# URINARY INCONTINENCE IN WOMEN AND RACIAL ASPECTS: A LITERATURE REVIEW[1]

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**ABSTRACT:** Literature review aimed to identify associations between urinary incontinence in women and racial aspects. We used the databases MEDLINE and LILACS for research articles published in the years 2003 to 2010. It were analyzed 30 publications that indicated different relationships between incontinence and race. The prevalence of incontinence was higher among white women. The stress urinary incontinence was more common among white and urgency among black. White and Asian have urinary leakage in small quantity compared to black and Hispanic. The impact on quality oh life was more related to the severity of urinary loss and other factors, rather than specifically to the issue of race. White had better knowledge about incontinence and more frequently underwent surgical treatment for stress urinary incontinence. White and Hispanic had higher risk of urinary incontinence than black and Asian. It is emphasized the need for Brazilian studies so that data may be adequate to our reality.

**DESCRIPTORS:** Urinary incontinence. Ethnicity and health. Women's health.

# A INCONTINÊNCIA URINÁRIA EM MULHERES E OS ASPECTOS RACIAIS: UMA REVISÃO DE LITERATURA

**RESUMO:** Revisão bibliográfica que objetivou identificar as associações entre a incontinência urinária feminina e os aspectos raciais. Utilizaram-se as bases de dados MEDLINE e LILACS para pesquisa dos artigos publicados nos anos de 2003 a 2010. Analisou-se 30 publicações que apontaram diversas relações entre incontinência e raça. A prevalência de incontinência foi maior entre brancas. A incontinência urinária de esforço foi mais frequente entre brancas e a de urgência, entre negras. Brancas e asiáticas apresentam perda urinária em menor quantidade comparado a negras e hispânicas. O impacto na qualidade de vida esteve mais relacionado à severidade da perda urinária e outros fatores, do que especificamente à questão racial. Brancas apresentaram melhor conhecimento sobre incontinência e se submeteram mais frequentemente a tratamento cirúrgico para incontinência urinária de esforço. Brancas e latinas apresentam maior risco de incontinência urinária que negras e asiáticas. Ressalta-se a necessidade de estudos brasileiros para que os dados possam ser adequados à nossa realidade.

**DESCRITORES:** Incontinência urinária. Etnia e saúde. Saúde da mulher.

# LA INCONTINENCIA URINARIA EN MUJERES E LOS ASPECTOS RACIALES: UNA REVISIÓN DE LA LITERATURA

**RESUMEN:** Revisión de literatura cuyo objetivo fue identificar las asociaciones entre la incontinencia urinaria en las mujeres y los aspectos raciales. Se utilizaron las bases de datos MEDLINE y LILACS para investigar los artículos publicados en los años 2003 a 2010. Se analizaron 30 publicaciones que indicaron diferentes relaciones entre la incontinencia y la raza. La prevalencia de la incontinencia fue mayor entre las mujeres blancas. La incontinencia urinaria de esfuerzo fue más frecuente entre blancas y de urgencia entre negras. Blancas y asiáticas tenían pérdida urinaria en menor cantidad en comparación con las negras e hispanas. El impacto en la calidad de vida está más relacionada con la severidad de la pérdida de orina y otros factores, y no específicamente a la cuestión de la racial. Blancas tuvieron un mejor conocimiento acerca de la incontinencia y con mayor frecuencia fueron sometidos a tratamiento quirúrgico por la incontinencia urinaria de esfuerzo. Las blancas y latinas tienen mayor riesgo de incontinencia cuando comparadas con las negras y asiáticas. Se resalta la necesidad de estudios brasileños para que los datos puedan ser adecuados a nuestra realidad.

**DESCRIPTORES:** Incontinencia urinaria. Etnia y salud. Salud de la mujer.

## INTRODUCTION

Urinary Incontinence (UI) is currently defined by the International Continence Society (ICS) as the "complaint of any involuntary leakage of urine",[1:38] valorizing the report of the patient. The characterization of UI occurs according to the events that lead to the loss of urine, being classified as stress UI (urine leakage simultaneous with effort, physical exercise, coughing or sneezing), urge UI (involuntary loss of urine accompanied or immediately preceded by a sudden and uncontrollable urge to urinate that is difficult to postpone) or mixed (when there are signs and symptoms of the two types reported above).[1]

Epidemiological studies show a prevalence of UI of 26.5% in women between 35 and 64 years of age[2] and 41% in those older than 65 years.[3] Other studies describe a prevalence of 49.6% in women over 20 years of age[4] and 45% in those that are between 30 and 90 years.[5] The prevalence of UI increases with age,[5-7] and therefore, this condition will become extremely common with the aging of the population. The risk factors frequently highlighted are, among others: advanced age, high body mass index (BMI), white race, parity, menopause, hysterectomy, and comorbidities such as depression and diabetes.[2-3,5,7] Urinary incontinence and declining health are commonly seen as a natural part of aging.[8] Therefore, despite being one of the most prevalent chronic diseases, it is often not recognized by the healthcare system.[9] In addition to the significant impact on the quality of life of the woman,[10] data show that this condition generates individual and national healthcare cost, with an emotional and financial impact that continues to increase.[4] In addition, women with UI experience a stigma that generates psychological and social concerns.[11]

The relationship between UI and race/ethnicity has been explored in a thematically diverse manner. Although there seems to be agreement that there are differences in the prevalence of UI according to ethnic and racial groups, there is no unanimity on the magnitude and nature of these diferences.[12] Regarding the impact of incontinence on the quality of life in the different ethnic groups, a growing number of studies on the subject can be found. It is known that currently the quality of life concept is increasingly consolidated as an important variable in the clinical and nursing practice.[13] Therefore, this study aims to identify the associations described in the literature between female UI and racial aspects.

## METHOD

This work is characterized as a literature review. The data were collected through a survey of the scientific productions on female UI and racial issues produced between the years 2003 to 2010. The review was performed from the Latin American and Caribbean Literature on the Health Sciences (LILACS) and the International Database for Medical Literature (MEDLINE) electronic databases, consulted via the Virtual Health Library (VHL) website of the Regional Library of Medicine (BIREME). Using the LILACS database and the descriptors Urinary AND Incontinence AND Race, three articles were found. In the MEDLINE database, using the same keywords, 135 studies were identified, two of them also cited in LILACS.

The articles were selected according to the following inclusion criteria: to have been published in the period 2003 to 2010, to be written in English, Spanish or Portuguese and to address issues related to female UI and racial aspects. Articles were excluded that focused on UI in men and children, fecal incontinence and literature reviews on the topic in question. Initially, the articles were selected by title and then by abstract. In this step 34 articles were selected that related UI in women and racial issues. The full texts were obtained through the Digital Library of the State University of Campinas (UNICAMP) and the Library of the School of Medical Sciences of UNICAMP. A total of 32 articles were located, all in English.

After reading the texts in full, 30 articles were selected from the MEDLINE database, which will be discussed in this study. Two articles were excluded: one because it was a literature review and the other because the theme did not correspond directly to UI and racial aspects. The articles included were organized into thematic categories according to the relationships between UI and racial aspects presented by them.

## RESULTS

The 30 selected studies are described in the following Table:

**Table 1 - Articles included — MEDLINE — 2003 to 2010**

| AUTHORS | TITLE | JOURNAL | YEAR |
|---|---|---|---|
| Waetjen LE et al[14] | Stress urinary incontinence surgery in the United States. | Obstet Gynecol | 2003 |
| Grodstein F et al[15] | Association of age, race and obstetric history with urinary symptoms among women in the Nurse's Health Study. | Am J Obstet Gynecol | 2003 |
| Novielli KD et al[16] | Urinary incontinence in primary care: a comparison of older African-American and Caucasian women. | Int Urol Nephrol | 2003 |
| Jackson RA et al[17] | Urinary incontinence in elderly women: findings from the health, aging, and body composition study. | Obstet Gynecol | 2004 |
| Kubik K et al[18] | Does socioeconomic status explain racial differences in urinary incontinence knowledge? | Am J Obstet Gynecol | 2004 |
| Melville JL et al[5] | Urinary incontinence in US women: a population-based study. | Arch Intern Med | 2005 |
| Thom DH et al[19] | Differences in prevalence of urinary incontinence by race/ethnicity. | J Urol | 2006 |
| Anger JT et al[6] | The prevalence of urinary incontinence among community dwelling adult women: results from the National Health and Nutrition Examination Survey. | J Urol | 2006 |
| Danforth KN et al[7] | Risk factors for urinary incontinence among middle-aged women. | Am J Obstet Gynecol | 2006 |
| Huang AJ et al[20] | Quality-of-life impact and treatment of urinary incontinence in ethnically diverse older people. | Arch Intern Med | 2006 |
| Huang AJ et al[21] | Urinary incontinence and pelvic floor dysfunction in Asian-American women. | Am J Obstet Gynecol | 2006 |
| Waetjen LE et al[22] | Factors associated with prevalent and incident urinary incontinence in a cohort of midlife women: a longitudinal analysis of data: study of women's health across the nation. | Am J Epidemiol | 2007 |
| Anger JT et al[9] | Racial disparities in the surgical management of stress incontinence among female Medicare beneficiaries. | J Urol | 2007 |
| Kraus SR et al[12] | Race and ethnicity do not contribute to differences in preoperative urinary incontinence severity or symptom bother in women who undergo stress incontinence surgery. | Am J Obstet Gynecol | 2007 |
| Dooley Y et al[4] | Urinary incontinence prevalence: results from the National Health and Nutrition Examination Survey. | J Urol | 2008 |
| Ragins AI et al[8] | Effects of urinary incontinence, comorbidity and race on quality of life outcomes in women. | J Urol | 2008 |
| Daneshgari F et al[23] | Differences in urinary incontinence between Hispanic and non-Hispanic white women: a population-based study. | BJU Int | 2008 |
| Tennstedt SL et al[24] | Prevalence and risk factors for urine leakage in a racially and ethnically diverse population of adults: the Boston Area Community Health (BACH) Survey. | Am J Epidemiol | 2008 |
| Fenner DE et al[2] | Establishing the prevalence of Incontinence Study: racial differences in women's patterns of urinary incontinence. | J Urol | 2008 |
| Goode OS et al[3] | Population based study of incidence and predictors of urinary incontinence in black and white older adults. | J Urol | 2008 |
| Shah AD et al[25] | Surgery for stress urinary incontinence in the United States: does race play a role? | Int Urogynecol J Pelvic Floor Dysfunct | 2008 |
| Shah AD et al[26] | Do racial differences in knowledge about urogynecologic issues exist? | Int Urogynecol J Pelvic Floor Dysfunct | 2008 |
| Sears CLG et al[27] | The racial distribution of female pelvic floor disorders in an equal access health care system. | J Urol | 2009 |
| Phelan S et al[28] | Prevalence and risk factors for urinary incontinence in overweight and obese diabetic women: action for health in diabetes (look ahead) study. | Diabetes Care | 2009 |
| Lewicky-Gaupp C et al[29] | Racial differences in bother for women with urinary incontinence in the Establishing the Prevalence of Incontinence Study (EPI) study. | Am J Obstet Gynecol | 2009 |
| Tennstedt SL et al[30] | The effects of severity of urine leakage on quality of life in Hispanic, white and black men and women: The Boston Community Health (BACH) Survey. | Urology | 2010 |

| AUTHORS | TITLE | JOURNAL | YEAR |
|---|---|---|---|
| Townsend MK et al[31] | The incidence of urinary incontinence across Asian, black, and white women in the Unites States. | Am J Obstet Gynecol | 2010 |
| Delancey JOL et al[32] | Differences in continence system between community-dwelling black and white women with and without urinary incontinence in the EPI study. | Am J Obstet Gynecol | 2010 |
| Doshi AM et al[33] | Women with diabetes: understanding urinary incontinence and help seeking behavior. | J Urol | 2010 |
| Elstad EA et al[34] | Beyond incontinence: the stigma of other urinary symptoms. | J Adv Nurs | 2010 |

The UI and racial aspects were related in various ways as shown below:

## The prevalence of UI in the various ethnic-racial groups

The studies indicate that the prevalence of UI varies according to the ethnic-racial group, which is higher in white women, regardless of the age group studied. In an epidemiological study[2] that addressed black and white women of a community, aged between 35 and 64 years, the prevalence of UI (based on the number of episodes of urinary loss in the last 12 months) was higher among the white women (33.1%) than the black women (14.6%).

A cohort study[17] conducted with women 70 to 79 years of age found a prevalence of frequent UI (1 or more times a week) of 27% for white women and 14% for black women. Other cohort studies[7,19] that addressed women in similar age groups (37 to 54 years and 40 to 69 years, respectively) indicated that the frequent loss of urine (once a week to daily) was more prevalent among white (26% and 30%) and Hispanic women (26% and 36%) than among black (22% and 25%) and Asian women (18% and 19% respectively). In a study[6] which included women aged 60 years or more, the prevalence of UI was higher in white (41%) and Hispanic women (36%) compared to black women (20%).

A study that considered nurses aged 30 to 55 years found a higher prevalence of UI among white (17.9%) and Hispanic women (15.6%), followed by Asian (12.5%) and black women (9.6%).[15] A prospective cohort study[22] found that African-American (29.5%) and Hispanic women (27.5%) had the lowest prevalence of UI. Another study with women over 50 years of age revealed a high prevalence of UI among African-American (62%) and Caucasian women (67%) without significant difference between the groups.[16]

## The types of UI and the ethnic-racial groups

Among the types of incontinence (stress, urge and mixed), some are more common in certain ethnic-racial groups than in others. Table 1 shows the prevalence of the different types of UI according to race/ethnicity found in the studies.

**Table 2 - Types of urinary incontinence — MEDLINE — 2003 to 2010**

| Type of UI | Age | White (%) | Hispanic (%) | Black (%) | Asian (%) | Authors |
|---|---|---|---|---|---|---|
| Stress | 30-79 years | 35.4 | 14.5 | 9.4 | - | Tennstedt SL et al[24] |
| UUI * | | 13.4 | 10.8 | 3.3 | - | |
| Mixed | | 44.2 | 68.7 | 82.1 | - | |
| Stress | 35-64 years | 39.2 | - | 25.0 | - | Fenner DE et al[2] |
| UUI* | | 11.0 | - | 23.8 | - | |
| Stress | > 20 years | 26.5 | 25.8 | 12.3 | - | Dooley Y et al[4] |
| UUI* | | 7.5 | 7.5 | 11.0 | - | |
| Stress | 40-69 years | 30.0 | 36.0 | 25.0 | 19.0 | Thom DH et al[19] |
| Stress | 70-79 years | 12.0 | - | 5.0 | - | Jackson RA et al[17] |
| UUI* | | 11.0 | - | 7.0 | - | |
| Stress | 55.1 ± 16.3 years | 66.2 | 83.3 | 48.9 | 66.7 | Sears CLE et al[27] |
| UUI* | | 33.8 | 16.7 | 51.2 | 33.3 | |

* UUI = Urge Urinary Incontinence.

From the above table it is possible to identify that, in the first study cited[24], the rate of stress UI for white women was 2.5 times higher than for Hispanic women and almost four times higher than for black women; the rates of urge UI were similar between white and Hispanic women and less frequent among black women, and mixed UI was more frequently reported by black and Hispanic women, and less by white women. A study[2] addressing a similar age group also found a significantly higher proportion of white women who reported symptoms of stress UI compared to black women, however, the proportion of black women with urge UI symptoms was twice as high, with no significant difference in the mixed UI.

An epidemiological study,[4] which included women over 20 years of age, indicated a higher rate of stress UI in white and Hispanic women than in black women; in contrast, black women reported more urge UI than white and Hispanic women, again, without statistical difference in the prevalence of mixed UI according to the ethnic-racial groups.

The fourth study[19] described in Table 2 found a significantly higher prevalence of stress UI among Hispanic women, followed by white, black and Asian women and a higher prevalence of urge UI among black women, followed by Hispanic, white and Asian women. In a retrospective study,[27] stress UI was significantly more prevalent in white women and urge UI in black women. Another study[17] found that white women reported more stress UI and urge UI than black women. However, the age group studied was 70-79 years.

In a population-based case-control study,[23] stress UI was more commonly reported by Hispanic women than by white non-Hispanic women. However, the high prevalence of stress UI was associated with the higher prevalence of risk factors for UI among Hispanic women, including reproductive factors, adiposity, and diabetes.[23]

## The differences in the quantity of urine lost

An epidemiological study[2] with women of a community, between 35 and 64 years, described a significant difference in the amount of urine lost per episode, with half of the incontinent white women (50.1%) reporting the loss of small amounts of urine, compared with 37% of the black women, and half of incontinent black women (50.6%) reporting urine loss, to the point of wetting the underwear or absorbent pad, compared to 37.7% of the white women.[2]

A cohort study[7] that analyzed potential risk factors for UI in women 37 to 54 years of age found that the amount of urine lost sufficient to wet the underwear appeared more frequently among black (62%) and Hispanic women (58%) than among white (53%) and Asian women (49%). A study with women over 50 years of age found no statistically significant difference in the amount of urine loss between African-American and Caucasian women.[16]

## The impact of UI on the quality of life in the ethnic-racial groups

A cohort study[8] with 2,109 women aged 40 to 69 years of diverse races/ethnicities (white, black, Hispanic and Asian) aimed to investigate the effects of UI on general health and incontinence specific Quality of Life (QoL) outcome scores. The study revealed that, the higher the frequency of UI, the greater the negative impact on the QoL. No variation was found in the association of UI and QoL by race/ethnicity. The total QoL scores decreased with the increase in UI for all women in the four racial groups. The authors point out that the lack of findings may be due to the absence of true differences or due to the relatively small sample of the racial categories (48% white, 18% black, 17% Hispanic and 16% Asian).[8]

A similar study[20] indicated a greater impact of UI on QoL associated with the Hispanic ethnicity among other aspects, such as low income, low educational level and greater clinical severity of the UI. An epidemiological study[30] revealed that urinary loss negatively impacted the QoL of men and women, but did not differ between the different races/ethnicities (white, black and Hispanic).

Another study[12] did not describe the impact of UI on the QoL of different ethnic-racial groups, but showed that black women and those categorized as "others" (Asian, Eskimo, Hawaiian) presented higher levels of discomfort with stress UI symptoms than white and Hispanic women, with white women reporting the lowest level of discomfort with the symptoms. However, the multivariate analysis results demonstrated that, after controlling for sociodemographic characteristics, BMI, symptoms and severity of the UI, race and ethnicity were not associated with discomfort with the UI symptoms.[12]

In a qualitative study the report of discomfort/burden due to any type of UI was more frequent among Hispanic women (55%), followed by white (50%) and black women (42%)[34]. A populational based study[29], with white and black women 35 to 64 years of age, found that the higher the frequency and quantity of urine loss, the greater the level of disturbance, regardless of race/ethnicity. However, regarding moderate UI, black women had higher levels of discomfort than white women, and black women with urge UI presented higher levels of discomfort that white women with the same type of UI.[29]

## Knowledge about UI and the ethnic-racial differences

A study[18] that aimed to investigate the knowledge about UI, in a racially and ethnically diverse population (white, black, Hispanic or others) of 202 women 35 to 80 years of age, found that white women seemed to have better knowledge about UI when compared to the non-white women. However, differences in race/ethnicity in the score of the questionnaire used in the study were not statistically significant after adjusting for the socioeconomic status in the multivariate analysis. The authors concluded that the socioeconomic status, not race/ethnicity is independently associated with knowledge about UI, i.e. the socioeconomic status explains racial differences in the total knowledge about IU.[18] In another study,[26] the racial differences in knowledge about UI, with white women knowing more about UI than non-white women (Hispanic, African-American, Asian or others), remained significant, even controlling for income and educational variables.

## Surgical treatment for UI and the ethnic-racial differences

A study[9] developed with female Medicare beneficiaries 65 years of age or over, aimed to identify differences in the diagnosis and surgical treatment of ethnically-racially diverse women with stress UI. Of the women with a specific diagnosis of stress UI, 91.4% were white, 3.8% black, 1.4% Hispanic and 0.7% Asian. Among these, 13.1% of the white, 12.6% of the Hispanic, 7.1% of the black and 2.4% of the Asian women underwent the sling procedure. The white and Hispanic women were disproportionately more likely to undergo the sling procedure than black or Asian women with stress UI, possibly because the severity of stress UI is higher among white and Hispanic women or due to cultural differences affecting the decision to undergo surgery, even when recomended.[9] After controlling for age and comorbidity, non-white women were twice as likely to have non-urological complications and urinary obstruction, as well as pelvic organ prolapse in the year following the sling procedure. The authors noted that further studies are needed to determine whether these divergences are due to racial differences in the clinical characteristics or disparities in the care for minorities (whether ethnic minorities receive lower quality care and are more likely to have complications).

Another study[14] sought to describe the prevalence of UI surgery in the United States in a population of ethnic-racial diversity. Race was classified as white, black, Asian, Eskimo or other. Hispanic ethnicity was not specified. Asian and Eskimo women were included in "others" due to the low numbers in these categories. The authors found that white women had an overall rate of surgery for stress UI almost five times higher than that of black women (11.6/10,000 vs. 2.6/10,000). There were also racial differences in the rates of complications associated with the surgery for UI (20.6 % for black and 9.7% for white women), with infection being almost twice as common among black women (14.2% vs. 8.0%). The authors affirmed that the high number of white women who underwent surgery for stress UI may be due to the greater prevalence of this type of UI among white women. They also affirmed that the racial differences in incontinence surgery rates may be influenced by numerous factors including socioeconomic status, access to and use of the healthcare system, the report of the patient and variations in general attitudes to undergoing surgery or not regarding elective procedures.

A third study[25] considering the year 2003 in the United States, found rates of surgery for stress UI (per 10,000 women) of 10 among white women, three among black women and six for the other races, suggesting that racial disparities between black and white women that undergo surgery for stress UI should exist, with black women undergoing a lower amount compared to white women.[25] The authors revealed that conclusions about non-white and non-black women are limited by the small number of women in other racial groups.

### Urinary incontinence and risk factors according to race/ethnicity

A cohort study[33] revealed that white women (OR:2.15 – CI 95%:1.62 – 2.86) and Latin women (OR:2.17 – CI 95%:1.56 – 3.01) had a higher risk of UI when compared to African-American and Asian women (OR:1.58 – CI 95%: 1.17 – 2.14 and OR:1.59 – CI 95%:1.12 – 2.26, respectively).[33] A cross-sectional population-based study indicated that black women were less subject to UI, specifically stress UI, compared to white women, because they have higher urethral closing pressure.[32] Among overweight and obesity women with type 2 diabetes, the ethnic-racial differences in the prevalence of weekly UI were similar to that of non-diabetic women, affecting significantly more non-Hispanic white women (32%), than African-American (18%) and Asian women (12%).[28]

A fourth study[2] showed that the risk factors for UI are similar among black and white women and include: diabetes, impaired mobility, constipation, urinary tract infection, Chronic Obstructive Pulmonary Disease (COPD), obesity and depressive symptoms. In another study,[21] elevated BMI in Asian and white women was significantly associated with stress UI and urge UI; hysterectomy was an additional risk factor for stress UI among Asian women, but not among white women; additional risk factors for stress UI among white women were frequent urinary tract infections and poor health status, and for urge UI were: age, current use of estrogen and history of a birth of more than 4 kg.

A prospective cohort study[22] found that parity was significantly associated with prevalence of stress UI (OR=1.85 – CI 95%: 1.18 – 2.92) and mixed UI (OR=2.51 – CI 95%:1.35 – 4.69) among Caucasians, but not among African-American (stress OR=0.46 CI 95%: 0.11 – 1.91; mixed OR=0.51 CI 95%:0.11 – 2.41). Low social support was associated with mixed UI among Caucasian women (OR=2.49 – CI 95%:1.41 – 4.38) and stress UI (OR=2.32 – CI 95%: 1.21 – 4.45) and mixed UI (OR=2.35 – CI 95%:1.19 – 4.66) among African-American women. Finally, uterine fibroids were associated with urge UI (OR=1.95 – CI 95%:1.07 – 3.54) only among African-American women and poor health status was associated with Stress UI (OR=4.49 – CI 95%: 1.03 – 19.64) and urge UI (OR=9.27 – CI 95%: 1.72 – 49.97) among Caucasian women.[22]

### The search for medical treatment in the various races/ethnicities

Only two studies presented data regarding the search for medical treatment in the ethnic-racial groups. One of these[20] affirmed that, although the proportion of women who sought treatment was lower among black (33%) and Asian women (34%) compared with white women (42%), this difference was not statistically significant. This study suggests that race/ethnicity, as well as other demographic characteristics, has no influence in seeking treatment for UI.[20] The second study[21] also found no statistically significant difference in seeking treatment between Asian and white women, with moderate to severe UI. The authors emphasize that the overall low rates of seeking treatment suggest that this is a problem in women of both groups.[21]

### The incidence of UI in ethnic and racial groups

A prospective study with women 37 to 79 years of age showed a higher incidence of UI over four years, among white women compared to black and Asian women, black women being less likely to develop stress UI that white women.[31] A cohort study[3] of men and women of 65 to 106 years of age revealed that, in the women, the incidence of UI over three years was 29%, where the annual incidence of UI ranged from 8% to 15% with no differences between the white and black participants. A third study found that African-American women (11.6%) and Caucasian women (13.4%) had the highest mean annual incidence of UI.[22]

## DISCUSSION

The studies related to UI and ethnic-racial aspects are thematically diverse, revealing data on the prevalence, incidence, impact on the quality of life, knowledge about UI, and treatment seeking, among others. The first difficulty encountered is in the classification of the different races and ethnicities, with the majority of the authors categorizing the women as: white or Caucasian, black or African-American, Asian-American or Asian, Hispanic or Latin, and in some cases, including Eskimo and Hawaiian women.

The main limitation of the studies corresponds to the UI symptoms being accessed through the self-reports of the women, with it not

possible to establish whether clinical or urodynamic definitions result in the same associations with race/ethnicity. It is difficult to know, for example, whether the observed racial disparities in the prevalence of UI are due to real differences or to differences in reporting the urinary dysfunction among the various ethnic and racial groups, since the UI can be reported differently by ethnic and racial groups according to the accepted cultural norms.

Regarding the risk factors, the main difficulty in determining whether these vary by race/ethnicity is the fact that the groups had small sample sizes. The results of the studies could not be generalized because they address different age groups. Methodological differences concerning the definition of UI (urine loss in the last week, in the last month or in the last year), also make it difficult to compare data from different years. Concerning the search for UI treatment, it is known that minority groups are more likely to encounter barriers that limit the use of the healthcare system. These barriers may explain the differences in the diagnosis and treatment of incontinence in minorities rather than the race/ethnicity.

Despite the diversity of results presented by the studies, the need is evident for the development of studies regarding the relationship between racial aspects and UI in women, with similar methodologies to enable combined analysis of the data or comparisons. Future research is needed to clarify the divergent aspects of the studies analyzed.

## CONCLUSIONS

The prevalence of UI in general is higher among white and Hispanic women than among black and Asian women. Stress UI has been shown to be more frequent among white women and urge UI among black women, with no significant differences between ethnic and racial groups being found for mixed UI. Regarding the quantity of urine loss, white and Asian women presented low quantities of urine loss, while black and Hispanic women presented higher quantities.

The impact on QoL was more related to the severity of urinary loss, type of UI and factors such as income and education, than specifically to the ethnic-racial issue. Some studies revealed higher levels of discomfort concerning UI among black and Hispanic women. White women have better knowledge about UI when compared to black women, and more frequently undergo surgery for stress UI. White and Latin women present a higher risk for UI than black and Asian women, and the risk factors for UI may differ according to race. The search for UI treatment was not different between the ethnic-racial groups and the studies on the incidence of UI in the various races are scarce and conflicting. Other studies that contemplate UI and racial issues, in the Brazilian population, are needed to comprehend our reality.

## REFERENCES

1. Abrams P, Cardoso L, Fall M, Griffiths D, Rosier P, Ulmsten U, et al. The standardisation of terminology of lower urinary tract function: report from the standardisation sub-committee of the international continence society. Urology. 2003 Jan; 61(1):37-49.
2. Fenner DE, Trowbridge ER, Patel DL, Fultz NH, Miller JM, Howard D, et al. Establishing the prevalence of incontinence study: racial differences in women's patterns of urinary incontinence. J Urol. 2008 Apr; 179(4):1455-60.
3. Goode PS, Burgio KL, Redden DT, Markland A, Richter HE, Sawyer P, et al. Population based study of incidence and predictors of urinary incontinence in black and white older adults. J Urol. 2008 Apr; 179(4):1449-53.
4. Dooley Y, Kenton K, Cao G, Luke A, Durazo-Arvizu R, Kramer H, et al. Urinary incontinence prevalence: results from the National Health and Nutrition Examination Survey. J Urol. 2008 Feb; 179(2):656-61.
5. Melville JL, Katon W, Delaney K, Newton K. Urinary incontinence in US women: a population-based study. Arch Intern Med. 2005 Mar; 165(5):537-42.
6. Anger JT, Saigal CS, Litwin MS. Urologic diseases of America Project. The prevalence of urinary incontinence among community dwelling adult women: results from the National Health and Nutrition Examination Survey. J Urol. 2006 Feb; 175(2):601-4.
7. Danforth KN, Townsend MK, Lifford K, Curhan GC, Resnick NM, Grodstein F. Risk factors for urinary incontinence among middle-aged women. Am J Obstet Gynecol. 2006 Feb; 194(2):339-45.
8. Ragins AI, Shan J, Thom DH, Subak LL, Brown JS, Van Den Eeden SK. Effects of urinary incontinence, comorbity and race on quality of life outcomes in women. J Urol. 2008 Feb; 179(2):651-5.
9. Anger JT, Rodríguez LV, Wang Q, Chen E, Pashos CL, Litwin MS. Racial disparities in the surgical management os stress incontinence among female medicare beneficiares. J Urol. 2007 May; 177(5):1846-50.

10. Lopes MHBM, Higa R. Restrições causadas pela icontinência urinária à vida da mulher. Rev Esc Enferm USP. 2006 Mar; 40(1):34-41.

11. Higa R, Rivorêdo CRSF, Campos LK, Lopes MHBM, Turato ER. Vivências de mulheres brasileiras com incontinência urinária. Texto Contexto Enferm. 2010 Out-Dez; 19(4):627-35.

12. Kraus SR, Markland A, Chai TC, Stoddard A, FitzGerald MP, Leng W, et al. Race and ethnicity do not contribute to differences in preoperative urinary incontinence severity or symptom bother in women who undergo stress incontinence surgery. Am J Obstet Gynecol. 2007 Jul; 197(1):92.e1-6.

13. Vido MB, Fernandes RAQ. Quality of life: considerations about concept and instruments of measure. Online Braz J Nurs. 2007 [acesso 2008 Mar 15], 6(2). Disponível em: http://www.objnursing.uff.br/index.php/nursing/article/view/j.1676-4285.2007.870/197

14. Waetjen LE, Subak LL, Shen H, Lin F, Wang TH, Vittinghoff E et al. Stress urinary incontinence surgery in the United States. Obstet Gynecol. 2003 Apr; 101(4):671-6.

15. Grodstein F, Fretts R, Lifford K, Resnick N, Curhan G. Association of age, race and obstetric history with urinary symptoms among women in the Nurse's Health Study. Am J Obstet Gynecol. 2003 Aug; 189(2):428-34.

16. Novielli KD, Simpson Z, Hua G, Diamond JJ, Sultana C, Paynter N. Urinary incontinence in primary care: a comparision of older African-american and Caucasian women. Int Urol Nephrol. 2003; 35(3):423-8.

17. Jackson RA, Vittinghoff E, Kanaya AM, Miles TP, Resnick HE, Kritchevsky SB, et al. Urinary incontinence in elderly women: findings from the health, aging, and body composition study. Obstet Gynecol. 2004 Aug; 104(2):301-7.

18. Kubik K, Blackwell L, Heit M. Does socioeconomic status explain racial differences in urinary incontinence knowledge? Am J Obstet Gynecol. 2004 Jul; 191(1):188-93.

19. Thom DH, Van den Eeden SK, Ragins AI, Wassel-Fyr C, Vittinghof E, Subak LL, et al. Differences in prevalence of urinary incontinence by race/ethnicity. J Urol. 2006 Jan; 175(1):259-64.

20. Huang AJ, Brown JS, Kanaya AM, Creasman JM, Rains AI, Van Den Eeden SK, et al. Quality-of-life impact and treatment of urinary incontinence in ethnically diverse older people. Arch Intern Med. 2006 Oct; 166(18):2000-6.

21. Huang AJ, Thom DH, Kanaya AM, Wassel-Fyr CL, Van Den Eeden SK, Ragins AI, et al. Urinary incontinence and pelvic floor dysfunction in Asian-American women. Am J Obstet Gynecol. 2006 Nov; 195(5):1331-7.

22. Waetjen LE, Liao S, Johnson WO, Sampselle CM, Sternfield B, Harlow S, et al. Factors associated with prevalent and incident urinary incontinence in a cohort of midlife women: a longitudinal analysis of data: study of women's health across the nation. Am J Epidemiol. 2007 Feb; 165(3):309-18.

23. Daneshgari F, Imrey PB, Risendal B, Dwyer A, Barber MD, Byers T. Differences in urinary incontinence between Hispanic and non-Hispanic white women: a population-based study. BJU Int. 2008 Mar; 101(5):575-9.

24. Tennstedt SL, Link CL, Steers WD, McKinlay JB. Prevalence and risk factors for urine leakage in a racially and ethnically diverse population of adults: the Boston Area Community Health (BACH) Survey. Am J Epidemiol. 2008 Feb;167(4):390-9

25. Shah AD, KohliN, Rajan SS, Hoyte L. Surgery for stress urinary incontinence in the United States: does race play a role? Int Urogynecol J Pelvic Floor Dysfunct. 2008 Aug; 19(8):1085-92.

26. Shah AD, Shott S, Kohli N, Wu JM, Catlin S, Hoyte L. Do racial differences in knowledge about urogynecologic issues exist? Int Urogynecol J Pelvic Floor Dysfunct. 2008 Oct; 19(10):1371-8.

27. Sears CLG, Wright J, O'Brien J, Jezior JR, Hernandez SL, Albright TS et al. The racial distribution of female pelvic floor disorders in an equal access health care system. J Urol. 2009 Jan; 181(1):187-92.

28. Phelan S, Kanaya AM, Subak LL, Hogan PE, Espeland MA, Wing RR et al. Prevalence and risk factors for urinary incontinence in overweight and obese diabetic women: action for health in diabetes (look ahead) study. Diabetes Care. 2009 Aug; 32(8):1391-7.

29. Lewicky-Gaupp C, Brincat C, Trowbridge ER, Delancey JOL, Guire K, Patel DA, Fenner DE. Racial differences in bother for women with urinary incontinence in the Establishing the Prevalence of Incontinence Study (EPI) study. Am J Obstet Gynecol. 2009 Nov; 201(5):510.e1-6.

30. Tennstedt SL, Chiu GR, Link CL, Litman HJ, Kusek JW, McKinlay JB. The effects of severity of urine leakage on quality of life in hispanic, white and black men and women: The Boston Community Health (BACH) Survey. Urology. 2010 Jan; 75(1):27-33.

31. Townsend MK, Curhan GC, Resnick NM, Grodstein F. The incidence of urinary incontinence across asian, black, and white women in the Unites States. Am J Obstet Gynecol. 2010 Apr;202(4):378.e1-7.

32. Delancey JOL, Fenner DE, Guire K, Patel DA, Howard D, Miller JM. Differences in continence system between community-dwelling black and white women with and without urinary incontinence in the EPI study. Am J Obstet Gynecol. 2010 Jun; 202(6):584.e1-12.

33. Doshi AM, Van Den Eeden SK, Morrill MY, Schembri M, Thom DH, Brown JS. Womem with

diabetes: understanding urinary incontinence and help seeking behavior. J Urol. 2010 Oct; 184(4):1402-7.

34. Elstad EA, Taubenberger SP, Botelho EM, Tennstedt SL. Beyond incontinence: the stigma of other urinary symptoms. J Adv Nurs. 2010 Nov; 66(11):2460-70.

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