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Teaching Pelvic Floor Muscle Exercises to Women in a Primary Care Setting: Participants' Adherence and Acceptance

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Abstract

Background: To investigate the acceptance and adherence to an intervention that included teaching Pelvic Floor (PF) muscle exercises to women who underwent the routine examination for cervical cancer prevention.

Methods: This prospective study occurred in a primary care setting. Thirty-eight women who received a functional assessment of the PF musculature and behavioural guidance were interviewed by telephone two months later. The intervention consisted of one single section of teaching adequate contraction and PF exercises. Questionnaires were employed that addressed urinary losses, level of physical activity, sexual function (Female Sexual Function Index - FSFI) and open questions for adherence and acceptance. Pelvic floor muscle were evaluated immediately after the routine examination for cervical cancer prevention with vaginal palpation and ranked with Ortiz scale. Descriptive statistics and the Mann Whitney U test were used for $p < 05$.

Results: Twenty-four women (63.1%) adhered to the recommended exercises. The reports of the participants demonstrated that they accepted the intervention and showed a positive impact on diverse aspects: knowledge, sex life, encouragement to practice physical exercise and PF exercises, and improvement in urinary loss symptoms. The FSFI mean score was 21.87 (sd = 8.74; median = 23.1). Aspects such as age, schooling, and level of physical activity, body mass index, sexual function, and urinary loss symptoms did not affect adherence.

Conclusion: Preventive actions such as the one described here constitute a way of facilitating access to healthcare among the population with the lowest financial means. This suggests that such interventions should be encouraged in primary health care settings.

Keywords: Women; Pelvic floor; Dysfunction; Prevention; Exercise adherence

Introduction

Pelvic floor (PF) dysfunction is a source of morbidity and negatively affects one's quality of life [1]. Dysfunction is often associated with muscular weakness and the failure of supporting connective tissue structures, leading in particular to urinary and faecal incontinence, prolapse of the pelvic structures, defecation problems, and sexual difficulties [2,3]. Facing such complaints, many women end up suffering in silence due to the scarcity of preventive and therapeutic strategies directed towards the problem.

In addition, the practice of exercises to strengthen the pelvic floor muscles is a low-cost strategy to prevent and manage such problems. Vaginal palpation of the PF musculature, in addition to providing a functional assessment, is the first choice for teaching a woman to perform an adequate contraction, in which there is an absence of valsalva maneuver and little recruitment of the accessory musculature (gluteus, abdominals and medial thigh musculature) [4,5]. This assessment, combined with instruction from a professional physiotherapist, may help to improve women's body awareness [6]. As such, learning how to contract pelvic floor muscles is a manner to improve contact with their genitalia as a part of their body and to rethink their sexuality [7].

On the other hand, there has been very little instruction concerning PF health in primary care because many professionals believe that such dysfunction is inevitable or is a consequence of the aging process, therefore making the practice of preventive exercises irrelevant [8]. Nevertheless, it is known that controlling behaviour variables and practicing pelvic floor exercises are important elements in the preventative and rehabilitation process [8,9]. However, in interventions which contemplate health care education, one of the factors which may compromise results is a low adherence to the orientation provided [10]. References have shown that adherence tends to be greater when symptoms are worse [9,11,12]

Few studies have assessed programs to prevent these disorders [8,9,13,14]. Sampselle et al. [15] concluded that group instruction supplemented with brief individual instruction is an effective teaching method to improve PF muscle pressure. Meanwhile Geoffrion et al. [8] showed an improvement in symptoms and quality - of - life.

Traditionally, the physical therapy approach was curative in essence [16]. Moreover, the physiotherapy service for the treatment of PF dysfunction remains difficult for the general population to access, in particular those who depend on the public health system in Brazil. Thus, the objective of this pilot study was to investigate acceptance and adherence to an intervention that included teaching pelvic floor muscle exercises with vaginal palpation to women at varied ages that who underwent the routine examination for cervical cancer prevention in South America. In addition, we aimed to compare adherents and non-adherents women.

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Materials and Methods

This was a descriptive comparative pilot study carried out together with the Women's Network Against Cancer in Florianópolis, Santa Catarina, Brazil. It was approved by the Committee for Ethics in Research of the Santa Catarina State University (n.156/2010) and was in line with the criteria of the National Health Council resolution 169/1996.

Participants

The functional assessment of the PF musculature and behavioural guidance were performed in 38 women, aged over 18 years (ranged from 19-66), not illiterate, who were not pregnant, were visiting the institution in order to undergo a routine preventive examination for cervical cancer and who had an eligible telephone for contact. The study was carried out from September 2010 until August 2011.

Instruments

Assessment of some risk factors for PF dysfunction: The aim of these assessments was to track some factors related to possible causes of dysfunction of the PF and also to facilitate the provision of more precise and individualised behavioural guidance. Among the risk factors for dysfunction, those that can be acted upon include the control of body weight, avoiding constipation, not smoking and avoiding occupational and recreational activities that increase the intra-abdominal pressure in an excessive or repeated manner [17].

Anthropometric risk factors - weight, height, body mass index and waist circumference - were determined with the aid of a weight scale, a metric tape and a stadiometer. The level of physical activity was calculated through the International Physical Activity Questionnaire (IPAQ) short version applied in the form of an interview.

Assessment of symptoms of PF dysfunction: PF dysfunction was assessed by means of the self-report of urinary losses, self-reported constipation (yes/no), and difficulty in evacuating the bowels (yes/no). Sexual function was evaluated by means of the validated Female Sexual Function Index.

Assessment of pelvic floor function: This was carried out by the same assessor using the digital vaginal examination during a maximal contraction of the PF musculature, with the result being graded using the scale described by Ortiz et al. [18], according to criteria described in table 1. Physical examination was performed immediately after the routine examination for cervical cancer prevention.

Assessment of adherence and perception: A semi-structured questionnaire not previously validated was used, applied in the form of a telephone interview two months after intervention, and consisting of questions related to short-term adherence to instructions and perceptions concerning possible improvements (appendix). Open responses were classified according to its content in categories.

Procedures and guidance to the patients: The patients were approached collectively in the waiting room, presented with the aim and the procedures of the research and, with the aid of a banner featuring graphics, the concept and function of the PF were explained, together with the risk factors for dysfunction [17] and the benefits of practicing preventative pelvic floor muscle exercises.

Grade 0	No palpable contraction
Grade 1	Weak contraction recognized upon palpation
Grade 2	Contraction present and recognized upon palpation
Grade 3	Contraction present with opposing resistance shorter than 5 seconds
Grade 4	Contraction present with opposing resistance longer than 5 seconds

Table 1: Ortiz Scale to grade pelvic floor muscle function.

Next, each woman was assessed individually with the questionnaires and anthropometric measurements. During this assessment, they were given guidance concerning weight control, a recommendation to walk for at least 150 minutes/week and advice on the control of constipation (eating more fruits and vegetables and drinking more water). Finally, the functional assessment of the PF musculature was carried out together with pressure biofeedback (Perina, Quark®) in order to teach correct pelvic floor muscle exercises, with verbal feedback being given as well as guidance on exercises to be performed at home. Women were instructed in accordance with the recommendations of Dattilo [19] 10 repetitions 5 to 6 times per day in sitting position. Women who presented no palpable contraction (grade 0) were invited to participate in an assisted program of pelvic floor muscle training.

The purpose of the exercise protocol was primarily to provide women's pelvic floor awareness and stimulate them to contract their pelvic floor muscles on their daily life. Considering that only one physical therapy section for teaching PF muscle exercises was performed women were just encouraged to practice exercises for fibers type I (contracting and maintaining for 10 seconds) and II (to contract and relax). This procedure took around 10 minutes.

The model of intervention was the health belief model, which is centred on the idea that for an individual to adopt a behaviour he/she needs to believe that such behaviour can prevent a harmful disease and that the costs or barriers are less than the benefits of its adoption [20].

Statistical Analysis

Descriptive statistics (mean, median, standard deviation, frequencies and percentages) were employed, while the Mann Whitney U test was used to compare some variables between the women who followed the guidance and those who did not (age, body mass index, schooling, number of births, muscle function, extent of physical activity and sexual function score). SPSS version 17 was used for these analyses. A value of $p < 05$ was adopted.

Results

Adherence to pelvic floor muscle exercises

The age of participants ranged from 19 to 66 years, with a mean of 38.8 (±13.1; median = 37) years. Twenty-five women (65.8%) had never heard of PF exercises. Those who were familiar with them (34.2%) had learned of them through sexologists who gave instruction on how to use pompoir to improve sexual performance, through the communications media, working in the health area and, in one case, they had already undergone treatment with these exercises for urinary incontinence. Just four women (10.5%) reported that they had practiced the exercises before, with two of them affirming that they did this with the aim of increasing sexual pleasure.

After intervention, twenty-four women (63.1%) began to practice the recommended exercises, with 13 (54.3%) of them perceiving an improvement in some aspect and 9 (37.7%) reporting that they had not yet perceived any change. The reasons given by the women who did not carry out the exercises were: lack of time (4 women – 30.8%), thinking that only people who had a problem should perform the exercises (4 –

30.8%), forgetting (3 – 23%), not feeling confident about performing the exercises (1 - 7.7%), and being worried about other health problems (1 - 7.7%).

The women that adhered to the exercises reported the following exercise frequencies: once a day (10.5%), 6 times/week (2.6%), 4 times/week (2.6%), 3 times/week (13.2%), twice a week (21.1%) and once a week (13.2%). When asked about the number of repetitions performed each time, there was a variation in the responses that ranged from just 3 slow contractions to 80 fast contractions.

No significant difference was found between the group that adhered to the PF exercises and the group that did not considering: age, body mass index, schooling, number of births, muscle function, extent of physical activity and sexual function ($p > 0.05$). The frequency of health problems, as well as symptoms of PF dysfunction (loss of urine and constipation), also were similar among the groups ($p > 0.05$). Consequently, none of the characteristics presented in Tables 2 and 3 explained adherence to the practice of the pelvic floor exercises.

Most of the women (86, 8%) were sexually active with a partner during this period. The FSFI mean score was 21.87 (sd = 8.74; median = 23.1). We still don't have a Brazilian cutoff score for FSFI but using the American [21] and Turkish [22] cutoff points (26.55 and 25, respectively) we found a rate of sexual dysfunction of 63.3% and 55.3%, respectively.

Participants' acceptance of the intervention

Thirty-seven women (97.4%) reported that they enjoyed the assessment and the advice received. Only one described enjoying it "more or less", going on to say that she felt a little embarrassed answering

	Total (n=38)		Women who adhered to the PF exercises (n=24)		Women who did not adhere to the PF exercises (n=14)		
	n	%	n	%	n	%	p*
Marital status							
Married	25	65.8	16	66.6	9	64.3	n.s.
Single/ Separated/divorced	13	34.2	8	33.4	5	35.7	
Have Sexual Activity with partner	34	89.5	22	91.7	12	85.7	
Schooling							
Illiterate/ Primary school	14	36,8	7	29.2	7	50	n.s
High school/ Higher education	24	63,2	17	70.8	7	50	
Number of births							
None	11	28.9	6	25	5	35.7	n.s
From 1 to 2	12	31.7	8	33.4	4	28.7	
From 3 to 7	15	39.4	10	41.6	5	35.6	
Engages in physical activity	18	47.4	12	50	6	46.2	
BMI (6 missings)							
Normal	21	55,3	12	50	9	64.3	n.s
Overweight/Obese	11	28,9	6	25	5	35.7	

*X^2 test; n.s= non significant for $p < .05$

Table 2: Sociodemographic variables, number of births, practice of physical exercise and BMI of the women who did and did not adhere to the practice of PF exercises.

	Total		Women who adhered to the PF exercises (n=24)		Women who did not adhere to the PF exercises (n=14)	
	n	%	n	%	n	%
Health problems						
Respiratory (asthma/bronchitis)	4	10.8	3	12.5	1	7.1
Diabetes	1	2.6	0	0	1	7.1
Arterial hypertension	5	13.2	4	16.7	1	7.1
Symptoms of depression	8	21.1	5	20.8	3	21.4
Recurrent urinary infection	7	18.4	5	20.8	2	14.3
Back problems	6	15.8	2	8.3	4	28.6
Post-Menopausal	11	28.9	8	33.3	3	21.4
Hormone replacement therapy	7	18.4	6	25	1	7.1
Smoking	7	18.4	5	20.8	2	14.3
Reports symptoms of urinary incontinence	18	47.4	11	45.8	7	50
Reports constipation	17	44.8	11	45.8	6	42.8
Reports difficulty in evacuating the bowels	12	31.6	8	33.4	4	28.5
PF muscle function						
Grade 0	4	10.4	1	4.1	3	21.4
Grade 1	8	21.1	4	16.7	4	28.6
Grade 2	5	13.2	4	16.7	1	7.1
Grade 3	8	21.1	6	25	2	14.3
Grade 4	13	34.2	9	37.5	4	28.6

Table 3: Associated health problems, urinary incontinence, constipation, difficulty in evacuating bowels and muscle and sexual function among the participants who did and did not adhere to the practice of PF exercises.

questions concerned with sexual function; however, she also said that she knew the procedure was important. During the telephone interview one woman became confused and did not remember exactly what we were talking about, something which may have been associated with a low level of schooling (primary school incomplete). It is possible that she did not put the advice into practice because the questions addressed were alien to her daily routine.

Most women enjoyed the program and the reasons they attributed were: learned numerous aspects of prevention (n = 21), realised that it was a complete assessment covering women's health in a broad manner (n = 9), enjoyed the approach (n = 3), had never consulted a healthcare professional regarding this (n = 2) and reinforced what she already knew (n = 1).

The women's perceptions of "in what way the program may have helped them" were classified in seven domains: did not perceive any change, knowledge, self-awareness, improvement in sex life and motivation to change behaviours such as practice PF or physical exercises and changing micturitional behaviour (Table 4).

Discussion

The rate of adherence to the practice of PF exercises two months after intervention was satisfactory (63.1%) once the participants were not seeking for these instructions. An analogous approach in United States of America described similar adherence rates [15].

However, in many cases, the frequency and intensity were below the recommended levels of at least three times per week at 60-65% of the maximal repetition [23]. It is clear that programs of this nature help to improve women's knowledge of their own bodies and stimulate the practice of PF exercises; however, they do require reinforcement to achieve better results, mainly with respect to the frequency and intensity of the exercises. Such support can be provided by telephone or through giving out a diary for exercise control. Furthermore, adherence might have been even greater if there had been constant professional supervision, as suggested by other studies [24,25].

None of the aspects controlled here (age, BMI, schooling, number of births, muscle function, extent of physical activity, sexual function, health problems and symptoms of PF dysfunction) explained the adherence to the practice of pelvic floor exercises. Our hypothesis was that the greater the reported symptoms related to dysfunction, the more the women would adhere to the exercises, as found previously in other studies [9,11,12]. It has been suggested that some psychological variables determine adherence, such as self-efficacy and motivation [9,24]. Further studies that control these variables should provide a better explanation of the phenomenon of adherence to the practice of PF exercises.

Interestingly we found a high rate of sexual dysfunction - 63, 3% and 55, 3% - considering the cutoff points for American [21] and Turkish [22] women. This reinforces the idea that many women still suffer in silence due to sexual problems [26].

The reasons given by the women as barriers to the practice of the exercises - a lack of time, forgetting, thinking that only people who had a problem should do the exercises, not feeling confident about doing the exercises and being worried about other health problems - were similar to those described in other studies in this area [13,27,28]. In those cases of the unsupervised practice of PF exercises, women also mentioned the influence of social norms, motivation to comply with such norms, expectations of self-efficacy, attitudes in relation to expectations of results, representation that the patient had of the disease, emotions involved and self-care strategies [24]. Unfortunately, these were not controlled in the present work.

Analysis of women's perceptions regarding coincidental changes following advice revealed that the majority (78.4%) obtained some benefit, whether it was greater knowledge of how to prevent such dysfunction, better understanding of their own body, an improvement in their relationship with a partner or an improved sex life, initiation of physical exercise or pelvic floor exercises, or even a reduction in symptoms of urine loss. This study is unusual because it encompasses questions such as the practice of physical activity and sexual function, which makes the approach broader than traditional prevention programs that focus mainly on the practice of PF exercises [9,13,14,29,30].

In relation to the participant in this study with little schooling who did not remember what she had been instructed to do, it was previously reported that in the context of providing guidance on PF exercises to

Domains	Participants' Reports	n
Did not perceive any change	Did not perceive any changes	9
Knowledge	Increased knowledge	13
	Learned that the exercises are useful to prevent dysfunction and not only for sexual performance	2
Self-awareness	Managed to perceive changes in herself: before pregnancy the PF musculature was better	1
	Began to pay more attention to her body	1
Sex life	Improved her relationship with her husband because she began to talk about her sexual problems	1
	Helped to reduce discomfort during sexual intercourse	1
Motivation to practice physical exercise	Recommenced walking because she thought that the dysfunction could worsen	1
Motivation to practice physical exercise and PF exercises	Carried out the PF exercises and has returned to working out at the gym	1
Motivation to practice PF exercises	Increased self-confidence in relation to her husband and felt more confident doing the PF exercises	1
	Performs the exercises and reduced urinary losses	5
Motivation to change micturitional behaviour	Learned to fill the bladder before going to the toilet, now manages to empty it completely and reduced the urinary frequency	2

Table 4: Perceptions of the women concerning changes that occurred after participating in the program.

women of Latin origin who lived in the USA there was less guidance for women with less schooling (OR=.39; p=0.02) [26]. Of the women who did receive guidance, 57% performed the exercises, with the main reasons for not doing so being a belief that the exercises would not help or a failure to understand the instructions [14]. For this reason, some thought should be given to strategies that are more didactic and relevant to the situation of these women, which would make the guidance more efficient.

Preventive actions such as the one described here constitute a way of facilitating access to healthcare among the population with the lowest financial means. However, they must be evaluated before they can be incorporated into public health policies. This study showed that teaching pelvic floor muscle exercises to general women who underwent the routine examination for cervical cancer prevention had a good acceptance of them. This is an important finding considering this recommended intervention includes vaginal digital palpation and could be a little bit embarrassing to some women.

One limitation of the study was the evaluation of adherence and acceptance using an open-response questionnaire that had not been previously validated. Also, it is possible that in the telephone interview some women may have reported improvements on the basis of their social desirability. Furthermore, the emphasis in the intervention was on teaching the correct form of contraction of the musculature of the pelvic floor, with little emphasis on the necessary frequency and intensity in carrying out the domiciliary preventive exercises. It is possible that if these parameters had received more attention, the results would be more marked.

In conclusion, this study showed good short-term adherence, while the participants' reports demonstrated a positive result on numerous aspects: knowledge, sex life, encouragement to practice physical exercise and PF exercises and an improvement in symptoms of urinary loss. The fact that questions such as age, schooling, level of physical activity, BMI and symptomatology apparently did not affect adherence to the PF exercises lends support to the continuation of the program and to the development of future studies to examine motivational aspects in the patients which might lead to greater adherence.

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