

Physiotherapy Assessment to Identify the '5 Fs': A Concept of Innovative Pelvic Floor Training

Bary Berghmans*

Pelvic Care Center Maastricht, Maastricht University Medical Center, Maastricht, Netherlands

COMMENTARY

In the recommendations of the 6th International Consultation of Incontinence (ICI) [1] physiotherapy is considered a level 1, grade A, first-line treatment for the most prevalent kinds of urinary incontinence, stress, urgency and mixed urinary incontinence. When the attentive reader carefully looks at the ICI algorithms regarding initial management of urinary incontinence in women, he or she will find out that the medical diagnosis is actually no more than a 'presumed diagnosis' [2]. So, it might be that, based on such medical data, patients will be sent for treatment to a physiotherapist with unclear health problems, underlying pathology and consequences [3]. Therefore, a physiotherapeutic assessment is essential to find out if, and to what extent, physiotherapy is helpful to deal with the consequences of the health problem urinary incontinence and what treatment components are warranted [3].

According to the guidelines of the Royal Dutch Society for Physiotherapy, using the medical condition of the health problem of urinary incontinence, physiotherapy assessment for female urinary incontinence should be used to formulate an optimal treatment plan [4]. This is examined in the context of whether the underlying disorders and/or any identified unfavorable prognostic factors are modifiable by physiotherapy.

For this the International Classification of Functioning, Disabilities and Health (ICF) is used to look at the consequences of the health problem urinary incontinence on local (impairment, disorder) level, personal level (disabilities, dysfunction) and psychosocial level (restriction in participation) [5]. Collecting and evaluating/analysing all deficits on these three different levels the physiotherapist can select the elements and components for treatment based on a treatment plan according to the findings of the assessment and medical data (often not or insufficiently available to the physiotherapist) [3,5]. Relevant factors such as type, frequency, severity, precipitating factors, social impact, effect on hygiene and quality of life, the measures used to contain the leakage and whether or not the individual seeks or desires help should be specified [3].

Components of the physiotherapy assessment are a thorough history-taking, the patient's self-report, validated questionnaires, frequency-volume chart or bladder diaries, and the therapist's own physical examination of the patient.

Not only will a complete and structured physiotherapy assessment in women with urinary incontinence serve to identify who will benefit most from these first-line interventions, but also such an assessment will direct the health care provider to select every parameter necessary to be incorporated in an effective pelvic floor muscle training for that individual patient [3,6].

The objectives of pelvic floor muscle training are to optimize muscular force and the use of pelvic floor muscles as required for continuously changing daily, work- and sport-activities. Parameters important to be assessed are timing, coordination, voluntary/conscious and involuntary/unconscious contraction and relaxation, explosive strength, endurance, fatigability, repeatability and pre-contraction, also called fast-feed-forward-loop [7]. Usually, activation of the pelvic floor muscles before or during physical efforts seems to be an automatic anatomic response, so an unconscious contraction. This fast-feed-forward-loop contraction of pelvic floor muscle might precede bladder pressure rise by 210-270 milliseconds [8]. In female urinary incontinence this phenomenon is jeopardized, an important reason for the loss of spurs or drops as in stress urinary incontinence. During intra-abdominal pressure rise, for instance during coughing or lifting heavy weights, a well-timed, quick and strong pelvic floor muscles contraction may prevent urethral descent [3].

Physiotherapy has been reported to have significant effects in female stress urinary incontinence [1]. However, in many cases women are offered silly and boring exercise programs, undermining their motivation to keep ongoing with the pelvic floor muscle exercises, so there is the big challenge of adherence and compliance [9]. By declining to continue to do their home maintenance programs, the women simply do not feel sufficient progress, driving them into the arms of surgeons [9].

This widely spread lack of creative and innovative training programs should change! Physiotherapists will need to find

Correspondence to: Bary Berghmans, Pelvic Care Center Maastricht, Maastricht University Medical Center, Maastricht, Netherlands, Tel: +3143 3875063; +31653641238; E-mail: bary.berghmans@maastrichtuniversity.nl

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solutions for the current lack of sufficient especially long-term-efficacy of their interventions. Based on adequate physiotherapeutic diagnostics a proper patient selection and consequent pelvic physiotherapy will have a high and long lasting cure/improvement rate [3,10].

To ensure an adequate sequence in pelvic floor muscle training the concept of the '5 Fs', i.e., Find-Feel-Force-Follow-through-Functional training of pelvic floor muscles has been developed and described [7,9]. The challenge for the pelvic physiotherapist is to incorporate functional training in such a way that patients will experience progress of their symptoms as soon as possible. Functional training of pelvic floor muscles means that the pelvic physiotherapist needs to mimic daily life, work and sport activities and situations in which the patient used to experience incontinence and now - automatically - is capable to avoid this [3]

This innovative pelvic physiotherapy program offers a valuable first-line treatment option in the management of female patients with stress urinary incontinence. It is of great importance to demonstrate, both from the theoretical evidence and the clinical practice why and how current pelvic floor muscle assessment and training should develop and move on to a next stage.

The '5Fs' program intends to do so.... The components of the 5Fs are [7,9]:

Find the pelvic floor: The 1st F

The 5Fs PFMT program starts with education about anatomy, physiology, biomechanics, pathophysiology, and the potential of physiotherapy using video materials including didactic metaphors, images, and narrated animations.

Feel the pelvic floor: The 2nd F

Being able to find the PFM, now the patient will learn to execute selective contractions and relaxations of the pelvic floor muscles, first performing mono tasks, then double tasks, followed by multi tasks. Success is defined as the patient is able to feel selective pelvic floor muscles contractions and relaxation in different situations, positions, and activities. This phase is a prerequisite for the following strength and coordination training.

Force the pelvic floor: The 3rd F

During the 3rd "F" training, strength, explosive strength, endurance, timing, pre-contraction, exhaustibility, coordination will be reinforced according to physiological rules and principles of motor learning and strength training [4,11]. Basic physiological muscle training principles teach us that pelvic floor muscle exercise programs must consist of selective maximal voluntary contractions with a repetitive character (Force) and sufficient time of relaxation between consecutive pelvic floor muscle contractions. Exercises can activate latent motor units to the point that the muscle becomes functional again, in stress urinary incontinence the indirect support of the bladder neck.

Daily regimes of increasing repetitions to the point of fatigue seem to be recommended (8-12 maximal pelvic floor muscles

contractions, 1-3 sec to 6-8 sec hold/relax, 3 extra quick peak contractions super imposed on the maximal contraction, 3 times a day for at least 6 months [12]

Follow through: The 4th F

In the 4th "F" phase the patient with (now restored) awareness how to contract and relax the pelvic floor muscles, builds up strong and fatigue resistant pelvic floor muscles. This strategy of aware contractions to prepare the PFM to act fully automatic and adequate during all kinds of (functional) activities with intra-abdominal pressure rise such as lifting a baby, playing tennis, sneezing, coughing. The follow-through phase, or simple "the 4th F," is based on two fundamentals: (1) to facilitate functional training and (2) to incorporate the training in daily life activities of the patient, which is the final aim for adherence.

Functional training: The 5th F

The 5th "F" phase facilitates restoration of UI during real time daily life activities or by mimicking these situations using gaming and virtual reality. The program supports self-confidence and aims to restore feelings of well-being during fun-, favorite-of former activities because these activities are again possible without the fear for shame, uncertainty related to and embarrassment of involuntary urine loss.

CONCLUSION

Pelvic physiotherapy is effective in the treatment of female urinary incontinence. Adequate assessment, aimed at correct patient selection and choice of evidence-based interventions, prioritization and integration of pelvic floor muscle training into daily activities, functional training together with focus on strategies to optimize patient's adherence to and compliance with pelvic floor muscle training are keys to this success.

CONFLICTS OF INTEREST

The author declares that he has no conflicts of interest to disclose.

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