

## The repercussions of urinary incontinence in the quality of life in pregnant: a systematic review

### As repercussões da incontinência urinária na qualidade de vida em gestantes: uma revisão sistemática

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**RESUMO | INTRODUÇÃO:** As disfunções do assoalho pélvico (AP) durante a gestação por danos estruturais e funcionais podem provocar o desencadeamento de incontinência urinária (IU). Um grande incômodo para quem sofre desse problema devido à presença de sintomas miccionais, podendo interferir negativamente no bem-estar durante o período gestacional. **OBJETIVO:** Analisar as repercussões da incontinência urinária na qualidade de vida durante o período gestacional. **MATERIAIS E MÉTODOS:** O estudo compreende uma revisão sistemática, feito o levantamento da literatura através da biblioteca virtual em saúde (BVS), nas bases de dados LILACS, PubMed e SCIELO, onde a seleção dos artigos foi delimitada ao período de 2010 a 2018. Foram identificados 48 artigos sobre o tema, em português e inglês, e após a análise dos critérios de inclusão e exclusão, restaram sete artigos. **RESULTADOS:** Os estudos apontam que há um aumento gradativo da disfunção do assoalho pélvico com a evolução da gestação, prejudicando as atividades de vida diária e o bem-estar. Os artigos revisados mostram que o útero gravídico passa por alterações hormonais ao longo dos trimestres gestacionais, sendo mais acentuados com a maior idade. **CONCLUSÃO:** A incontinência urinária envolve diversos aspectos negativos relacionados à qualidade de vida das mulheres. Faz-se necessário a devida atenção do profissional da saúde sobre a prevenção, orientação e diagnóstico durante a gestação, trazendo benefícios na assistência da saúde da mulher.

**PALAVRAS-CHAVE:** Incontinência urinária. Gestantes. Qualidade de vida.

**ABSTRACT | INTRODUCTION:** Pelvic floor (PA) dysfunctions during escape gestation and the arrangements can trigger urinary incontinence (UI). The great inconvenience to the accompaniment of the problem of the presence of mycological symptoms, can interfere negatively in the well-being during the gestational period. **OBJECTIVE:** To analyze the repercussions of urinary incontinence on quality of life during the gestational period. **MATERIALS AND METHODS:** The study comprises a systematic review, made the survey of the literature through the virtual health library (BVS), in the databases LILACS, PubMed and SCIELO, where a selection of articles was delimited to the period of 2010 to 2018. 48 articles were identified on the topic, English and Portuguese, and after an analysis of the inclusion and exclusion criteria, there were seven articles remaining. **RESULTS:** The studies indicate that there is a gradual increase of the pelvic floor dysfunction with the evolution of gestation, damaging the activities of daily living and well-being. The reviewed articles show that the gravid uterus undergoes hormonal changes throughout the gestational gestures, being more accentuated with an older age. **CONCLUSION:** Urinary incontinence involves several negative aspects related to women's quality of life. Adequate care of the health professional is necessary on the prevention, orientation and diagnosis during the pregnancy, bringing benefits in the health care of the woman.

**KEYWORDS:** Urinary incontinence. Pregnant women. Quality of Life.

## Introduction

Female Urinary Incontinence (UI) is an important public health problem due to its high prevalence and / or high physical, psychic and social impact on the woman's life, is directly correlated with changes in the quality of life<sup>1</sup>. The International Continence Society (ICS) defines urinary incontinence (UI) as any involuntary loss of urine. It is a modification in the original definition, which considered as UI only the losses that caused social or hygienic discomfort to the patients, that is, those related negatively to the quality of life<sup>2</sup>.

The UI is included among one of the situations that affect people's QoL, their sexual, social, domestic, occupational, physical, psychosocial and economic damage, leaving them vulnerable to various problems due to the restrictions they impose on their activities of daily life, becoming a major public health problem<sup>3</sup>. In Brazil, it is estimated that about 50% of the women present urinary incontinence, mainly during the puerperal, pregnancy cycle and after the reproductive age. Urinary loss can occur in different situations in daily life, causing disabilities and limitations in physical activity and, in more severe cases, limiting social activities that lead to morbidity among affected women, such as psychosocial and sexual changes, social exclusion, in order to protect themselves from the discomfort caused by urinary losses, as well as the tendency to decrease fluid intake, which may cause urinary infection and impact on the renal system<sup>3</sup>.

The most important continence factor is the support network formed by the fibers of the anus levator muscle that attach to the endopelvic fascia and encircle the vagina and the distal portion of the urethra, pulling it towards the pubis and compressing it against the fascia and against the vaginal wall during muscle contraction, thus maintaining urethral occluded light. Associated with this, there is the storage phase, in which occurs when the bladder can accumulate increasing amounts of urine inside without significant variations of pressure, while the urinary sphincters remain contracted, which establishes an intra-urethral pressure greater than the pressure vesical Damage and / or changes caused to the pelvic floor by gestation and childbirth, among others, cause dysfunction of the muscles that tends to worsen after menopause<sup>4</sup>. Pelvic floor (PA) dysfunction due to structural and functional damage of muscles,

nerves, fascia or ligaments can produce symptoms such as urgency and increased urinary frequency, pelvic organ prolapse, urinary incontinence (UI) and fecal incontinence. During gestation, these symptoms may be associated with the effect of pressure of the uterus on the bladder, significantly reducing bladder compliance, and may negatively affect the quality of life of pregnant women<sup>6</sup>.

Because of the feeling of embarrassment that causes and difficult diagnosis, because it does not seek care for this problem, UI is a "hidden" epidemic. Likewise, this health condition, especially of women, perhaps due to deficiencies in information about the subject, is often neglected by health professionals, who fail to ask about this topic during anamnesis or clinical examination in the different areas of health. health care<sup>3</sup>. This embarrassing situation of involuntary loss of urine has overwhelming consequences, often causing marginalization of social interaction, a threat to self-esteem, and psychosocial frustrations; early institutionalization; interfering, also in sexuality, significantly altering women's health and quality of life<sup>4</sup>. The presence of voiding symptoms, such as nocturia and urinary loss, may negatively affect quality of life during the gestational period and these symptoms may intensify and worsen the general perception of health and impact of incontinence throughout pregnancy. It is known that few pregnant women with micturition symptoms seek help because they do not feel comfortable reporting these symptoms to family, friends and health professionals, and often do not know that these symptoms can be treated or controlled<sup>6</sup>.

In view of the placements, this article aims to analyze, through a systematic review of the literature, the repercussions of urinary incontinence on quality of life in pregnant women. The recognition of this study may in future collaborate in the implementation of intervention measures, be it in prevention or treatment, aiming to improve the attention given to these pregnant women and / or to improve existing measures in the health care of women.

## Materials and methods

This is a systematic review based on specialized literature through consultation of scientific articles

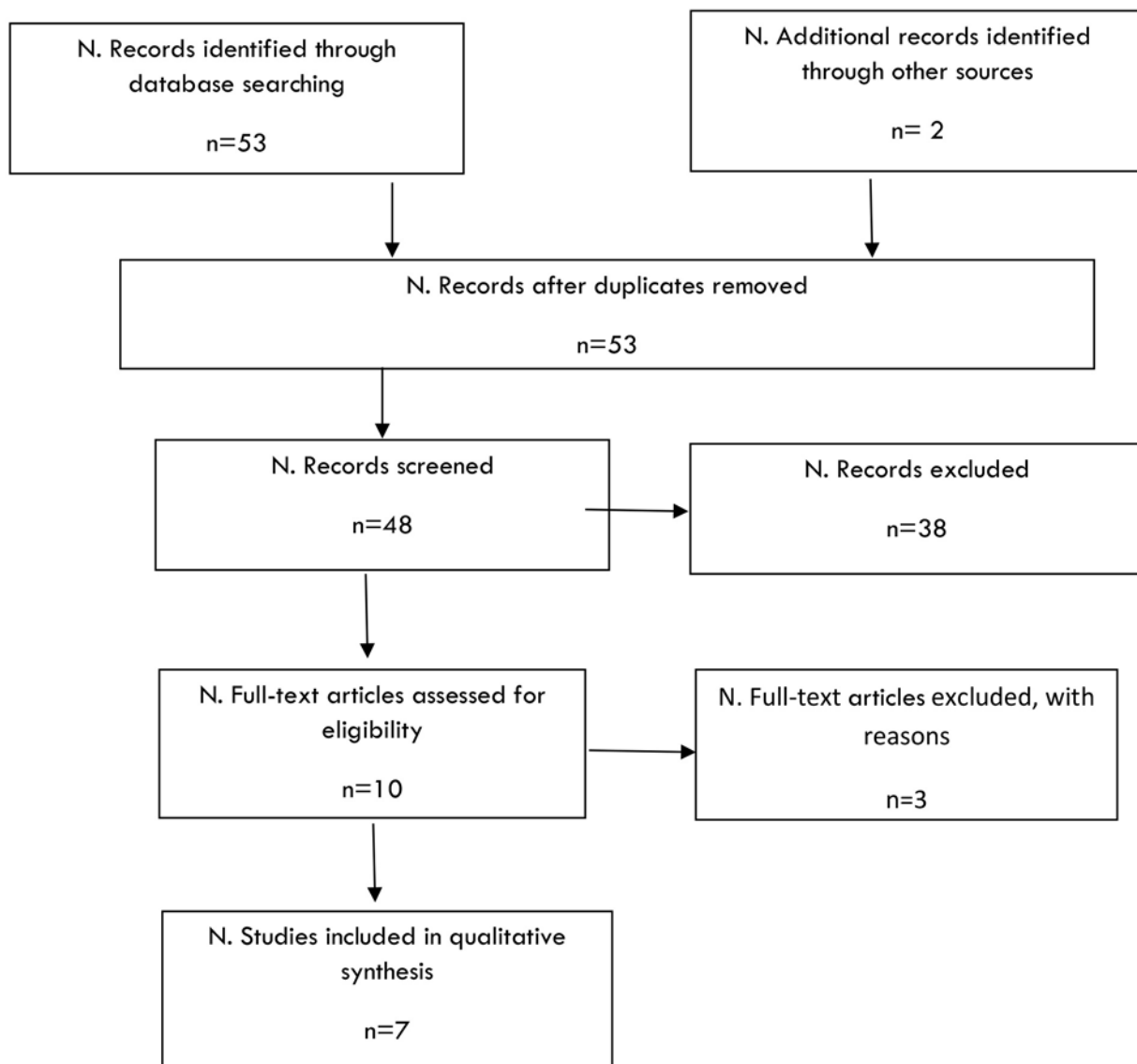
through the Virtual Health Library (BVS), the databases of LILACS, PubMed, PEDro and SCIELO, published between the years 2010 and 2018. It was used the use of key words such as Urinary Incontinence, Pregnant Women and Quality of Life, according to the descriptors in health science (DeCS) in Portuguese and English. It is important to note that in the present study there is no protocol and record for consultation availability.

An analysis of titles, abstracts and exclusion of duplicates was carried out to obtain articles potentially relevant to the review, taking into account the inclusion criteria: experimental articles that had a direct relation with the proposed theme, within the study period, in the Portuguese and English languages, available in full form. The exclusion criteria included studies with methodology of bibliographic review or epidemiological profile.

## Results

After the articles were screened, they were read and the data analyzed by the researchers, through exploratory, selective, analytical and interpretative readings. The pre-selected articles were submitted to the inclusion and exclusion criteria, resulting in 4 articles for the SciELO database, 2 articles for the Lilacs database, 42 for the PubMed database, no item was found in the database PEDro. After reading the abstracts, a total of 10 articles were established. Following a more detailed evaluation, a total of seven articles were selected, being two articles in Portuguese and five in English that fall within the inclusion criteria of this research, (Figure 1).

**Figure 1.** Flowchart of the studies identified and selected according to the search in the databases, the repercussions of urinary incontinence on quality of life in pregnant women. 2018



The selected articles were analyzed from the reading, and the main aspects of the articles were described in chart 1 below.

**Chart 1.** Studies included in the systematic review of the repercussions of urinary incontinence on quality of life in pregnant women. 2018 (to be continued)

Author/ Year	Type of Study	Sample	Methods	Results	Conclusion
Kocaoz et al. <sup>8</sup> (2010)	Cross-sectional and descriptive study	A total of 393 pregnant women	International Consultation Questionnaire on Short Form Incontinence and Wagner Quality of Life Scale	The prevalence of urinary incontinence was 27%. Factors associated with urinary incontinence included age, parity, previous urinary incontinence, constipation, urinary incontinence during pregnancy and postpartum	Urinary incontinence is common in women during pregnancy. The quality of life of pregnant women was not affected or slightly affected by urinary incontinence
Oliveira et al. <sup>11</sup> (2013)	Cross-sectional descriptive study	A total of 495 women studied	The International Short Form Inquiry Questionnaire (ICIQ-SF) was used to investigate the occurrence of urinary incontinence (UI) and its relationship with sociodemographic variables and quality of life	352 (71%) reported having had UI in the last four weeks of gestation and 143 did not report, with no significant difference in age. It resulted in an average of 12.11 ICIQ-SFo score that implies a very severe impact on the quality of life	The majority of pregnant women present UI, negatively affecting the quality of life

**Chart 1.** Studies included in the systematic review of the repercussions of urinary incontinence on quality of life in pregnant women. 2018 (continuation)

Author/Year	Type of Study	Sample	Methods	Results	Conclusion
Moccellin et al. <sup>6</sup> (2014)	Cross-sectional observational study	15 pregnant women complained of urinary loss and presence of voiding symptoms and 25 pregnant women without voiding complaints	The evaluations consisted of the application of two quality of life questionnaires (King Health Questionnaire and the World Health Organization Quality of Life)	Pregnant women without voiding symptoms presented better quality of life than those with micturition symptoms in the physical, social and environmental domains. All with voiding symptoms reported episode of urine loss in the last month prior to the evaluation and 80% reported that the symptoms started during gestation; worsening of the scores of the domains general perception of health and impact of incontinence between the 1st and 2nd evaluation	Urinary loss reduces the quality of life of pregnant women. Other factors such as social support and emotions may also have negative impacts on quality of life during pregnancy
Riesco et al. <sup>5</sup> (2014)	Cross-sectional study	Total of 500 pregnant women	Pregnant women with IU answered the International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF)	Maternal age (chance of UI increases the greater the age of the pregnant woman) and previous UI (pregnant women who have had UI) are the variables that, together, better explain the occurrence of UI at the beginning of gestation. The mean ICQ-SF score was 8.2 (d.p. = 3.9), considered to have a moderate impact on quality of life	Older women with previous UI are more likely to have UI in the first trimester of pregnancy

**Chart 1.** Studies included in the systematic review of the repercussions of urinary incontinence on quality of life in pregnant women. 2018 (conclusion)

Author/Year	Type of Study	Sample	Methods	Results	Conclusion
Franco et al. <sup>7</sup> (2014)	Cross-sectional study	224 women were included in the study, where they were divided into group 1 (n = 58) and group 2 (n = 166)	Using the International Questionnaire on Incontinence - Short Form (ICIQ-SF)	The incidence of IU during pregnancy is different in the first and third trimesters: 18.96% and 39.76%. Participants presented mainly IU of effort (78.37%) and urgency was present only in 12.16% of them	In all patients, the leak was mild to moderate, not seriously affecting their daily lives, but affecting their physical, mental and social domains of their quality of life
Kok et al. <sup>10</sup> (2016)	Descriptive and cross-sectional study	Comprised of 287 pregnant women	Questionnaire developed by the researcher that included two validated instruments, the International Consultation on Short Incontinence Questionnaire and Incontinence Quality of Life Questionnaire	The prevalence of UI in the study population was 21.3%. The cumulative scores in pregnant women who "always" experienced UI and those who expressed a "large amount" of UI were lower than those with lighter UI	It was found that UI was prevalent in the group of pregnant women studied. Multivariate analysis showed that age, parity and gestational week were associated with an increased likelihood of IU during pregnancy. The greater and more frequent the loss of urine negatively influenced the HRQoL in these women
Daly et al. <sup>9</sup> (2018)	Cross-sectional study	860 nulliparous women recruited during pregnancy	Validated prenatal research was done with standardized questions on the frequency, type and severity of any urinary leakage in the 12 months before and during pregnancy, as well as sociodemographic questions	The prevalence of any urinary leakage was 34.8% before and 38.7% during pregnancy. The prevalence of UI, with urine loss at least once a month, was 7.2% and 17.7%, respectively. Mixed urinary incontinence (MI) was reported by 59.7% of women before and 58.8% during pregnancy, stress urinary incontinence (SUI) in 22.6% and 37.2%, and urinary incontinence (UI) in 17.7% and 4.0%, respectively	Nulliparous women leak urine before and during pregnancy, where most ignore the symptoms. Being ≥35 years old, being overweight or leaking less than once per month pre-pregnancy are significant risk factors for the development of UTIs of recent onset of pregnancy, affecting their quality of life



## Discussion

The prevalence of UI in pregnancy has a significant increase according to the evolution of the same, due to the physiological and mechanical changes that occur and tend to change during this period. UI represents a major public health problem and is determined by innumerable risk factors, during which during pregnancy, it is a period of physiological and mechanical changes, it is possible to show changes in the urinary system<sup>12</sup>. Scarpa et al.<sup>13</sup>, states in one study that the nature of urinary symptoms during pregnancy is related to the risk factors and the lack of knowledge of it, as well as the UI itself.

Several evidences have shown that during the gestational trimester different results can be obtained regarding the prevalence of UI. Moussa et al.<sup>7</sup> observed in the study that most of the pregnant women did not report urine loss during the first trimester and those in the third trimester reported urine loss to the efforts. Unlike Adaji et al.<sup>8</sup>, who observed that most incontinents were in the second trimester of pregnancy. In the studies by Bekele et al.<sup>9</sup> and Rocha et al.<sup>10</sup>, the prevalence of urinary symptoms was in the third trimester of gestation. The prevalence of this dysfunction found in the findings of this review was evidenced by the changes in the first and third trimester of pregnancy, which verified that of 224 pregnant women, 39.76% were in the third trimester and 78.37% reported stress urinary incontinence. uterine volume and hormone levels differ between the first and third trimester of gestation<sup>11</sup>.

The study by Bekele et al.<sup>9</sup> has a complex approach, since it detailed the relationship between UI and multivariate, noting that the prevalence of UI was seen in pregnant women who were in the third trimester of pregnancy, associated with weakness of the MAP muscles, in addition to having presented UI during the previous gestation. A significant association of UI was found with episiotomy as well as UI with some respiratory problem during pregnancy. In a complementary manner, Kocaöz et al.<sup>14</sup> observed in her study that of 393 pregnant women, the prevalence of UTI was 27%. The history of urinary tract infection, the history of the mother, the history of the sister with UI, previous pregnancy, and in the previous postpartum period, predominating in the pregnant women who were in the third trimester.

Riesco et al.<sup>5</sup>, can analyze the UI and its relationship with the age factor, as well as a greater number of pregnancies, previous deliveries and vaginal deliveries, with perineal trauma in previous parturition, overweight and obesity, previous UI and pelvic floor <30 cmH<sub>2</sub>O. In a more recent study, Daly et al.<sup>15</sup> assimilated the variable age and overweight, where pregnant women over 35 years of age who were overweight or having urine losses less than once a month before pregnancy may be among the factors risk factors for the development of UI. It can be compared to the study by Kok et al.<sup>16</sup>, where it was found that 82.0% of the women with UI were 30 years of age or older, and 44.7% were overweight based on the BMI Classification System World Health Organization. Considering the results, it is observed that the age and overweight factor overlaps with the others, and may be justified by the study by Hernández et al.<sup>17</sup> and Daly et al.<sup>15</sup>, where women in the highest categories of BMI had a lower socioeconomic index, a lower level of schooling and little of physical exercise<sup>17</sup> and older women are more likely to develop IUM<sup>15</sup>. According to Rocha et al.<sup>10</sup>, in their experimental study with incontinent pregnant women and continents, there was a statistically significant difference between the type of delivery and the occurrence of UI. Oliveira et al.<sup>18</sup> reported a similarity to Rocha et al.<sup>10</sup>, in which the women who underwent vaginal delivery were 2.5 times more likely to have UI than those who underwent cesarean delivery.

Still on the study of Oliveira et al.<sup>18</sup>, it was observed that the ethnicity factor could be associated with the schooling factor, which may influence the onset of UI during gestation. The higher prevalence of UI was found in black women than in white women, and that, when they had less than eight years of formal education, they were three times more likely to have UI than those with higher education. In a multi-ethnic study by Bø et al.<sup>19</sup>, it was seen that the prevalence of UI was in European and North American ethnicities and the lowest prevalence was found in African women. On the other hand, in the studies of Riesco et al.<sup>5</sup>, the ethnicity factor was not statistically significant in its analyzes, and there was no association between ethnicity and UI triggering in white and non-white pregnant women.

Although all the discussion related to the prevalence and risk factors were raised, one should not forget to emphasize the psychosocial aspects and the impact of UI on the quality of life of these pregnant women. Regarding the UI perception, Bø et al.<sup>19</sup>, states in her study that many pregnant women consider UI as a normal physiological alteration of pregnancy and end up not reporting to health professionals who accompany them. It can be seen in the study by Kocaöz et al.<sup>11</sup>, since the pregnant women evaluated their quality of life as minimally affected by UI. Rocha et al.<sup>10</sup> verified that during prenatal care, 48.5% of the pregnant women reported that they had not been approached about the symptoms of urinary incontinence. According to Dombek & Latorre<sup>20</sup> the majority of pregnant women do not see IU as a problem because they think it is transitory, which can bring many future worries and constraints to these women.

The study by Moussa et al.<sup>17</sup> evidenced through the data obtained in the WHOQOLbref questionnaire, which is applied throughout the gestational trimesters, that the quality of life of the pregnant women during the three quarters is not affected, considering it in good quality of life. In the study by Riesco et al.<sup>5</sup>, Franco et al. and Kok et al.<sup>16</sup>, using the ICIQ-SF instrument, it was seen that UI has a moderate impact on the quality of life of these women. What differs in the study by Oliveira et al.<sup>18</sup>, who with the same instrument, observed a very severe impact on the quality of life of pregnant women indicating that the UI had a negative effect and could affect their work routines, activities in their free time and even sex. The opinion formulated in this review article on the subject is combined with studies that support the idea that it is important to investigate the presence of involuntary loss of urine during pregnancy<sup>8</sup>, since this condition may be a factor contributing to the decrease of quality of life and increased risk of compromising the health of these women during the gestational period<sup>9,6</sup>.

## Conclusion

From this review on the repercussions of UI in pregnant women, there is a gradual increase of PA dysfunction with the evolution of pregnancy, impairing daily life activities and well-being. It is observed that the gravid uterus undergoes hormonal changes throughout the gestational trimesters, being more accentuated with the greater age. Thus, it is extremely important to use instruments such as quality of life questionnaires that can assess the symptoms of UI and its aspects, as well as the severity of its impairment in the quality of life of pregnant women.

It was possible to find several methodological instruments used by the authors that contribute to an effective elaboration of their studies with plausible results. Therefore, adequate attention is needed on prevention, guidance and diagnosis related to PA dysfunction during pregnancy, generating information to improve the quality of life, bringing benefits to women's health care.

## Author contributions

Epaminondas LCS participated in the conception of the study design, search and selection of the research data, the interpretation of the results and the writing of the scientific article. Negrão LN and Costa SAS participated in the conception of the study design, the search and selection of the research data, interpretation of the results and the writing of the manuscript. Macêdo RC supervised the study and participated in the writing. All authors participated in the critical review of the manuscript.

## Competing interests

No financial, legal or political competing interests with third parties (government, commercial, private foundation, etc.) were disclosed for any aspect of the submitted work (including but not limited to grants, data monitoring board, study design, manuscript preparation, statistical analysis, etc.).



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