



Research

Strategies to enhance self-efficacy and adherence to home-based pelvic floor muscle exercises did not improve adherence in women with urinary incontinence: a randomised trial

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KEY WORDS

Exercise
Pelvic floor
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ABSTRACT

Question: Do strategies to enhance self-efficacy and exercise mastery affect adherence to home-based pelvic floor muscle exercises in women with urinary incontinence? **Design:** Two-arm, parallel, randomised, controlled trial with intention-to-treat analysis. Randomisation was performed using computer-generated random numbers in five blocks of 20 women. **Participants:** Eighty-six women with stress, urgency or mixed urinary incontinence. **Intervention:** All participants underwent three individual physiotherapy clinic visits at Day 0, 15 and 30, and 2 further months of home-based pelvic floor muscle exercises. The experimental group also received self-efficacy enhancing interventions, including a structured discussion on accomplishments and goals, a 9-minute video with testimonials, and a reminder. **Outcome measures:** The primary outcome – adherence to at least 20 fast and 20 slow contractions every day – was evaluated with a structured questionnaire at 15, 30 and 90 days after enrolment and completion of a daily diary. A validated questionnaire was used to assess urinary incontinence. Self-efficacy and pelvic floor muscle function were also measured. **Results:** Seven women withdrew from each group before the Day-30 assessment. There was no difference in adherence to pelvic floor muscle exercises at 90 days between the groups (MD 0.5 points, 95% CI –1.1 to 2.1) on the questionnaire, which was scored from 2 to 21. At Day 90, 56% of the experimental group and 44% of the control group were performing the exercises every day. Adherence scores of both groups decreased during the 2-month follow-up period without any supervised physiotherapy session ($p < 0.05$). The groups did not differ on the remaining secondary outcomes. **Conclusion:** Discussion of accomplishments and goals, a testimonial video and a reminder did not increase exercise adherence more than exercise mastery. **Trial registration:** Brazilian Registry of Clinical Trials UTN:U1111-1128-8684. [Sacomori C, Berghmans B, Mesters I, de Bie R, Cardoso FL (2015) Strategies to enhance self-efficacy and adherence to home-based pelvic floor muscle exercises did not improve adherence in women with urinary incontinence: a randomised trial. *Journal of Physiotherapy* 61: 190–198]

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Introduction

Pelvic floor muscle exercises (PFME) are strongly recommended for the management of all types of urinary incontinence, but to be effective they require adherence.^{1–3} Systematic reviews have shown that more intensive and supervised programs are more effective for treating urinary incontinence than non-supervised programs.^{1,2,4} However, some trials have found similar results for both supervised and non-supervised interventions.^{5,6} Non-supervised, home-based practice of PFME would be ideal for women who find it difficult to go to treatment centres. Adherence is an important aspect of home-based practice of PFME to treat urinary incontinence. Adherence is defined as the extent to which a person's behaviour corresponds with agreed recommendations from a healthcare provider.⁷

Adherence is often linked to self-efficacy; therefore, self-efficacy is a construct that is frequently targeted in behavioural

change interventions. It is important to distinguish between general self-efficacy (ie, one's perceived ability to achieve what one undertakes) and self-efficacy with a specific task. For example, an individual may score differently in general self-efficacy compared with self-efficacy restricted to a particular task.

A woman's belief in her own ability to perform PFME is an important predictor of adherence to PFME.^{8,9} Therefore, in this study, the concept of 'self efficacy' was defined as this specific perceived ability to perform PFME every day at home.

People use four sources of information to judge their efficacy: vicarious experiences; verbal persuasion; mastery experience (based on performance outcomes); and physiological or psychological feedback.¹⁰ The latter two sources, which provide women with the experience they need to master PFME, are considered to be the most effective in improving self-efficacy. Through experiencing failures and, ultimately, success in performing PFME, women can learn that they can achieve this task with sustained effort.¹⁰

Three clinical trials have investigated the use of additional prompts to improve adherence to PFME.^{8,11,12} Two of the studies prompted the performance of PFME with an electronic reminder, which increased adherence to non-supervised exercises at home according to instructions given in one session.^{11,12} The other study found no improvement in adherence to home-based exercises when health education brochures and reminders were added to supervised PFME sessions in which personal health counselling was monitored and optimised.⁸ Therefore, the effects of reminders for PFME remain inconclusive.

Therefore, the research question for this study was:

In women with urinary incontinence who underwent a PFME training program with three physiotherapy supervised sessions, do strategies to enhance self-efficacy and adherence (ie, learning video, reminders and goal setting) and exercise mastery (ie, personal persuasion, performance outcomes and physiological feedback during treatment sessions) improve adherence to home-based PFME?

Method

Design

A randomised, controlled trial was performed in Florianópolis, Brazil, between April 2012 and August 2013. All participants received three sessions with a physiotherapist on Days 0, 15 and 30. These sessions involved PFME, instructions on how to deal with urinary incontinence, and instructions to perform PFME every day at home. Only those participants who were randomised to the experimental group also received additional strategies to enhance self-efficacy in PFME: a video that modelled success with PFME through women presenting testimonials; a reminder magnet; and a goal-setting discussion, which occurred in the follow-up period.

Women who attended either primary care doctors and nurses or secondary care urologists or gynaecologists from the Florianópolis region public health system were referred to this study. Recruitment advertisements were also placed in hospitals. Women voluntarily contacted the researchers by telephone and scheduled an evaluation. After screening for eligibility, the participants were allocated to the next available allocation by the enrolling researcher. Allocation of participants to groups was randomised using five blocks of 20 computer-randomised allocations prepared by an independent person. Participants were allowed to continue other usual healthcare. The use of hormone replacement therapy and medication for the management of urinary incontinence was recorded.

Participants and therapist

The trial included women aged > 18 years, with symptoms of urinary incontinence and a mini-mental score > 24, indicating good cognitive functioning.¹³ Exclusion criteria were: pregnancy or postpartum period (< 6 months after delivery), virginity, illiteracy, any observed vaginal prolapse that exceeded the hymenal area, any urogenital infection, women unable to contract their pelvic floor muscles (scored 0 on the Oxford Modified scale,¹⁴ signifying no discernible muscle contraction), vaginal atrophy that impeded the insertion of two fingers into the vaginal cavity, and any systemic disorder, including diagnosed cancer or neurological diseases.

One physiotherapist, who had 6 years of experience and 2 years of specific experience in treating incontinence, provided all of the three supervised sessions for each participant.

Intervention

The experimental intervention used in this study was devised to incorporate the four principal sources of information that were proposed by Bandura¹⁰ to influence self-efficacy: mastery

experience, vicarious experience, verbal persuasion, and physiological and emotional states (Table 1). It is important to note that performance accomplishments and verbal persuasion are inherent to any physiotherapeutic approach. Most physiotherapists try to convince their patients about the importance of exercising by offering mastery training while constantly providing feedback to them. Therefore, the main sources for self-efficacy – persuasion, mastery experience and feedback – can be achieved during supervised exercise sessions. In addition to that, however, the experimental group received the following interventions: a video with testimonials from women, which acted as a model of success with PFME; a magnet reminder as a prompt; and a structured discussion about short-term and long-term goals, intended to enhance independent performance of PFME. The control group also had treatment targets, as they are inherent to any physiotherapeutic approach, but the experimental group had the specific goals and achievements registered in their diaries.

The three physiotherapy sessions delivered to both groups included: breathing and body awareness exercises in front of a mirror with a gym ball to help locate the pelvic floor muscles and to practise pelvic movements; instruction of PFME during vaginal palpation; discussion of factors associated with urinary incontinence, bladder hygiene, and how to deal with them; use of a device^{aa} to provide visual and pressure biofeedback; and training to contract the pelvic floor muscles before situations that increase intra-abdominal pressure (known as the 'knack').¹⁵ All participants received a folder with information about how to deal with urinary incontinence and how to perform the exercises. This folder was specifically created for this study and three experts in urinary incontinence treatment evaluated its content.

Construction of the exercise protocol was adapted from the regimen used in the randomised trial by Bø and colleagues, which established the efficacy of PFME.¹⁶ Bø and colleagues instructed participants to perform a daily total of 24 to 36 slow contractions (high-intensity maximal voluntary contraction with a 6 to 8 seconds hold). Each slow contraction was followed by three to four fast contractions and then 6 seconds of rest. The PFME protocol used in the present study therefore differs from the regimen of Bø and colleagues because the fast contractions were not performed immediately after each slow contraction. Instead, at the first treatment session, participants were instructed to perform at least 20 repetitions every day of each of the following exercises: close-to-maximal contraction maintained for up to 10 seconds (ie, slow contractions); and close-to-maximal contraction and subsequent relaxation (ie, 1-second fast contractions). Aiming at overload, participants were instructed to increase the number of repetitions after each supervised session, according to their abilities, and to adopt different body positions for exercise: supine, sitting, standing or semi-squatting. Participants were advised that they could choose to perform the exercises in one or more sets a day and whether to do the slow or fast contractions first. The number and duration of contractions was individualised according to each participant's abilities. Patients were encouraged to actively use the 'knack'.¹⁵ Participants were instructed to rest for the same duration as the duration of the preceding contraction.

Outcome measures

In order to characterise the participants at baseline, socio-demographic and clinical variables were obtained. The socio-demographic variables included: age, marital status, education level, income, ethnicity, perceived health status, smoking status, physical activity during leisure time, and sexual activity with a partner. The clinical variables were parity, body mass index, comorbidities, menopause management, gynaecological surgery, pelvic floor muscle strength, pelvic floor muscle endurance, type of urinary incontinence, frequency of urinary incontinence and amount of urinary incontinence.

The primary outcome was adherence to PFME at Day 90. Adherence was also assessed at Days 15 and 30. Other secondary

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