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URINARY INCONTINENCE IN YOUNG AND NULLIPAROUS WOMEN: ASSOCIATED FACTORS AND PREVALENCE

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ABSTRACT

Objective: To verify the prevalence and risk factors associated with urinary incontinence in nulliparous young women. **Methods:** Integrative literature review, performed by searching the following databases: Medical Literature Analysis and Retrieval System Online (MEDLINE), Latin American and Caribbean Literature in Health Sciences (LILACS), Spanish Bibliographic Index in Health Sciences (IBECS) and in the Nursing Database (BDENF), from March to June 2021, using the descriptors: "urinary incontinence", "prevalence", "women", "students" and "young adult" combined with the Boolean operator "AND". **Results:** The initial search resulted in 234 articles and, after applying the eligibility criteria, a final sample of 5 articles was obtained. After the analyses, a prevalence of urinary incontinence in young nulliparous women of 48% was evidenced. Risk factors were: high-impact physical activity, duration of physical activity, concomitant bowel and urinary symptoms. **Conclusion:** It was observed that the occurrence of urinary incontinence in nulliparous young women is a common condition. The associated risk factors demonstrate the need for health guidance to these women to avoid the chronification of the disease.

DESCRIPTORS: Urinary incontinence. Prevalence. Students. Enterostomal therapy.

INCONTINÊNCIA URINÁRIA EM MULHERES JOVENS E NULÍPARAS: FATORES ASSOCIADOS E PREVALÊNCIA

RESUMO

Objetivo: Verificar a prevalência e os fatores de risco associados à incontinência urinária em mulheres jovens nulíparas. **Método:** Revisão integrativa da literatura, realizada através de busca nas bases de dados: *Medical Literature Analysis and Retrieval System Online* (MEDLINE), Literatura Latino-Americana e do Caribe em Ciências de Saúde (LILACS), Índice Bibliográfico Espanhol em Ciências da Saúde (IBECS) e na Base de Dados de Enfermagem (BDENF), no período de março a junho de 2021, utilizando os descritores: "incontinência urinária", "prevalência", "mulheres", "estudantes" e "adulto jovem" combinados através do operador booleano "AND". **Resultados:** A busca inicial resultou em 234 artigos e, após aplicação dos critérios de elegibilidade, obteve-se uma amostra final de 5 artigos. Após as análises, evidenciou-se prevalência de incontinência urinária em mulheres jovens nulíparas de 48%. Os fatores de risco foram: atividade física de alto impacto, duração da atividade física, sintomas intestinais e urinários concomitantes. **Conclusão:** Observou-se que a ocorrência de incontinência urinária em mulheres jovens nulíparas é uma condição comum, os fatores de risco associados demonstram a necessidade de orientação em saúde a essas mulheres para evitar a cronificação do agravo.

DESCRITORES: Incontinência urinária. Prevalência. Estudantes. Estomaterapia.

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INCONTINENCIA URINARIA EN MUJERES JÓVENES NULÍPARAS: FACTORES ASOCIADOS Y PREVALENCIA

RESUMEN

Objetivo: Verificar la prevalencia y los factores de riesgo asociados a incontinencia urinaria en mujeres jóvenes nulíparas. **Método:** Revisión integral de literatura realizada a través de búsqueda en las bases de datos: Medical Literature Analysis and Retrieval System Online (MEDILINE) Literatura Latinoamericana y del Caribe en Ciencias De Salud (LILACS), Índice bibliográfico español en ciencias de salud (IBECS) y en la Base de Datos de Enfermería (BDENF), en el periodo de marzo a junio del 2021 utilizando los descriptores "incontinencia urinaria", "prevalencia", "mujeres", "estudiantes" y "adulto joven" combinados a través del operador booleano "AND". **Resultados:** Después del análisis se evidenció una prevalencia de incontinencia urinaria en mujeres jóvenes nulíparas de 48%. Los factores de riesgo fueron: actividad física de alto impacto, duración de actividad física, síntomas intestinales y urinarios concomitantes. **Conclusión:** Se observó que la ocurrencia de incontinencia urinaria en mujeres jóvenes nulíparas es una condición común. Los factores de riesgo asociados demuestran la necesidad de orientación en salud a esas mujeres para evitar la cronificación de la gravedad.

DESCRIPTORES: Incontinencia urinaria. Prevalencia. Estudiantes. Estomaterapia.

INTRODUCTION

The involuntary loss of urine is a reality in the female population on the global stage. It is urinary incontinence (UI), a condition of multifactorial etiology, with an estimated prevalence of up to 39% among men and 6 to 25 times more in women, when compared to them[1]. This rate of involvement can be explained by the anatomy of the female urethra and by conditions common to its life cycle, which interfere with the proper performance of the pelvic floor[2]. Among the risk factors for the occurrence of UI, in general, are: age, pregnancy, parity, climacteric, use of medications, pelvic surgeries, body mass index, high-impact physical exercises, smoking, among others[3].

Urinary incontinence represents a real public health problem in several countries around the world, however the numbers related to its occurrence could be even more representative, if there was not an underreporting related to not seeking care, a common situation in view of cultural issues. that involve the growth and development of women, in addition to the lack of knowledge of treatment possibilities[4]. However, for the treatment to be effective, it is necessary that UI be diagnosed according to its subtypes: stress urinary incontinence (SUI), when there is leakage of urine during the performance of some physical activity, such as climbing stairs, coughing, sneezing or to laugh; urge urinary incontinence (UUI) which is related to loss of urine preceded by sudden urge to urinate, even without complete bladder filling; and mixed urinary incontinence (MUI) which, in turn, associates characteristics of both subtypes mentioned above[5].

Despite the belief that UI affects only elderly women, the condition is not part of physiological aging[6] and, even with a higher prevalence with advancing age, women of all age groups can experience involuntary urine loss, including nulliparous young women[7]. However, the literature has been scarce when it comes to studies carried out in this population. Recent research affirms that this is a condition of considerable prevalence and with no known risk factors [8–10]. Because it is a disease of multicausal etiology, UI has an influence not only on physical health and self-care, but also disadvantages aspects related to mental health and quality of life for women, mainly by limiting social and professional activities, generating stress, social isolation and depression[11].

The realization of this literature review on UI in young women, particularly nulliparous, is justified by the need to recognize the factors associated with the prevalence of this condition in that population, which can help in the proposal of measures that identify the symptoms in advance and treat them, avoiding complications and for the establishment of methods that increase the well-being and improve the quality of life of these women. In addition to disseminating knowledge among the academic community, collaborating with existing studies on this topic is still on the rise.

OBJECTIVE

To verify the prevalence and risk factors associated with UI in nulliparous young women.

METHOD

The elaboration of an integrative review consists of six steps: the elaboration of the theme and the guiding question, the establishment of inclusion and exclusion criteria of studies, the search in the literature, the analysis and categorization of the included studies, the results and discussion and, finally, the presentation of the review itself[12,13]. Therefore, this study intends to answer the question: what are the risk factors associated with the prevalence of UI in young nulliparous women?

The exclusion criteria used were: study type (reviews, annals and reviews), study population (pregnant, postpartum, menopause and elderly women) and approach to prevalence/associated factors in samples with mixed age groups. Inclusion criteria consisted of: full text, English, Portuguese and Spanish languages and publication time interval defined between 2016–2021, in order to obtain updated information that contributes to the study results.

The *Descritores em Ciências da Saúde* (DeCS)/Medical Subject Headings (MeSH) were used: "urinary incontinence", "prevalence", "women", "students", "young adult" and the alternative term "nulliparity", in addition to the combination between the terms that was given by the Boolean operator "AND".

The study was carried out from April to June 2021 and the bibliographic survey was carried out from the following databases: Medical Literature Analysis and Retrieval System Online (MEDLINE), *Literatura Latino-americana e do Caribe em Ciências de saúde* (LILACS), *Índice Bibliográfico Espanhol em Ciências da Saúde* (IBECS) and the *Base de Dados de Enfermagem* (BDENF).

Initially, the searches found 234 articles, which, after the steps of deleting duplicates, reading the title and abstract and reading in full, resulted in 5 articles analyzed, as evidenced by the flowchart based on the PRISMA methodology[14] observed in Fig. 1. All data processing took place through Microsoft Excel software, through which an instrument to characterize the articles was prepared, containing: year of publication, title, authors, country of origin and risk factors for UI.

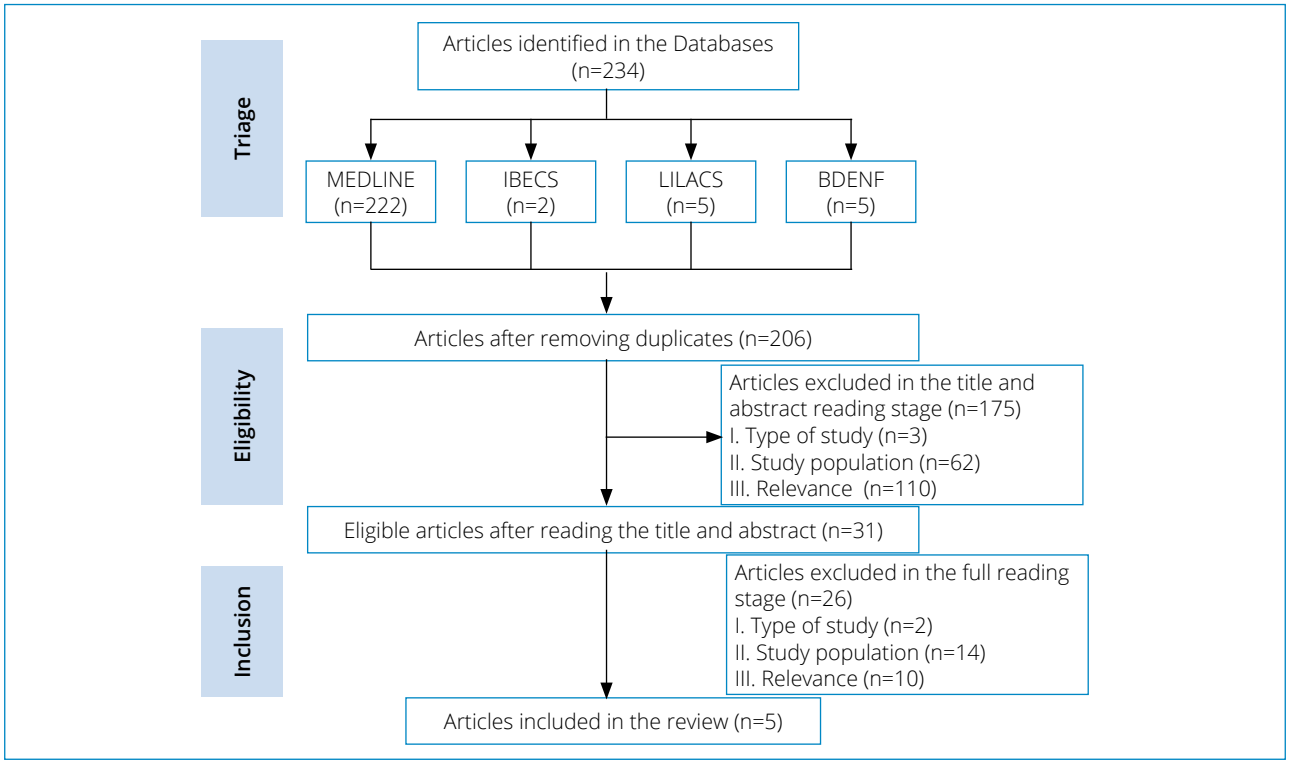

Figure 1. Flowchart of the study selection process. Recife, PE, Brasil, 2021.
Source: Prepared by the authors.

RESULTS

As can be seen in Fig. 1, the five articles resulting from the literature search came from the MEDLINE database and addressed UI in athletes[15–18] and in the general population[19].

Table 1 presents the results on year of publication, country of origin and instrument used. It is observed that in 2018 there were more productions on the subject (n: 2, 40%) compared to other years. Despite being published in international journals, most studies (80%) are Brazilian. Regarding the type of study, the highest frequency was of a cross-sectional design, carried out with young and nulliparous women, selected through different types of sampling, recruited personally through trained researchers[15,16], via email or phone[17–19].

As an exclusion criterion, the studies determined that the participants could not have a urinary tract infection, pelvic surgeries, not have undergone treatment for gynecological problems, have pelvic dysfunctions, urogynecological disorders or diseases. These are pre-established risk factors for UI.

It was observed in the articles studied that the method of filling in self-administered and anonymous questionnaires was used for data collection. The instruments consisted mostly of sociodemographic questions and clinical history, with the objective of determining the profile of the research participants; moreover, more frequently (n: 4), the studies used the International Consultation on Incontinence Questionnaire (ICIQ). Other instruments used were The Female Sexual Function Index (FSFI) and the King's Health Questionnaire (KHQ).

Table 1. Characterization of selected articles. Recife, PE, Brasil, 2021.

Authors	Year	Title	Country	Data collection instrument
Almeida M, Barra A, Salatiel F, Silva-Filho A, Fonseca A, Figueiredo E[15]	2016	Urinary incontinence and Other pelvic floor dysfunction in female athletes in Brazil: A cross-sectional study	Brazil	Demographic questionnaire; Health status; Pelvic floor symptoms; ICIQ-SF; ICIQ-VS.
Alves JO, Luz ST, Brandão S, Luz CM, Jorge RN, Roza T[16]	2017	Urinary incontinence in physically active young women: Prevalence and related factors	Brazil	Demographic questionnaire; Medical-Obstetric Questionnaire; Physical activity questionnaire; KHQ; ICIQ-SF.
Santos KM, Roza T, Silva L, Wolpe RE, Honório GJS, Luz SC[T17]	2018	Female sexual function and urinary incontinence in nulliparous athletes: An exploratory study	Brazil	Demographic questionnaire; ICIQ-UI-SFFSFI
Santos KM, Roza T, Luz SCT, Hort JP, Kruger JM, Schevchenco B[18]	2018	Quantification of urinary loss in nulliparous athletes during 1 hour of sports training.	Brazil	Demographic questionnaire; Filizola Scale; ICIQ-UI-SF
Kovalik CG, Daily A, Goodridge SD, Hartigan SM, Kaufman MR, Fowkem JH, Dmochowski RR, Reynolds WS[19]	2020	Factors associated with urinary incontinence in a community sample of young nulligravid women.	USA	Demographic questionnaire; Medical history; ICIQ-FLUTS

Source: Prepared by the authors.

The samples had different sizes, ranging from 50 to 964 respondents (mean: 163.0). The studies were carried out with young women, whose median age was 22.6 years. The factors associated with the occurrence of UI in that population were:

high-impact physical activity, duration of physical activity, associated intestinal and urinary symptoms. A prevalence of 48% of the studied population was observed (Table 2).

Table 2. Conclusions of the critical analysis of selected articles. Recife, PE, Brasil, 2021.

Quantification and Characterization of the Sample	Average Age (Years)	Associated Factors	Prevalence Of Urinary Incontinence (%)
n = 163 Young nulliparous women athletes and non-athletes	Athletes: 18 years old; Non-athletes: 21 years old.	Physical activity; Constipation; Force to evacuate; dyspareunia.	52.2%
n = 245 Students at the Health Sciences and Sports Center at the State University of SC.	High impact: 21.6 ± 3.5 years; Low impact: 22.0 ± 3.9 years.	High impact sports; Duration of physical activity.	22.9%
n = 50 Nulliparous athletes in the reproductive and sexually active phase and who compete at least at the municipal or state level.	24,2 ± 5,2 years	Hours of training per day; High impact activity; Duration of physical activity; Inability/ difficulty achieving sexual desire.	48.0%
n = 104 Nulliparous athletes who compete at the municipal or state level.	26 ± 6,3 years	High impact exercise; Duration of physical activity.	51.9%
n = 964 Nulliparous women, cisgender, between 18 and 25 years old.	22,6 years	Intestinal symptoms; Intermittent streams of urine; Delay in urination.	30.6%

Source: Prepared by the authors.

DISCUSSION

Urinary incontinence is a disease of multifactorial etiology, however, in the population of young nulliparous women, these factors are still not well established8. The articles analyzed found a considerable prevalence of the disease, in addition to determining potential associated factors.

Urinary incontinence in this population lacks broader studies, this is because the advent of UI is classically associated with aging and, with this, the occurrence in women aged between 18–30 years, healthy and particularly nulliparous, is underestimated for women whose risk factors are unclear[19]. Research on aspects involving UI in that population allows the identification of structural problems and lifestyle habits, contributing to the understanding of women affected by the problem and providing subsidies for health professionals to seek coping strategies[16].

It was observed that one of the main factors associated with the occurrence of UI is the performance of high-impact physical activities and the training volume, this is due to an increase in intra-abdominal pressure related mainly to jumps, causing muscle fatigue on the floor. pelvic[17]. High-impact physical activity practitioners are more likely to develop UI than low-impact physical activity practitioners[18]. This evidence is in agreement with a study carried out in 2017 with young nulliparous women, which states that the increase in intra-abdominal pressure compromises the adequate performance of the pelvic floor muscles, by generating an overload in the region, causing chronic weakness due to the repetition of the increase of this pressure[10]. Pelvic floor muscle fatigue is directly related to storage capacity and the filling and emptying phases of the bladder[3].

Thus, as mentioned in a recent study, high-impact training such as CrossFit, despite having beneficial effects on physical and mental health, can also be an independent risk factor, especially for SUI[20].

In agreement with the impact of physical activity performed, another factor presented by three of the five studies analyzed was the duration of physical activity, which, although it did not show a significant difference between the comparison groups, supports the hypothesis of the "continence threshold", related to the time, amount and impact of physical activity that the pelvic floor musculature can withstand, providing a plausible explanation for the occurrence of UI in young women who have no evidence of muscle damage[16–18,21].

Another evidence found in the studies was the relationship between intestinal and urinary symptoms, with emphasis on intestinal constipation, dyschesia and tenesmus, portraying that pelvic floor dysfunctions can occur concomitantly. The pathophysiology of intestinal symptoms is associated with UI, as evidenced among the associated factors in a study conducted in 2014, which observed that constipation can cause, among other things, bladder compression, urine retention, urinary tract infections and dysfunctions. in the adequate performance of the pelvic floor, which in the medium and long term may favor the occurrence of UI in women[22].

Urinary tract infections also mentioned in the analyzed studies relating urinary and intestinal symptoms are one of the important factors associated with the incidence of UI as also evidenced in another study[3], which states that these infections can be recurrent mainly in the female population and one of the causes attributed to this is the proximity of the urethra and anus, in addition to the short length of the female urethra. This can be the cause of transient UI, which has its symptoms reduced or ceased with the correct treatment for the infection.

Urinary tract infections in young women are associated with genetic and behavioral factors such as the frequency of sexual intercourse and the type of contraceptive method used[23], while in postmenopausal women such dysfunctions are mainly associated with the reduction of estrogen production, which, in turn, acts in the urinary tract in urethral coaptation, one of the main factors associated with continence[24]. Its physiological reduction interferes with the development of UI causing changes in bladder performance, which causes UI due to reduced urethral closing pressure[25].

In addition, it is necessary to recognize, as the analyzed studies point out, the impairment of the quality of life of young nulliparous incontinent women. UI in these women, in addition to altering or interrupting their level of physical performance and consequently negatively interfering with self-esteem, causes feelings of fear and shame and anxiety behaviors, fear of urine leakage and concern about bad odors, it also compromises their relationship with oneself and with others, whether in the home or work environment[8].

As limitations of this study, the scarcity of publications on UI in the population of young nulliparous women in the given period of time (2016–2021) stands out, which may have restricted the risk factors associated with UI in this age group.

CONCLUSION

In view of the above, it is observed that, despite the variability of sample sizes in the analyzed articles, there is a prevalence of UI in more than a quarter of young nulliparous women in most studies; therefore, it is admitted that this is a common problem in this population. The occurrence of UI in this context is associated with heterogeneous factors, including the performance of high-impact physical activities and the duration of training, concomitant intestinal and urinary symptoms, with emphasis on intestinal constipation and urinary tract infections, which contributes to the prevalence of UI in considerable percentages.

Thus, women who practice high-impact physical activities or who perform long-term physical training should be advised about the symptoms associated with pelvic floor dysfunction, since these factors seem to predispose to urine leakage. In this case, strengthening the pelvic floor through targeted exercises may be an alternative for reducing/cessating this loss. In addition, urotherapy can be combined with the prevention of UI, through behavioral changes such as the establishment of urination frequency and improvement of eating habits, aiming at bowel emptying at an adequate frequency.

However, it was evident from the number of articles found in this study that research on the disease is still incipient and lacks stimulus for its investigation, especially with regard to the population of nulliparous young women, without risk factors and interpreted socially and clinically as healthy, which may contribute to the chronicity of this condition.

AUTHORS' CONTRIBUTION

Conceptualization: Ferreira EEL and Santos ICRV; **Methodology:** Ferreira EEL and Santos ICRV; **Research:** Ferreira EEL and Santos ICRV; **Writing – First version:** Ferreira EEL, Santos ICRV, Silva Filho JC; **Writing – Reviewing and Editing:** Ferreira EEL, Santos ICRV, Valença MP; **Supervision:** Santos ICRV, Valença MP.

DATA STATEMENT AVAILABILITY

All datasets were generated or analyzed in the current study.

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