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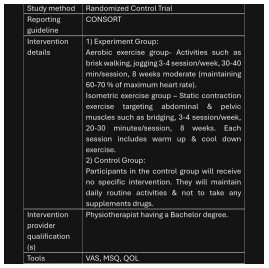
Comparative of aerobic vs. isometric exercise on menstrual pain



Study method	Randomized Control Trial
Reporting guideline	CONSORT
Intervention details	1) Experiment Group: Aerobic exercise group- Activities such as brisk walking, jogging 3-4 session/week, 30-40 min/session, 8 weeks moderate (maintaining 60-70 % of maximum heart rate). Isometric exercise group - Static contraction exercise targeting abdominal & pelvic muscles such as bridging, 3-4 session/week, 20-30 minutes/session, 8 weeks. Each session includes warm up & cool down exercise. 2) Control Group: Participants in the control group will receive no specific intervention. They will maintain daily routine activities & not to take any supplements drugs.
Intervention provider qualification (s)	Physiotherapist having a Bachelor degree.
Tools	VAS, MSQ, QOL

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Mamta Mandal[1], K M Amran Hossain[2]

[1]Mamta Mandal; [2]Department of Physiotherapy & Rehabilitation, Jashore University of Science & Technology

Jashore University of Sc...

Mamta Mandal
Mamta Mandal

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We use this protocol and it's working

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Keywords: Aerobic exercise, isometric exercise, VAS, Young females, Progesterone levels , managing menstrual pain, menstrual pain this protocol, reducing primary dysmenorrhea, menstrual pain, primary dysmenorrhea in young female, using plasma progesterone level, menstrual symptoms questionnaire, modified menstrual symptoms questionnaire, plasma progesterone level, exercise

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Abstract

This protocol outlines a randomized clinical trial comparing the effectiveness of aerobic and isometric exercises in reducing primary dysmenorrhea in young females aged 18–25. Participants will be divided into two groups—two intervention (aerobic and isometric exercise) —with exercises performed thrice weekly for 8 weeks. Expected outcomes will be assessed using plasma progesterone levels, Visual Analog Scale, modified Menstrual Symptoms Questionnaire, and Quality of Life measures. The study aims to identify a more effective non-pharmacological exercise intervention for managing menstrual pain and reducing reliance on medication.

Attachments

Intervention.docx 14KB

Protocol summery.doc... 17KB

Guidelines

1. Confirm participants meet inclusion criteria and have given informed consent.
2. Check all equipment before use; ensure it's functional and safe.
3. Follow the intervention and assessment steps exactly as planned.
4. Maintain accurate records and participant confidentiality.
5. Any protocol changes must be approved before implementation.

Materials

Visual Analog Scale (VAS):

- Measures pain intensity
- Scale from 0 (no pain) to 10 (worst pain)

Menstrual Symptoms Questionnaire (MSQ):

- Assesses symptoms like nausea, fatigue, mood swings, and back pain

Quality of Life (QOL) Assessment Tool:

- Evaluates physical and emotional wellbeing related to dysmenorrhea

Participant Information Sheet & Consent Form:

- Ensures ethical approval and voluntary participation

Safety warnings

1. Stop the session immediately if participants experience severe pain, dizziness, or unusual symptoms.
2. Keep first-aid and emergency support accessible at all times.
3. Follow hygiene and infection control procedures strictly.
4. Participation is voluntary; participants can withdraw anytime without penalty.

Ethics statement

This study involves human participants and does not include experiments with animals. Prior ethical approval was obtained from the Institutional Review Board (IRB) of the Department of Physiotherapy & Rehabilitation at Jashore University of Science and Technology, Bangladesh, under permit number- PTR-JUST/IRB/2025/04/11, dated May 24, 2025. The IRB reviewed the ethical statement checklist, participant information sheet, consent form, hematology and toxicology study, and questionnaire, ensuring compliance with the Declaration of Helsinki, ICH-GCP guidelines, and local regulatory requirements. The study was approved as a randomized clinical trial, with clauses ensuring no involvement of the study team in IRB deliberations, mandatory reporting of serious adverse events, protocol changes, and final study results.

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1 Step 1 — Screening, consent, and baseline (Day 0)

1. Confirm eligibility and obtain written informed consent.
2. Record demographics and menstrual history (cycle length, pain history, medication use).
3. Collect baseline outcomes:
4. Pain: Visual Analog Scale (VAS)
5. Symptoms: Modified Menstrual Symptoms Questionnaire (MSQ)
6. Quality of life (QOL) tool
7. Blood sample for plasma progesterone (follow lab SOP; collect at your predefined cycle phase)
8. Assign unique participant code and create source documents; set up secure data sheet.
9. Schedule first intervention session and provide safety instructions (stop if severe pain, dizziness, or unusual symptoms; withdrawal is voluntary).

2 Step 2 — Randomization and 8-week exercise intervention (Weeks 1–8; 3×/week)

1. Randomize participant to one arm:
2. Aerobic exercise (e.g., treadmill/brisk walking/cycling)
3. Isometric exercise (targeted holds for major muscle groups)
4. For each supervised session (≈35–45 min):
5. Warm-up 5 min of light dynamic movement.
6. If Aerobic arm: Continuous aerobic activity at a moderate, steady intensity (define your target here: speed/HR/RPE) for 20–30 min.
7. If Isometric arm: Series of isometric holds (define muscle groups, hold duration, sets, rest; keep total working time ~20–30 min).
8. Cool-down and breathing/relaxation 5 min.
9. Record session adherence, perceived exertion/intensity, and any adverse events in the session log.
10. Enforce safety: stop session if severe pain, dizziness, or abnormal symptoms; keep first-aid accessible; follow hygiene and equipment checks each visit.

3 Step 3 — Outcome assessments and data management (Midpoint & Week 8)

1. Mid-program checkpoint (around Week 4): Optional interim VAS/MSQ to monitor trends and safety.
2. Post-intervention (Week 8 / predefined cycle window):
3. Repeat VAS, MSQ, and QOL.
4. Collect post-program plasma progesterone (same lab SOP and cycle phase definition used at baseline).
5. Verify completeness and accuracy of all case report forms; de-identify data with participant codes only.

6. Enter data into the electronic sheet; audit for errors; lock the database.
7. Document any protocol deviations and serious adverse events per IRB requirements; prepare summary for reporting.

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Acknowledgements

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