Bulletin of the *Transilvania* University of Braşov
Series IX: Sciences of Human Kinetics • Vol. 13(62) No. 1 – 2020
https://doi.org/10.31926/but.shk.2020.13.62.1.26

THE ROLE PLAYED BY SPECIFIC PHYSICAL THERAPY MEANS IN TREATING GENITAL PROLAPSE DURING MENOPAUSE

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Abstract: *After the age of 45, one woman out of two is affected by genital prolapse. The prolapse manifests as a sensation of weight in the lower side of the abdomen, sometimes accompanied by urinary disorders.*
Purpose. This study aimed to correct the genital prolapse in menopausal women, associated with urinary incontinence.
Results. At the end of the research, the authors believe that physical therapy can be applied with remarkable results to women in special situations.
Conclusions. The physical therapy intervention for genital prolapse during menopause can delay the surgery and at the same time it can diminish the symptoms of prolapse and urinary incontinence.

Key words: *physical therapy, genital prolapse, menopause*

1. Introduction

The menopause is a natural physiological phenomenon where the woman consumes her ovarian hormone reserve, this period being characterized mainly by the lack of menstrual cycle for 12 consecutive months. It appears usually between the age of 40 and 55, and it can be natural or artificial (after surgery) [11].

After the age of 45, one woman out of two is affected by genital prolapse. The prolapse manifests as a sensation of weight in the lower side of the abdomen, sometimes accompanied by urinary disorders [10].

Because of its specificity and intimate character, the frequency of prolapse in Romania is unknown, but it is believed that in women, the risk of a prolapse surgery or of urinary incontinence due to effort is of 10-18% [9].

The last epidemiological study published by the European Association of Urology (EAU) states that urinary incontinence is found in 5-69%, which highlights the silence of the people with urinary disorders and shows the need for a prevention and treatment development policy [6].

Studies conducted in various countries have shown the variable character of this

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disease; Samuelson has presented some data that estimates the frequency of prolapse in women, on age groups: 6% - women between 20-29 years old; 20% - women between 30-39 years old; 45% - women between 40-49 years old; 55% - women between 50-59 years old. (Jorf n 0258, 2008)

The 2009 European Association of Urology (EAU) study reveals that one in four women that go to their doctors suffer from urinary disorders, defined by at least one urinary leak per month.

The number grows with age (> 50 years old); Body Mass Index (BMI) (> 25 kg / m2); parity (> 2 children), highlighting the main risk factors [6].

Urinary incontinence disorders are more frequent in older women; the prolapse is associated with the urinary incontinence, with the perineal reeducation being currently the primary treatment.

In the beginning, this being an intimate matter, the women are embarrassed and hide their prolapse, thus becoming a taboo subject; however, the disorder can be hard to bear because of the physical discomfort it causes, affecting all the areas of a women's life. Even if the existence of the prolapse does not involve a life-threatening situation, the symptoms can influence the physical, mental, and social state of the women involved.

The European Association of Urology, in the summary of its 4th International Congress regarding incontinence, of 2008, states that the Kegel exercises of strengthening the pelvic floor represent the first line of treatment for women suffering from effort incontinence, urge incontinence, or mixed incontinence. Perineal reeducation is the most prescribed treatment before medication and surgery.

Numerous studies have shown that the application of a program to strengthen the pelvic floor is significantly more effective that a lack of any program in the case of effort incontinence and mixed incontinence.

The results show that reeducation is more effective in the case of effort incontinence than in the case of urge incontinence.

In regard to the cost-effectiveness analysis, the recommended management strategy is the perineal reeducation combined with the behavioral treatment, then surgery, if it's still needed.

2. Objectives

This research tries to identify the professional practices used in the perineal reeducation, aiming to correct the genital prolapse associated with urinary incontinence, in women at menopause.

In order to verify the hypothesis stating that through a physical therapy intervention in women at menopause one can contribute to the diminishing of the symptoms, to the prevention or slowing down of the type I or II genital prolapse, a series of objectives and tasks were established: the study of the literature and gathering of specialized information to establish the currency of the research; the selection of the group of subjects; the organization of the reeducation process based on the intervention protocols; conducting the physical therapy sessions aiming to make the intervention more effective; recording the parameters aiming to highlight the subjects' progress; disperse the research results, aiming to making people aware of the therapeutic effects; popularizing the research results,

aiming to make people aware of the prophylactic physical therapy effects.

3. Materials and Methods

The research was conducted between July 2018 – May 2019, while the actual intervention was conducted over a period of 5 months (December 2018 – May 2019), at the perineal rehabilitation section of the Decazeville Public Hospital, in France, on a group of 3 subjects, aged between 56 and 75.

The *research methods* were: literature research, inquiry method - used to know the subjects and their medical history, their pathology's progress, if they feel any pain or discomfort. In this sense, several factors were identified: general information (age, profession and activity, family medical history), medical information (Body Mass Index, diabetes, nocturnal enuresis, smoking, chronic bronchitis, alcohol consumption, medical treatments) [8], [7], [5], urogenital information (lower urinary tract symptoms, menopause, constipation), surgical information, obstetrics information [2], observation method, measurement and assessment method, experimental method, statistical-mathematical method, and the graphical representation method [1].

The measurement makes possible the characterization of values in quantifiable terms, allowing the assessment, summarization, and analysis of the recorded data sets, to interpret and compare them. They were used to get relevant data regarding the state of the subjects, aiming to establish the degree of injury, or the progress over the course and at the end of the intervention program.

For a more correct assessment, the clinical examination was observed, also the local examination, neurological examination, muscle examination, all comprised in an assessment chart for the perineal reeducation. Because the perineal reeducation national protocol specifies that it can be conducted only by acknowledged experts in the field, mainly those holding the Perineal Reeducation Inter-university Diploma, this study consisted only in assisting and observing, filling out risk factor charts, patient assessment and observation charts, behavioral recommendations, and recommendations for a correct application of the pelvic floor strengthening program, in order to meet the set goals and to prevent other disorders.

4. Contents of the intervention

The intervention plan comprised several criteria, such as the ***behavioral attitude***, through the *education of the patient and advices for a healthy lifestyle* (the examiner explains the causes and mechanisms of incontinence, the importance of managing the micturition frequency, recording the habit of drinking water, caring for their body weight and a toxic environment); *the micturition calendar*, which aims to monitor and increase the duration of time between micturitions; *pelvic floor strengthening home drills* (individual instruction by a trained therapist, muscle contraction drills combined with biofeedback, regular observation once per week or once every two weeks); ***the supervised muscle work***, based on the patients learning to pre-contract voluntarily their pelvic floors before and during the abdominal pressure

in order to prevent the leaks, an automatism that is often lost, and the improvement of the structural support through training. Muscle work can increase muscle volume, it can close the urogenital cleft, it can shorten the muscle, and it can lift the resting position of the urinary bladder and of the rectum. The reeducation time varies from 6 weeks to 6 months, the waiting time from 3 seconds to 40 seconds, and the number of repetitions varies from 36 to 200 contractions per day.

The American College of Sports Medicine recommends protocol models based on the set goals, according to the following table 1.

Recommendations for the progressive strengthening of muscles in adults Table 1

	Strength improvement	Endurance improvement
Repetitions	8-12 maximal contractions at a moderate speed	>15 submaximal contractions (40 -60% of the maximum load)
Series	1-3	1-3
Break between repetitions	1 - 2 minutes	< 90 seconds
Weekly frequency	2-3 times/week up to 4-5 times/week	2-3 times/week up to 4-5 times/week
Work increase	2-10% increase the load when the patient can perform one or two repetitions out of the requested number	

The manual technique - the physical therapist, through the vaginal smear of the pubic-coccis fascia, controls the correct performance of the muscle contraction and gives verbal feedback to the patient. The vaginal smear allows a better awareness of the contraction and allows one to better locate it. The therapist requests the contraction in various ways: through verbal or sensitive stimuli (when the therapist presses the pubic-coccis fascia, the patient contracts the muscles and relaxes them when the pressure is released); requesting static, concentric or eccentric contractions; stretching the central fiber center and tensing the elevator muscles; resisting unilateral or bilateral work, according to the muscles;

Biofeedback/Electrostimulation - *assessment of the reeducation* throughout and at the end, the progress of the symptoms is assessed using the same methods as during the initial assessment. An increase in muscle strength measured through manual or instrumental tests does not make it possible to deduce the improvement or cure of the symptoms. Studies have shown increases in the strength of anal elevator muscles without the patients saying they feel it, therefore one always needs to check the progress of clinical symptoms and their impact on the patient's quality of life.

At the end of the program, it is recommended for the therapists to organize another intensive reeducation session after a certain period of time in order to control the patient's progress during her self-reeducation, which must continue.

The rehabilitation program is divided in sessions according to the set goals, to the body's reaction, and it can be changed from one session to the next, according to the patient's state and her progress, conform table 2.

In the beginning, in agreement with the patients, a program of 10 sessions was established, with one 30-minute session per week. The first session was longer because of the questioning and the presentation of the means.

Perineal reeducation program Table 2

OBJECTIVES	MEANS	INTERVENTION METHOD/RECOMMENDATIONS
SESSION ONE		
Knowing the patient	Questioning	The questionnaire regarding the risk factors was filled.
Educating the patient for a healthy lifestyle	Verbal recommendations, advices, talks, counseling	The anatomy of the pelvis was explained using the anatomy board; The importance of managing the liquid intake was explained; The elimination of stimulants and irritants was recommended; Advice was given for fighting constipation; Recommendations were made for weight loss; Quitting smoking was encouraged.
Voluntary contraction before effort	The KNACK Method	The patient was taught to contract her pelvic floor muscles and maintain them contracted before an abdominal pressure (e.g. cough, laugh, sneeze, etc.).
Making the patient aware of her perineal muscles and contractions	The STOP - PEE Method	The patient was instructed in regard to this technique, which consists in stopping voluntarily one's own urine stream when the urinary bladder is not yet empty.
Increasing the time between 2 micturitions	Filling out the micturition calendar	The filling out method was explained, and the patients have filled out at home their micturition calendars for 24 hours.
Strengthening the pelvic floor at home	Daily program of self-reeducation drills	The types of pelvic floor contraction drills were demonstrated and were recommended to be performed at home; Approximately 100 daily contractions were recommended to be performed, divided into multiple series, as shown in table 1.
	Vaginal cones	Vaginal cones were presented and their use was explained, in order for the patients to be aware of the contractions. This method was recommended to be performed for 15 minutes twice a day.
SESSION TWO		
Initial assessment	Local examination	The patient was positioned in a gynecological position, with her legs flexed and spread apart The following were observed: if there is any pain when the area is palpated; if there is any scar due to tearing or episiotomy; if there is any dryness or vaginal leaks; if there is a vulvar slit; the anal-vulvar distance (normal between 2.5 to 3 cm); if there is a prolapse (urethrocele, cystoceles, rectocele, uterine prolapse).
	Neurological examination	The physical therapist checked the sensitivity of the vulvar area and the reflexes of the anal sphincter.

OBJECTIVES	MEANS	INTERVENTION METHOD/RECOMMENDATIONS
	Vaginal smear	The physical therapist performed the vaginal smear on every fascia of the pelvic floor and asked the patient to contract her muscles at a verbal cue; The muscle testing was conducted, recording the values.
The motor response was stimulated and the patient was made aware of her perineum during contractions	Electrostimul-ation	The patient lied on her back with her knees bended, her legs spread apart, her chest slightly lifted; The electrodes were positioned in such a way so that the patient would feel the electricity without any pain; The intensity was increased gradually, up to the tolerance threshold.
Contraction Awareness and Pelvic Floor Muscle Strengthening	Biofeedback	The hygiene rules were observed, the patients came with their own instrument, chosen and bought according to their own anatomy; The procedure was done using the Neurotrac Simplex R software; Series of 5 seconds contraction were performed, alternated with 10 seconds of relaxation, supine position then standing position.
Strengthening the pelvic floor at home	Daily program of self-reed.	The program was adapted to the patients' state of fatigue.
Respecting the rehabilitation program	Counseling	A trusting bond was created between patients and physical therapist.
SESSION 3 - SESSION 9		
Contraction Awareness	Biofeedback	The hygiene rules were observed, the patients came with their own instrument, chosen and bought according to their own anatomy; The procedure was done using the Neurotrac Simplex R software; Series of 5 seconds contraction were performed, alternated with 10 seconds of relaxation, supine position then standing position.
Strengthening the pelvic floor at the therapist's office	Manual reeducation technique	The patient in a gynecological position; A vaginal smear was performed, and at a verbal cue, the patient must contract her perineum; The therapist put her free hand on the patient's belly to check if the patient doesn't contract also her abdominal muscles; In the same position, the patient's basic strength, endurance, and coordination were worked on.
Strengthening the pelvic floor at home	Daily program of self-reeducation	Strength, endurance, and coordination home drills.
SESSION 10		
Strengthening the pelvic floor at the therapist's office	Biofeedback	The hygiene rules were observed, the patients came with their own instrument, chosen and bought according to their own anatomy; The procedure was done using the Neurotrac Simplex R software; Series of 5 seconds contraction were performed, alternated with 10 seconds of relaxation, supine position then standing position.
Final assessment	Vaginal smear	The same criteria and assessment methods were used as for the initial assessment.
Maintain the results	Counseling, Recommendat	A full assessment of the entire program was made; The patients were asked how they feel after the reeducation

OBJECTIVES	MEANS	INTERVENTION METHOD/RECOMMENDATIONS
	ions	program; Recommendations were made to keep this lifestyle and continue the drills at home**;** The patients were recommended to come back after 6 months to a reeducation session at the therapist's office to check the parameters.

5. Results and Discussions

At the end of the perineal reeducation program, conducted according to a scheme that was adapted to each subject, and recorded in assessment and observation charts, an improvement was observed in regard to the genital prolapse, as shown in figure 1.

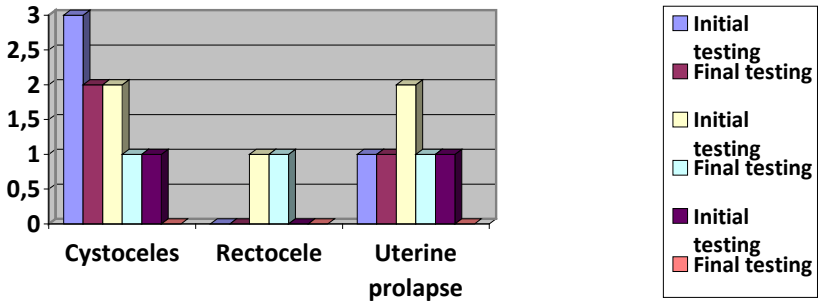

Fig. 1. *Graphical representation of the results*

Based on the initial and final assessments, the results were as follows:

The **muscle testing** values have increased in the three female subjects according to each one's motivation, the **number of micturitions** and the **genital prolapse** have reduced after going through the perineal reeducation program.

Subject G.M, aged 75, has recorded an increase in strength even though she lacked motivation to continue the program at home. After the perineal reeducation, the number of micturitions in her case was reduced to approximately 2/day, and the genital prolapse by one degree.

Subject M.S, aged 63, has recorded a slight increase in her pelvic floor muscle strength, she reduced her micturitions (especially the nocturnal ones) and her cystoceles and uterine prolapse from type II to type I.

Subject P.A, aged 56, was very motivated, completing the entire reeducation program at the therapist's office and at home, and she recorded the best results. Due to the fact that initially she had a low type prolapse, by strengthening her pelvic floor and following the reeducation program, she practically cured her prolapse.

6. Conclusions

The results recorded during the reeducation programs for the three subjects lead to the conclusion that the research hypotheses were validated. Thus, the physical therapy intervention for genital prolapse during menopause can delay the surgery and at the same time it can diminish the symptoms of prolapse and urinary incontinence.

The physical therapist's examination highlights the risk factors, the predisposing factors, the dysfunction and their impact, allowing a corresponding reeducation. This is based on pelvic floor drills and behavioral changes in the patients, to which various techniques are added, such as the biofeedback, the electrostimulation, the vaginal cones, the manual techniques, of which, however, only a few have proven to be effective.

It is the physical therapist's responsibility to choose the most effective techniques, adapted to the patient's needs. It is important to remember that the pelvic floor strengthening programs, with or without biofeedback, are most effective in type I and II prolapse. They are most effective when are more intensely followed and supervised by the therapist, their implementation contributing to meet the desired goals. The micturition calendar makes the patient aware of the regularization of the micturitions and helps diminish their number.

Acknowledgments

The authors thank the management and staff of the perineal rehabilitation section of the Decazeville Public Hospital, in France, and their patients, for supporting this research.

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