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PILOT STUDY

Effectiveness of a program of therapeutic exercises on the quality of life and lumbar disability in women with Stress Urinary Incontinence

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Summary Stress Urinary Incontinence (SUI) is a common condition and can cause social isolation and decreased quality of life. The literature demonstrates that perineal exercises are effective in promoting urinary continence and lumbar stability. This uncontrolled (group) pilot study, using a pre-test-post-test design, investigated whether a weekly session of Holistic Gymnastics® conducted during a one-year period, could change outcomes in a group of twenty women diagnosed with SUI. In the first and last evaluation, the subjects underwent a clinical examination and were asked to complete two questionnaires, one regarding quality of life and the other about lumbar disability. Improvement in the quality of life was observed in nine out of ten domains. There was also an improvement in lumbar disability. These results suggest that a program with therapeutic exercises can be effective in controlling urinary incontinence and improve the quality of life and lumbar disability in woman with SUI.

Introduction

Urinary Incontinence (UI) affects women of various ages worldwide. Its true prevalence is unknown and changes depending on age and ethnic groups as well as social and economic factors that interfere with the appearance of symptoms (MacDiarmid and Rosenberg, 2005; Nitti, 2001).

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The prevalence of UI can increase when it is evaluated as the involuntary leakage of urine and the presence of discomfort related to it (Nitti, 2001). This condition can cause social and hygiene problems that are easily noticeable (Abrams et al., 2002). Difficulty during sexual intercourse, such as the fear of urine loss or the need to interrupt sexual intercourse to urinate, and sleep disorders can also appear (Coyne et al., 2003). Stress Urinary Incontinence (SUI) consists of urine loss that occurs during any situation of physical effort, such as coughing or sneezing (Haylen et al., 2010).

There are several risk factors that may contribute to SUI, including pregnancy, vaginal childbirth, ageing, illnesses that involve chronic increase of abdominal pressure, menopause, hypooestrogenism, trauma, genetic factors, use of tobacco, and previous surgeries (MacDiarmid and Rosenberg, 2005; Schaffer et al., 2005). SUI predominantly occurs in women who have experienced vaginal childbirth, especially those who are multiparous, owing to the functional loss of pelvic organ support (Thompson et al., 2002).

Pelvic floor muscle (PFM) training provides positive effects in the treatment of UI, including a reduction in the frequency of urine leakage and improvement in muscular function with vigorous and resistant contractions in both static and dynamic forms (Tibaek et al., 2005). Improvement in muscular function contributes toward urethral resistance and visceral support and potentiates voluntary muscular contraction (Nitti, 2001); it also prevents the descent of the bladder and controls the urethral angle, thereby encouraging urethral closure during increases in intra-abdominal pressure (Morales et al., 1997). Besides the direct benefits on the pelvic organs, perineal contractions activate muscles that stabilize the vertebral column, such as the psoas, multifidus, and the transverse abdominal muscles (Richardson et al., 1999).

Holistic gymnastics is a method of therapeutic exercise in which the proposed movements take into consideration the peculiarities related to anatomical, physiological, sensorial, and motor characteristics by stimulating the best coordination of body attitude. This approach is based on respecting the rhythm and limitations of each patient. Movements are described orally and consequently, without a model for imitation, the patients try to achieve a gradual change of body engrams (Mendonça, 2000).

The method was developed in the 1940's by Lily Ehenfried, a German doctor and physiotherapist (Mendonça, 2000). The proposed movements reflect current thinking, considering the development of new imaging techniques to explain some empirical theories from the past.

Example

One example of some of the 800 movements described is a movement called: PPTL (pieds, periné, transversus du abdomem et langue). The therapist asks the patient to gently press their feet onto the floor while contracting their perineal region during exhalation. At the same time they are encouraged to perceive the synergical simultaneous contraction of their tranversus abdominis and to press their palate, with their tongue. Many studies corroborate the benefit of integrating the core stabilizers of low back with sensory feedback (Hodges and Richardson, 1999; Hodges et al., 2001a,b). The global character of the method and the correlation of respiratory and perineal diaphragms allows the evaluation of lumbar function to be included as an option.

The purpose of the study was to evaluate the effects of a specific program of therapeutic exercises on the quality of life and lumbar disability in women with SUI. This uncontrolled (group) pilot study, using a pre-test-post-test design contains only a single group. The study's hypotheses state that the intervention program will improve continence and quality of life, and reduce lumbar disability in woman with SUI.

Methods

A pre-test-post-test study was conducted on a convenient sample of 20 female patients, aged between 35 and 65, who were selected from the physiotherapy department of the Gaffrée and Guinle University Hospital (GGUH). Women who complained of SUI and agreed to the terms were included in the study. The exclusion criteria were associated neurological diseases, oncologic diseases, infections, pregnancy, serious cognitive changes, and the non-fulfilment of a gynaecological examination for more than a year. The research project obtained the approval (number 50/2011) of the committee of ethics and research of the GGUH.

Each patient was individually evaluated using specific anamnesis forms elaborated by the authors of the project. The King's Health Questionnaire (KHQ), used for women with UI and the Oswestry Disability Index (ODI) questionnaire for lumbar disability, both of which are self-applicable, were translated into Portuguese and validated for use. Evaluation of perineal muscle by bidigital palpation was done during a physical examination. In spite of the lack of evidence for clinical use, the muscle test is of low cost and is comparable between examiners (Knorst et al., 2011). The presence or absence of synergistic contraction of the transverse abdominal muscle was noted.

The KHQ is considered the best instrument for the evaluation of quality of life, specifically in a population with urinary incontinence. The evaluation is divided into eight domains that are related to general health perceptions, the impact of UI, role limitations, physical and social limitations, personal relationships, emotions and sleep/energy disturbances, respectively. Two independent scales are also included: one to evaluate severity measures and the other to evaluate the presence and intensity of symptoms (scale of urinary symptoms). Numerical values added and evaluated by the domains are attributed to all of the answers. The values vary between zero and one hundred, with increasing values indicating a worsening of quality of life. There is no numerical reference to indicate a final value for the qualification of incontinence severity, but a comparison can be done to each of the domains. The KHQ was translated and validated in Portuguese (Tamanini et al., 2003; Fonseca et al., 2005).

There are ten questions related to lumbar disability in the ODI questionnaire. The first part is about pain intensity,