea [WaLIDD] score was designed, which integrated features of dysmenorrhea such as:

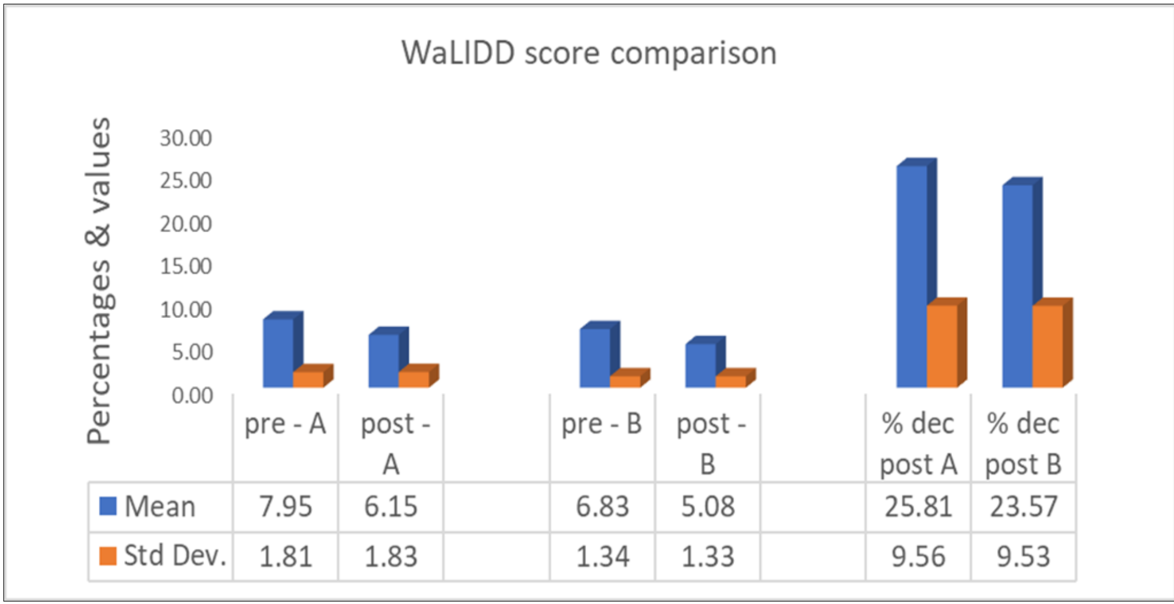
1. frequency of disabling pain to perform their activities (never, almost never, almost always, always).
2. number of anatomical pain locations (no part of the body, lower abdomen, lumbar region, lower limbs, inguinal region),
3. Wong–Baker pain range (does not hurt, hurts a little, hurts a little more, hurts even more, hurts a lot, hurts a lot more),
4. Number of days of pain during menstruation (0,1–2, 3–4, 5),

Each tool's variable provided a specific score between 0 and 3, and the final score ranged from 0 to 12 points.

Result

WaLIDD Score Comparison Between Group Analysis Using Unpaired t-Test

The unpaired t-test ($t = 1.049$, $p > 0.05$) showed that the mean percentage reduction in WaLIDD scores did not differ significantly between Group A (23.57%) and Group B (25.81%). This indicates that both interventions were almost equally effective, with no significant difference in outcomes.



Graph 1: WaLIDD score pre and post intervention score in group A and Group B

Discussion

This study demonstrated that both yoga and Mitchell's relaxation technique significantly reduced dysmenorrhea severity as measured by WaLIDD scores. Group A showed a 55.78% reduction and Group B a 52.69% reduction, with no significant difference in post-intervention scores, indicating comparable effectiveness.

Findings are consistent with Gandhi *et al.*, who reported greater pain reduction with the Laura Mitchell technique compared to physiotherapy, and with Prabhu (2019), who found yogasanas more effective than core exercises. Together, these studies highlight the value of non-pharmacological strategies in managing menstrual pain.

Strengths include use of a validated outcome tool and appropriate analysis. Limitations include small sample size, baseline differences, and short follow-up. Clinically, both interventions are simple, safe, and feasible, with choice guided by patient preference and resources.

Conclusion

Both yoga and Mitchell's relaxation technique are effective non-pharmacological interventions for reducing dysmenorrhea in adolescent females.

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