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PFA PROTOCOL: A POSITION-BASED PELVIC FLOOR ACTIVATION FRAMEWORK FOR CLINICAL DECISION-MAKING IN PHYSIOTHERAPY

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ABSTRACT **Background:** Pelvic floor muscle training (PFMT) is widely used in physiotherapy for managing urinary, vaginal, and anorectal dysfunctions. Current literature predominantly emphasizes exercise prescription variables such as contraction intensity, frequency, and endurance, with limited guidance on structured position selection and progression in clinical practice. **Objective:** To present the Pelvic Floor Activation (PFA) Protocol (SP-PFA Protocol), a position-based clinical framework integrating condition-specific position selection with strength-guided progression to support physiotherapy decision-making. **Methods:** The PFA Protocol was developed through integration of established pelvic floor muscle assessment principles, biomechanical considerations, and consistent clinical observations. The framework consists of (1) a condition-wise position-based activation system and (2) a strength-based progression model aligned with Oxford/MMT grading. **Results:** The proposed framework offers an organized approach to selecting therapeutic positions based on clinical presentation and progressing them according to pelvic floor muscle strength and functional capacity. It emphasizes preferential activation patterns rather than isolated muscle activation. **Conclusion:** The PFA Protocol offers a clinically applicable and structured approach to pelvic floor rehabilitation. It may support improved clinical decision-making, individualized treatment planning, and future research in physiotherapy practice.

KEYWORDS : Pelvic Floor Physiotherapy; Pelvic Floor Muscle Training; Rehabilitation; Clinical Framework; Posture; Muscle Activation

1. INTRODUCTION

Pelvic floor muscle training (PFMT) is widely recognized as a first-line intervention for pelvic floor dysfunction, including stress urinary incontinence, urgency, pelvic organ prolapse, and anorectal disorders. Current literature predominantly emphasizes exercise prescription variables such as contraction intensity, frequency, and endurance, along with adjunct interventions such as biofeedback and electrical stimulation.

Previous studies indicate that pelvic floor muscle activity is influenced by changes in body position and postural alignment. However, these findings are not consistently translated into practical clinical guidance.

There remains a lack of structured frameworks integrating clinical condition, position selection, and strength-based progression.

The Pelvic Floor Activation (PFA) Protocol, hereafter referred to as the SP-PFA Protocol, is proposed to address this gap.

Aim

To present a position-based pelvic floor activation framework integrating condition-specific position selection with strength-guided progression.

2. METHODS

2.1 Framework Development

The PFA Protocol was developed through integration of pelvic floor assessment principles, biomechanics, and clinical observations. It functions as a clinical decision-support tool.

2.2 Framework Structure

1. Condition-wise activation system
2. Strength-based progression (Oxford/MMT)

2.3 Position Classification

Positions were categorized based on biomechanical influence on pelvic floor activation.

2.4 Progression Criteria

Based on coordinated:

- Squeeze
- Lift
- Inward pull
- Endurance
- Absence of compensation

Progression is also guided by symptom response to ensure safe therapeutic loading.

3. RESULTS

3.1 Condition-Wise Position-Based Pelvic Floor Activation

Clinical Issue	Primary Activation Goal	Preferred Positions	Clinical Rationale
Urinary Leakage (Urethral Dysfunction)	Improve inward closure, timing, and precision	• Prone knee bend • Prone with pillow under hips • Heel sitting (Vajrasana) • Upright chair sitting • Standing neutral pelvis	Optimizes urethral axis alignment and reduces posterior pelvic floor dominance
Vaginal Laxity / Prolapse / Poor Lift	Improve cranial lift and levator ani activation	• Knee-to-chest • Side-lying (Sims) • Supine single-leg bend • 90–90 hip position • Bridge (neutral pelvis)	Gravity-reduced positions facilitate levator lift and reduce downward pressure
Anal / Bowel Dysfunction	Improve posterior sling and pubo-rectalis control	• Quadruped • Quadruped head down • Deep squat (Malasana) • Standing hip hinge • Forward fold	Posterior pelvic tilt enhances anorectal sling mechanics
Perineal Body Weakness / Scar (Postpartum)	Improve central support and superficial muscle activation	• Butterfly • Knees falling outward • Happy child • Legs up the wall	Hip abduction and reduced load facilitate perineal body engagement
Pelvic Floor Asymmetry (Right ≠ Left)	Activate weaker side and reduce com-pensation	• Side-lying (weaker side down) • Supine single-leg bend (weaker leg loaded) • Half-kneeling (weaker side knee down) • Split-stance standing	Asymmetrical loading exposes and retrains unilateral pelvic floor weakness

3.2 Strength-Wise Position Progression System (Oxford MMT / SP-PFMC Scale Based)

Level	Pelvic Floor Strength	Primary Focus	Recommended Positions
Level 1	Grade 0–1 (Very Weak)	Awareness and gentle activation	• Supine; Crook lying • Knee-to-chest • Side-lying (Sims) • Legs up the wall

Level 2	Grade 2–2+ (Weak)	Consistent activation and initiation of lift	• Prone • Prone on elbows • Prone knee bend • Butterfly • Happy child
Level 3	Grade 3–3+ (Moderate)	Strength and coordination	• Quadruped • Child's pose • Pelvic Bridge (neutral pelvis) • Standing hip hinge
Level 4	Grade 4–4+ (Strong)	Functional endurance and load tolerance	• Deep squat • Half-kneeling • Wall slide/ Wall supported squat • Standing neutral pelvis
Level 5	Grade 5 (Very Strong)	Dynamic and reflexive control	• Bear pose • Modified side plank • Marching • Impact exercise with Knack

4. DISCUSSION

The PFA Protocol provides a structured approach integrating position selection with strength-based progression. This addresses a recognized limitation in clinical practice, where exercise prescription is often generalized without clear guidance on position selection.

By organizing positions according to clinical presentation and functional capacity, the framework supports more structured and informed clinical decision-making. The emphasis on preferential activation patterns reflects the integrated function of the pelvic floor rather than isolated muscle activity.

Pelvic floor muscle training, commonly referred to as Kegel exercises, is widely prescribed in a generalized manner across different pelvic health conditions. While effective, such approaches often emphasize contraction practice without structured guidance on position selection or progression. The PFA Protocol builds on these principles by introducing a position-based framework that aligns pelvic floor activation with clinical presentation and functional demand. This allows exercise prescription to move from a generalized approach toward a more individualized and structured rehabilitation strategy. This approach further enhances clinical reasoning by linking muscle activation to biomechanical context rather than isolated repetition.

The framework also acknowledges the role of breathing coordination in pelvic floor function, where exhalation is commonly associated with increased pelvic floor activation and inhalation with relaxation. This integration may further support neuromuscular control, although detailed breathing strategies are beyond the scope of the current framework [6].

Compared to conventional PFMT approaches, which primarily focus on contraction parameters, the PFA Protocol offers a clinically applicable method for aligning position selection with therapeutic goals and progression.

The framework represents a synthesis of biomechanical principles and clinical observations organized into a structured model for practical application.

Application Across Clinical Conditions

The PFA Protocol demonstrates applicability across a range of pelvic health conditions.

In stress urinary incontinence, it improves urethral closure and load response by progressing from low-load to functional positions, supporting both strength and timing of activation.

In urgency, it enhances coordination and voluntary control through low-load, controlled positions that facilitate urge suppression.

In post-episiotomy recovery, it supports safe reactivation using tissue-protective positions, promoting healing and gradual strengthening.

In pelvic organ support deficits and vaginal laxity, it facilitates lift-oriented activation, while in anorectal dysfunction, it supports posterior pelvic floor engagement.

Clinical Example

For example, in a patient presenting with stress urinary incontinence and Oxford grade 2 pelvic floor strength, the PFA Protocol guides initial activation in low-load positions such as crook lying or side-lying. As control improves, progression is made toward upright and functional positions to prepare for tasks such as coughing and lifting.

Limitations

This framework is based on clinical reasoning and biomechanical principles and has not yet been validated through experimental or longitudinal studies. Further research is required to evaluate its effectiveness.

Future Directions

Future studies may evaluate the clinical effectiveness of the PFA Protocol through controlled trials and outcome-based research.

5. Clinical Implications

The PFA Protocol provides physiotherapists with a structured method to guide position selection and progression, supporting individualized rehabilitation and improved clinical consistency. It can be implemented in routine clinical practice without the need for specialized equipment.

6. CONCLUSION

The PFA Protocol presents a novel, position-based clinical framework integrating condition-specific activation with strength-guided progression. It offers a structured approach to support decision-making in pelvic floor rehabilitation and provides a foundation for future research.

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