



REVIEW ARTICLE

Effectiveness of pelvic floor muscle training in treating urinary incontinence in women: A current review[☆]



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KEYWORDS

Dysfunction;
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Female population

Abstract

Objective: To analyze the content of various published studies related to physical exercise and its effects on urinary incontinence and to determine the effectiveness of pelvic floor training programs.

Method: We conducted a search in the databases of PubMed, CINAHL, the Cochrane Plus Library, The Cochrane Library, WOS and SPORTDiscus and a manual search in the Google Scholar metasearcher using the search descriptors for documents published in the last 10 years in Spanish or English. The documents needed to have an abstract or complete text on the treatment of urinary incontinence in female athletes and in women in general.

Results: We selected three full-text articles on treating urinary incontinence in female athletes and six full-text articles and one abstract on treating urinary incontinence in women in general. The nine studies included in the review achieved positive results, i.e., there was improvement in the disease in all of the studies.

Conclusions: Physical exercise, specifically pelvic floor muscle training programs, has positive effects on urinary incontinence. This type of training has been shown to be an effective program for treating urinary incontinence, especially stress urinary incontinence.

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PALABRAS CLAVE

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Población femenina

Efectividad del entrenamiento de la musculatura del suelo pélvico en el tratamiento de la incontinencia urinaria en la mujer: una revisión actual

Resumen

Objetivo: Analizar el contenido de los diferentes estudios publicados relacionados con el ejercicio físico y sus efectos sobre la incontinencia urinaria, así como determinar la efectividad de los programas de entrenamiento de suelo pélvico.

Método: Se realizó búsqueda en las bases de datos de Pubmed, CINAHL, Biblioteca Cochrane Plus y The Cochrane Library, WOS, SPORTDiscus y una búsqueda manual en el metabuscador Google Scholar de acuerdo a los descriptores de búsqueda de documentos publicados en los últimos 10 años en español o en inglés, con resumen o a texto completo, tanto del tratamiento de la incontinencia urinaria en la mujer deportista como en la mujer en general.

Resultados: Se seleccionan 3 artículos a texto completo sobre el tratamiento de la incontinencia urinaria en la mujer deportista, y 6 artículos a texto completo y un resumen sobre el tratamiento de la incontinencia urinaria en la mujer en general. Los 9 estudios incluidos en la revisión obtuvieron resultados positivos, es decir, en todos ellos hubo una mejora de la enfermedad.

Conclusiones: El ejercicio físico, concretamente los programas de entrenamiento de la musculatura del suelo pélvico, tienen efectos positivos sobre la incontinencia urinaria. Este tipo de entrenamiento se muestra como un programa efectivo para el tratamiento de la incontinencia urinaria, especialmente la incontinencia urinaria de esfuerzo.

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Introduction

The International Continence Society defined in 2002 urinary incontinence¹ (UI) as the manifestation of any involuntary loss of urine by the patient. There are different types of UI: stress urinary incontinence (SUI) as involuntary loss of urine when exerting pressure on the pelvic floor, doing physical exercise, coughing or sneezing; urge urinary incontinence (UII) as the involuntary loss of urine accompanied by or immediately preceded by urgency; and mixed urinary incontinence (MUI) as involuntary loss of urine associated with urgency and also an effort, exercise, sneezing and coughing.^{1,2}

This disease mainly affects women not only in adulthood, but is present in all ages. It is true that prevalence of this disease increases with age. There are many studies that disclose that prevalence in the female population. Without going any further, in the systematic review by Rebollo et al.³ on the UI in a Spanish female population, they obtained prevalence data between 20% and 50% according to age. In this line, Hunskaar et al.⁴ determined the prevalence of UI in women in four European countries, namely, France, Spain, Germany and the UK. In that study they included women aged 18 and older. 35% of UI prevalence was obtained globally. Spain was the country with the lowest prevalence, with 23%, followed by Germany with 41%, UK with 42%, and France with 44%. Another study was conducted in 2008 on the prevalence of pelvic floor dysfunction (PFD) in American women. The study showed that 7% of nulliparous women suffered UI aged between 20 and 39 years, 17% between the ages of 40–59, 23% between 60 and 79 years and 32% in women of more than 80 years.⁵

Activities and high-impact sports are associated with a high prevalence of developing UI, both nulliparous women and pregnant women and in the postpartum period.⁶ Thus, it

is important to differentiate women doing physical activity and impact sports from those who do not. The results showed that of 679 women 14.9% reported UI. On that percentage only 31.7% reported UI while performing sports activities, 47.5% only during their daily life and 20.8% in both circumstances. UI and sports activities were also reported, finding a higher rate of UI in women who practiced basketball (16.6%), followed by athletics (15%), and finally a lower rate in sports like tennis or squash (11%).⁷ Of all the sports activities that favor the development of UI, jumping is probably the activity that most episodes of urine loss causes in women. These urine losses have a higher prevalence during training (95.2%) than during competition (51.2%). This is very likely to occur during the competition due to the increase of catecholamine that favors the closure of the urethra.⁸ In this regard, it is noted that the degree of prevalence of UI changes depending on whether the female is an athlete or not.

Sanz et al.⁹ and Friedman¹⁰ distinguish between conservative treatment and surgical treatment.^{9,10} Among conservative treatments, *biofeedback* physical therapy,⁹ vaginal cones, electrostimulation,^{9–11} incontinence pessary¹² and behavioral therapy used primarily for UII and MUI urgency components stand out.⁹ Along with these conservative treatments, we must add the change of lifestyle. The main objective of those treatments is, on the one hand, to facilitate urination. On the other hand, they prevent from certain aspects such as weight gain, tight-fitting clothing, consumption of stimulant beverages, exercises that produce an increase in intra-abdominal pressure, constipation, and chronic cough.^{11–13} And finally, within conservative treatments, the strengthening of muscles of the PFD (PFM) performing PFD strengthening exercises should be added. Such treatment involves making an intense contraction of the pubococcygeus muscle without using the muscles of the abdomen or buttocks.¹¹ A recently emerged treatment

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