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Protocol for Ultrasound Guided: Pelvic Floor Strengthening for Urinary Incontinence

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Gynecology and Women...



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Protocol status: Working

We use this protocol and it's working

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Department of Physiotherapy and Rehabilitation, Jashore University of Science and Technology

Abstract

Background and Purpose: Stress urinary incontinence (SUI) significantly affects women's quality of life. This study aims to evaluate the effectiveness of ultrasound-guided pelvic floor exercise (PFE) compared to conventional Kegel exercises in reducing incontinence severity, post-void residual (PVR) volume, and urinary tract infection (UTI) frequency. **Methods:** A single-blinded randomized clinical trial will be conducted from June to December 2025 at the Department of Physiotherapy and Rehabilitation, Jashore University of Science and Technology and nearby rural communities involving 220 women with stress urinary incontinence (SUI). Participants will be divided into two groups: one receiving conventional Kegel exercises, and the other undergoing ultrasound-guided Kegel exercises with real-time biofeedback. Both groups will train twice weekly for 8 weeks, with physician-prescribed medication allowed if needed. Primary outcomes include urinary leakage (1-hour pad test) and post-void residual (PVR) volume, while secondary outcomes involve urinalysis findings. **Discussion:** This study will explore the potential of ultrasound as a biofeedback tool to enhance pelvic floor rehabilitation. Visual feedback may improve patient engagement, neuromuscular control, and accuracy in PFE - key for effective conservative SUI treatment. Improved muscle targeting may also reduce PVR volume and UTI risk. Despite practical challenges such as equipment access and adherence, this intervention could offer a cost-effective, non-invasive option in low-resource settings. **Conclusion:** The findings of this study suggest that ultrasound-guided pelvic-floor exercises are effective in reducing incontinence severity, lowering post-void residual volume, and decreasing the frequency of urinary tract infections in women with stress urinary incontinence.

Guidelines

IRB No: PTR-JUST/IRB/2025/04/03

Condition: Stress urinary incontinence diagnosed according to International Continence Society (ICS) criteria.

Eligibility criteria:

Inclusion Criteria:

- Women aged 18 to 65 years.
- Parous (Given birth to 1 child).
- Nulliparous (Never given birth).
- Diagnosed as Urinary Tract Infection and Stress Urinary Incontinence.
- BMI of 18–30 kg/m².

Exclusion Criteria:

- Pregnant or birth in the past six months.
- History of pelvic surgery.
- Chronic respiratory diseases.
- Diabetes.
- Use of medications for Urinary Tract Infection.
- Cardiac pacemaker implanted.
- Psychological disorders.

Study sites with contact person of study site(s):

- Musculoskeletal Lab Room - 301, Department of Physiotherapy and Rehabilitation, Jashore University of Science and Technology, Bangladesh. Contact Person: Arafatuzzaman Babu. Email: arafatuzzamanbabu@gmail.com Phone: 01915900191.
- Nurul Islam Orthopedic Rehabilitation and Physiotherapy Care, Jashore, Bangladesh. Contact Person: Jahid Hasan. Email: jahidhasantony@gmail.com Phone: 01744129353.

Anticipated date of recruitment: 20.07.2025

Study method: Randomized Clinical Trial

Reporting guideline: CONSORT

Intervention details:

- 1) Experimental Group: Experimental group will receive Ultrasound guided Kegel exercise in lying position according to the registered protocol of prescribing PFE for SUI. A curvilinear probe will be placed in the lower-abdomen focusing on the urinary bladder and tell the patient to perform the exercise. USG will act as a biofeedback in this case.
- 2) Control Group: Control group will receive Kegel exercise in lying position according to the registered protocol of prescribing PFE for SUI.

Treatment duration: Treatment will be provided for twice a week, one session for 45 minutes, and in total 8 weeks.

Intervention provider qualification(s): Physiotherapist with Completed Bachelor and Master on Specific Discipline.

Tools: Pad Test (1 hr.), PVR, Urine RME.

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Funding source(s) with contact: This study will be partially funded by Department of Physiotherapy and Rehabilitation, JUST.

Materials

Transversus abdominis Strengthening:

- Abdominal Drawing-In Maneuver Exercise
- Dead Bug Exercise

External Oblique Strengthening:

- Side Plank Exercise
- Bicycle Crunch Exercise

Internal Oblique Strengthening:

- Bridge Pose Exercise
- Reverse Crunch Exercise



Exercise protocol description

1 Transversus abdominis Strengthening

1.1 Abdominal Drawing-In Maneuver Exercise

1.2 Dead Bug Exercise

2 External Oblique Strengthening

2.1 Side Plank Exercise

2.2 Bicycle Crunch Exercise

3 Internal Oblique Strengthening

3.1 Bridge Pose Exercise

3.2 Reverse Crunch Exercise