Journal of
Modern Rehabilitation

October 2025, Volume 19, Number 4

Research Article

Integrating the Effects of the Franklin Method with Pelvic Floor Muscle Training in Women with Pelvic Organ Prolapse

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Citation Ravi K, Selvakumar S, Basha MMR. Integrating the Effects of the Franklin Method with Pelvic Floor Muscle Training in Women with Pelvic Organ Prolapse. Journal of Modern Rehabilitation. 2025;19(4):365-371. http://dx.doi.org/10.18502/jmr.v19i4.19773

http://dx.doi.org/10.18502/jmr.v19i4.19773

Article info:
Received: 22 Mar 2025
Accepted: 07 Jun 2025
Available Online: 01 Oct 2025

Keywords:
Pelvic organ prolapse (POP); Franklin method; Pelvic floor training; Prolapse quality of life (P-QoL); International consultation on incontinence questionnaire female lower urinary tract symptoms (ICIQ-FLUTS)

ABSTRACT

Introduction: Pelvic organ prolapse (POP), defined as the descent of pelvic organs from their anatomical position, significantly affects women's quality of life. Although traditional pelvic floor muscle training (PFMT) offers benefits, adherence to and proper execution of the technique remain challenging. The Franklin method is designed to enhance body awareness and neuromuscular control. This study aimed to evaluate the effects of combining Franklin method with PFMT in women with POP.

Materials and Methods: The participants included women aged 45–55 years with POP stages 1–2, no neurological impairments, and no active urogynecological disorders. The exclusion criteria included uncontrolled systemic illness, a history of malignancy, active infections (e.g. pelvic inflammatory disease), ongoing hormonal therapy, cognitive barriers to questionnaire completion, or recent pelvic surgery (within the past 4 weeks). All 120 participants underwent 6 weeks of the Franklin method and PFMT. Outcomes were assessed using the prolapse quality of life (P-QoL) questionnaire and the international consultation on incontinence questionnaire female lower urinary tract symptoms (ICIQ-FLUTS) Tamil, measured pre- and post-intervention.

Results: P-QoL scores improved from 56.74 (pre-test) to 47.06 (post-test). International consultation on ICIQ-FLUTS Tamil scores decreased from 36.09 to 20.22. Both quality of life and incontinence symptoms showed statistically significant improvement ($P \leq 0.001$) post-intervention.

Conclusion: Franklin method, combined with PFMT, significantly alleviated POP symptoms.

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Introduction

Pelvic organ prolapse (POP) refers to the descent of pelvic organs from their anatomical position due to muscle and/or connective tissue weakness [1]. The worldwide prevalence of POP is 28.8% [2]. In India, 1.5%–2% of nulliparous women suffer from POP, with incidence increasing to 5%–8% with age and parity [3]. Women who had their first childbirth at age 30–34 reported POP occurring 3.77 times more frequently than in those aged 20–29 [4]. Women aged 45–65 years are most prone to POP [5], with mild to moderate symptomatic POP affecting approximately 9.7% of women [6]. There are five stages of POP: Stage 0 (no prolapse), stage 1 (prolapse >1 cm above the hymen), stage 2 (prolapse ≤1 cm from the hymenal plane), stage 3 (prolapse >1 cm below the hymen but <2 cm shorter than vaginal length), and stage 4 (complete prolapse outside the vagina) [7]. Common types include cystocele, enterocele, rectocele, uterine prolapse, and vaginal vault prolapse [8]. In the United States, POP is a major indication for hysterectomy, with symptoms including urinary difficulties, pelvic pressure, vaginal protrusion, sexual dysfunction, low back pain, irritation, ulceration, and bowel emptying difficulties [9].

The levator ani muscle, comprising the pubococcygeus, iliococcygeus, and puborectalis, provides primary support to the pelvic organ. This weakening after childbirth occurs due to decreased collagen in the uterosacral and cardinal ligaments, reduced vaginal wall tone, and insufficient blood supply, all of which are key pathomechanisms of POP [10]. Conservative management includes lifestyle modifications (proper lifting posture, avoiding straining during defecation, bladder/bowel-friendly diet, smoking cessation, weight management), pelvic floor muscle training (PFMT) to improve strength and coordination, cognitive behavioral therapy, bladder/bowel training, and vaginal pessaries (support or space-filling types) [11, 12].

PFMT strengthens pelvic floor muscles through levator hiatus constriction, bladder neck elevation, and pelvic organ stabilization. In pelvic floor dysfunction, PFMT induces muscle hypertrophy, which helps restore normal function [13]. Electromyography studies have demonstrated PFMT's efficacy in improving maximum voluntary contraction, strength, and endurance [14]. However, challenges with adherence, body awareness, and proper technique execution may limit its effectiveness, particularly in unsupervised settings.

The Franklin method (dynamic neuro-cognitive imagery™) enhances physical and cognitive exercise through embodiment, improving movement awareness and safety. It's four-step process includes assessment of posture and movement alignment by a therapist or through self-evaluation using sensory inputs; planning improvements in anatomical and physiological alignment; implementing the individualized plan; and monitoring progress through comparison with the initial state. This method uses biological imagery (anatomical, biomechanical, and physiological) to enhance motor control, pain management, and parasympathetic activation, while improving movement learning and alignment [15]. Such enhanced somatic awareness may optimize the efficacy of pelvic floor exercise.

The prolapse quality of life (P-QoL) questionnaire reliably assesses POP symptom severity and its impact on quality of life through 20 questions across multiple domains (general health, prolapse impact, physical/social limitations, emotional issues, etc.). Scores range from 0 to 100, with higher scores indicating greater symptom severity [16, 17]. The International consultation on incontinence questionnaire female lower urinary tract symptoms (ICIQ-FLUTS) Tamil questionnaire evaluates lower urinary tract symptoms through 12 items across three subscales (filling, voiding, incontinence), with demonstrated reliability and validity in South Asian populations [18–20].

While evidence for the Franklin method in pelvic health remains limited, this study examined its potential in combination with PFMT to address POP-related QoL and symptoms through a holistic physical–cognitive approach.

Materials and Methods

This study investigated the effects of the Franklin method combined with PFMT in women with POP. A convenience sampling technique was used at Saveetha Medical College and Hospital. Participants who expressed interest in the study were provided with an informed consent form that explained the study's purpose, procedures, and their rights as participants. To determine eligibility, participants submitted demographic data along with their past and present medical and surgical history. This screening process ensured the inclusion of only those who met the specified criteria. All participants received a detailed explanation of the study, including the intervention procedures and questionnaires they would be required to complete, to ensure they were fully informed and comfortable with their participation.

A power analysis was conducted using G*Power software, version 3.1 to determine the minimum required sample size for this paired-sample study. Assuming a medium effect size (Cohen's d=0.5), a significance level (α) of 0.05, and a power (1–β) of 0.80, the analysis indicated that at least 95 participants were necessary to detect a statistically significant change in the outcome measures. To accommodate a potential dropout rate of up to 30%, the target sample size was increased to 120.

Inclusion criteria

Women aged 45-55 years. Clinically diagnosed with POP stage 1 or 2. No neurological defects. No current history of urological or gynecological disorders. No history of abdominal or pelvic surgery.

Exclusion criteria

Presence of any uncontrolled systemic illness. History of malignancy. Active infection, such as pelvic inflammatory disease. Currently undergoing hormonal therapy. Inability to understand or accurately respond to the questionnaire.

A total of 243 participants were assessed for eligibility. Among them, 11 did not meet the inclusion criteria, five were not interested in participating, and seven dropped out without providing a reason, and did not respond to further contact. Finally, 120 participants met the eligibility criteria and agreed to participate. They were given a thorough explanation of the study and asked to read and sign an informed consent form before the procedure began. Each participant underwent an individual assessment before the intervention.

All participants were guided through the questionnaires and asked to complete the P-QoL and ICIQ-FLUTS Tamil versions both before the intervention and again after six weeks. Additionally, they were instructed on how to perform the Franklin method in combination with PFMT.

Intervention procedure

Franklin method (dynamic neuro-cognitive imagery™) [15]

The exercises selected for this study employed imagery-based movements grounded in the Franklin method, which is designed to enhance body-awareness and neuromuscular control. These non-traditional exercises engaged participants in multisensory experiences focused on the pelvic region, promoting enhanced proprioception and muscle activation. By improving the mind–body connection, these techniques complement traditional pelvic floor strengthening approaches. As there are currently no standardized protocols applying Franklin method imagery to populations with POP, the exercises were adapted from Franklin method teachings to meet the specific needs of women with POP.

All participants were first educated on the anatomy of the pelvic region, including key bony landmarks and the hammock-like structure of the pelvic floor muscles suspended within the pelvic ring. The exercise routine began with participants tapping various parts of their body, the upper limbs, thorax, abdomen, pelvic bones, and gluteal region, while in a knee-flexed position. This initial step helped participants develop somatic awareness.

The following imagery-based exercises were performed

Internal and external rotation

The participants placed their hands on their iliac crests and were guided to visualize how the transverse abdominis and oblique abdominal muscles contracted inward during pelvic internal rotation, while sliding their hands toward the body's midline. For external rotation, they were instructed to imagine the pelvic bones rotating outward, with the transverse and oblique abdominal muscles lengthening as the hands returned to the iliac crest.

Nutation and counternutation

The participants rotated their pelvis anteriorly and posteriorly, focusing on the muscles that moved the sacrum. During posterior pelvic rotation, the participants were asked to imagine the coccygeus and levator ani muscles engaging the pelvic floor. In anterior rotation, the emphasis was on visualizing the lumbar erector spinae muscles pulling on the sacrum.

Rotation of the innominate

In a standing position, participants flexed their legs while allowing the sacrum to move into a nutation position, promoting hip extension. Upon returning to the standing position, the sacrum moved into the counternutation position.

Pelvic geyser (sitting and standing)

The participants were instructed to imagine the pelvic girdle as a source of intense energy, like a geyser, with energy rising upward and radiating throughout the body.

Biceps femoris

While flexing their legs, the participants visualized the biceps femoris muscle pulling the ischial tuberosities outward. During leg extension, the muscle was imagined to release tension on the sit bones. To support this imagery, participants used their hands to slide down from the sacrum to the head of the fibula.

Adductor and pelvic floor

With the lower limb flexed in an upright position, participants were guided to imagine the adductors and pelvic floor muscles forming a continuous layer and to feel their coordinated and synergistic movements.

PFMT

The participants were taught how to perform PFMT in the crook-lying position. The training included:

Slow contractions: Contracting the pelvic floor muscles to their maximum voluntary strength, repeated 10 times.

Fast contractions: Rapid contractions of the pelvic floor muscles for 1 second followed by 1 second of relaxation, repeated 10 times.

Isometric contractions: Holding the pelvic floor contraction for 6 seconds, followed by relaxation, repeated 10 times.

During the initial phase (weeks 1–2), exercises were performed in the supine position to ensure correct technique and enhance muscle awareness, particularly in identifying and isolating the pelvic floor muscles. From week 3 onward, participants transitioned to sitting and standing positions to simulate functional postures encountered in daily activities, thereby improving the integration of pelvic floor muscle use in real-life contexts. Repetitions and hold durations were adjusted based on individual progress, with some participants increasing contraction times to 10 seconds by weeks 5 to 6, as tolerated.

The duration of each intervention session was 45 minutes. Initially, participants performed two sets of each exercise, with adjustments made weekly based on pelvic floor muscle strength as measured by a perineometer. All participants adhered to the intervention protocol and were regularly monitored throughout the six-week period, during which their results were systematically documented.

Statistics analysis

The collected data were analyzed using IBM SPSS statistics software, version 30.0. Descriptive statistics, including Mean±SD, were calculated, and paired t-tests were conducted to evaluate differences between pre- and post-intervention outcomes. The primary outcome measures were the P-QoL and ICIQ-FLUTS Tamil versions. A paired t-test was applied to determine the significance of changes from baseline to post-intervention. To account for multiple comparisons across the five outcome domains, including P-QoL and the four ICIQ-FLUTS subdomains (filling, voiding, incontinence, and overall), the Bonferroni correction was applied, adjusting the significance threshold to α=0.025. All estimates were reported with 95% confidence intervals (CIs).

Results

A total of 243 participants were screened for eligibility. Of these, 11 were excluded because they did not meet the inclusion criteria, five declined to participate, and seven withdrew without providing a reason. Therefore, data analysis was conducted on the remaining 120 participants using paired t-tests. The Mean±SD age of participants was 50.46±3.33 years. The P-QoL scores significantly decreased from a Mean±SD of 56.74±7.14 at baseline to 47.06±8.21 after the intervention ($P \leq 0.001$), with a 95% CI for the mean difference of [9.08, 10.28] (Table 1). For the ICIQ-FLUTS Tamil outcomes (Table 2), significant improvements were observed across all domains. The Mean±SD scores for the filling, voiding and incontinence domains and the overall ICIQ-FLUTS score decreased from 12.35±2.41 to 6.48±2.82, 8.83±2.00 to 3.70±2.44, 15.58±3.04 to 10.04±3.40, and 36.09±6.91 to 20.22±4.95, respectively, with all differences achieving statistical significance ($P \leq 0.001$). The 95% CI for the mean difference in the overall ICIQ-FLUTS score was (14.28, 17.47).

Table 1. P-QoL Mean±SD before and after intervention

P-QoL	Mean±SD
Pre-test	56.74±7.14
Post-test	47.06±8.21

Table 2. ICIQ-FLUTS Mean±SD before and after intervention

ICIQ-FLUTS	Mean±SD	
	Pre-test	Post-test
Filling	12.35±2.41	6.48±2.82
Voiding	8.83±2	3.7±2.44
Incontinence	15.58±3.04	10.04±3.401
Overall	36.09±6.91	20.22±4.95

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Effect sizes were calculated using Cohen's d, obtained by dividing the mean difference by the standard deviation of the differences for each outcome. The effect sizes were large, with 95% CIs of (2.50, 3.32) for P-QoL and (1.50, 2.08) for the overall ICIQ-FLUTS Tamil score, indicating clinically meaningful improvements. To reduce the risk of type I error due to multiple testing of primary outcomes (P-QoL and ICIQ-FLUTS), both Bonferroni and Holm–Bonferroni corrections were applied. The adjusted P for both primary outcomes remained below the corrected significance threshold (adjusted P≤0.025), confirming that the observed changes were statistically significant even after adjustment for multiple comparisons. Improvements in the three ICIQ-FLUTS subdomains (filling, voiding, and incontinence) also remained statistically significant following correction (adjusted P≤0.003), further supporting the robustness of the findings.

Discussion

POP affects multiple dimensions of women's lives, including psychological well-being, physical function, occupational participation, and sexual health. It is most prevalent among multiparous, obese, and older women, as well as those with chronic constipation or persistent cough [21]. This study emphasizes the role of body awareness in improving exercise performance. By incorporating cognitive imagery, participants were guided to visualize pelvic movements, thereby promoting proper execution of exercises. The Franklin method leverages this neuro-cognitive approach to reinforce muscle activation through imagery while also creating a psychologically supportive environment that may reduce embarrassment and anxiety through self-reflection and body-centered awareness.

The Franklin method is a well-established effective intervention for improving pelvic floor strength. A central aim of this study was to determine whether integrating the Franklin method with PFMT could further improve POP symptoms and subjective well-being. Findings suggest that the Franklin method enhanced participants' understanding of pelvic floor mechanics, likely increasing motivation and adherence to PFMT. This combined approach resulted in significant improvements across all domains of the ICIQ-FLUTS Tamil and moderate enhancement of QoL.

These results are consistent with those of previous studies. Ryhtä et al. found that PFMT is effective in both the prevention and treatment of POP, especially in women with stage II or higher prolapse, with noticeable benefits within 12 months [22]. Fenocchi et al. reported that PFMT may delay the need for surgery and shorten hospital stays in postoperative cases, highlighting its dual role in conservative and adjunctive management [23]. In a randomized controlled trial, Schütze et al. compared the Franklin method with standard postpartum exercises in 300 participants over a 12-month period. Although both groups improved, the Franklin method group achieved greater gains in pelvic floor strength, suggesting that mental imagery and cognitive engagement can positively influence neuromuscular recruitment and coordination [24].

Further evidence from Panman et al. demonstrated sustained improvements in women with mild symptomatic POP over two years following PFMT, including reduced reliance on absorbent pads [25]. Additionally, Abraham et al. showed that dynamic neuro-cognitive imagery™ enhanced motor efficiency and imagery capacity in dancers, supporting the notion that mental visualization can optimize neuromuscular performance [26].

Despite these promising findings, research on the application of the Franklin method specifically for POP is limited. Early results from related domains suggest potential benefits, but further high-quality, randomized controlled trials are required to determine their efficacy and long-term effects in this population.

Several variables, such as adherence, baseline activity levels, and comorbidities, may influence intervention outcomes. These factors were not systematically assessed in the present study, which is a limitation of the study. Future research should incorporate tools such as exercise logs, standardized physical activity assessments, and comorbidity profiles to better evaluate influencing factors. This would support the development of more personalized and effective rehabilitation strategies for women with POP.

Conclusion

This study investigated the combined effect of the Franklin method and PFMT on symptom reduction and quality of life in women with POP. The intervention resulted in significant improvements in pelvic floor function and associated symptoms after six weeks, supporting the potential value of this integrated approach. These findings suggest that incorporating cognitive imagery techniques into physical training may enhance rehabilitation outcomes. However, larger, well-controlled studies with extended follow-up are required to confirm these results and inform clinical practice.

Limitations

The study did not include a long-term follow-up period. Participants were limited to women aged 45–55 years, restricting generalizability. The outcomes were assessed exclusively using self-reported measures. Baseline physical activity levels were not documented. Variability in adherence to the prescribed exercise program may have affected results. The absence of a control group prevents definitive conclusions about the intervention's specific effects.

Recommendations

Future studies should include larger and more diverse populations. Objective outcome measures should complement subjective self-reports. Strategies to monitor and enhance adherence should be incorporated. Long-term follow-up is necessary to assess the sustainability of treatment effects. Including a control group receiving only PFMT would allow for clearer comparisons. Randomized controlled trials are essential to determine the independent and combined effects of each intervention component.

Ethical Considerations

Compliance with ethical guidelines

This study was approved by the Institutional Scientific Review Board of Saveetha Institute of Medical and Technical Sciences (SIMATS), Chennai, India (Code: 02/032/2024/ISRB/PGSR/SCPT).

Funding

This research did not receive any specific grants from funding agencies in the public, commercial, or not-for-profit sectors.

Authors' contributions

Conceptualization, methodology, data collection, formal analysis, and writing the original draft: Keerthana Ravi; Data curation and investigation: Mohammed Munvar Rizwan Basha; Review and editing: Senthilkumar Selvakumar and Mohammed Munvar Rizwan Basha; Supervision and validation: Senthilkumar Selvakumar.

Conflict of interest

The authors declared no conflict of interest.

Acknowledgments

The authors sincerely thank all participants for their time, commitment to completing the assessments, and consistent participation throughout the study.

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