

PELVIC FLOOR EXERCISE CLASSES FOR URINARY INCONTINENCE IN OLDER WOMEN: A FEASIBILITY STUDY

Hypothesis / aims of study

Pelvic floor muscle (PFM) training programs are delivered in either one-on-one treatment sessions or group exercise classes.¹ Both protocols have shown to be effective in reducing stress and mixed female urinary incontinence (UI) in young and middle aged women. Group therapy, however, seems to offer additional benefits such as social interaction, group support and greater motivation to do the exercises.² In addition, group therapy is less time-consuming for health professionals in contexts where resources are lacking. Although RCTs on one-on-one PFM training program have shown good results in aging women, with up to 64% of women satisfied and wanting no further treatment,³ no study has yet evaluated the effect of group PFM exercise classes in this population.

The primary aim of this study was to determine the feasibility of using exercise classes as a means of intervention for stress and mixed UI among women aged 60 years and older. Feasibility was defined as the participation rate in the program, the completion rate and the impact (responsiveness of UI symptoms to the intervention). Our second objective was to better understand the factors that influence attrition vs. a successful response to the exercise classes, in order to prepare a randomized controlled trial. We hypothesized that a majority of potential participants would attend the classes and complete the pre and post-intervention evaluation. More than 50% of women would respond to the treatment as measured by the absence/reduction of UI episodes on the post-intervention 72-h diary.

Study design, materials and methods

We conducted a quasi-experimental study, with UI symptom measurements taken before and after implementation of the exercise classes. Four focus group sessions with class participants took place after the last exercise class to obtain more detailed feedback about their experience with the exercise program.

Twenty-seven community-dwelling older women aged 70.77 ± 7.75 years with signs and symptoms of stress or mixed UI were recruited from the incontinence clinics of three major university hospitals. To be included in the study, women had to be 60 years or older, ambulatory, having urinary leakage at least once per week and persisting for at least three months, and describe a predominant pattern of stress UI on the Urogenital Distress Inventory questionnaire (number of leakage episodes on effort, exertion, sneezing or coughing exceeding the number related to urgency). Women on hormone replacement were not excluded as long as their prescription had been stable for at least 6 months. Women were excluded if they presented risk factors of incontinence likely to interfere with the effects of the treatment (chronic constipation and obesity); if they experienced genital prolapse (>2 Pop-Q), had undergone previous pelvic irradiation or if they had any other acute or chronic medical problems or major functional impairment likely to interfere with treatment and evaluation.

Women participated in weekly 60-min exercise classes in groups of six to eight for 12 consecutive weeks under the supervision of an experienced physiotherapist. Each session consisted of a 15-min period of education on the topic of UI; a 30-min session on PFM training including PFM strengthening, endurance and coordination exercises in different body positions (standing, 4-point kneeling, sitting and lying supine on a wedge), and a 15-min session of strength training for the trunk and leg muscles. Mobility, balance and relaxation exercises were conducted between the series of PFM contractions. To allow progression in the treatment regimen, the PFM exercise protocol was chronologically divided into three stages of increasingly difficult exercises. In addition, participants were required to perform home PFM exercises five days per week. Participants were provided with an exercise diary describing the home exercise program and monitoring exercise compliance.

The main outcome was the feasibility of group exercise programs in older women. Feasibility was defined and evaluated on 3 levels: a) participation rates in the treatment session, home exercise program and pre and post evaluation b) completion rate of the program and c) responsiveness of UI symptoms to the intervention. Responsiveness of UI symptoms to PFM exercise classes was defined as a change in the severity of incontinence using the 72-h urinary diary, the 24-h pad test and the Urogenital Distress Inventory questionnaire. The Incontinence Impact Questionnaire was also used to identify the impact of the exercise classes on quality of life.

Results

Participants complied with study demands in terms of attendance to treatment sessions (90%), completion of home exercise programs (78%) and pre and post evaluation (95%). The assessments and intervention were well tolerated by older women, with an attrition rate due to personal/spousal illness below 15%. Responsiveness to the intervention is presented in Table 1.

Table 1. Outcomes on UI pre and post group PFM exercise classes (n= 27)

	Pre-Intervention	Post-Intervention	P* value
72-h Urinary Diary (mean episodes/UI per day)	1.77 ± 1.50	0.88 ± 1.11	0.005**
24-h Pad test (g)	21.41 ± 47.96	2.67 ± 3.85	0.058
Urogenital Distress Inventory (UDI) Questionnaire	27.27 ± 9.64	16.88 ± 9.49	0.012**
Incontinence Impact Questionnaire (IIQ)	13.23 ± 15.08	6.96 ± 7.42	0.001**

* Paired T-test;

Comment [C1]: It is now considered more politically correct to call subjects participants. This should be corrected throughout the text.

Finally, post-study focus groups identified *close supervision by the physiotherapist, and short daily PFM exercise* as facilitators for participation in weekly PFM exercise classes, completion of a 12-week exercise class program and home PFM exercises throughout the program.

Interpretation of results

This preliminary study demonstrated that women aged 60 and older are good candidates for group PFM exercise class and follow study demands with excellent participation rates in treatment sessions, pre-post evaluations, compliance with the home exercise program and low attrition. Even with a small sample size, this pilot study suggests promising results to treatment of UI symptoms with the intervention. After exercise classes, women had significantly less urinary leakage and negative effects of UI symptoms as measured by the 72-h urinary diary and UDI questionnaire respectively. Women also reported significantly improved UI-specific quality of life as measured by the IIQ. Finally, this study identified facilitators for participation in weekly PFM exercise classes and home exercise programs that will need to be taken into consideration for the success of a larger multi-center trial.

Concluding message

This study confirms the feasibility of a multi-center trial on group PFM exercise classes as a means of intervention for stress and mixed UI among women aged 60 years and older. A randomized controlled trial that includes this population will provide evidence regarding the effectiveness of this therapy.

References

1. Pelvic floor muscle training versus no treatment, or inactive control treatments, for urinary incontinence in women. [Cochrane Database Syst Rev](#). 2006 Jan 25;(1):CD005654.
2. Group treatment of female urinary incontinence. Literature review. *Physiotherapy*. 2001;87(5):226-234.
3. Adult Conservative Management in Abrams P. Cardozo L. Khoury S. editor(s). *Incontinence*. Third International Consultation on Incontinence. 3rd Edition. 2005. France, Health Public Publication Ltd. p.856-1059.

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Scientific Committee of the Institut de Gériatrie de Montreal

Scientific Committee of the Institut Universitaire de Gériatrie de Sherbrooke and followed the Declaration of Helsinki Informed consent was obtained from the patients.