Research Letter

Urinary Incontinence and Menopausal Symptom Burden

Erica Qiao, MD, Haley Burns, MPH, Maria I. Rodriguez, MD, MPH, and Sara B. Cichowski, MD

Urinary incontinence (UI) is a common midlife symptom that often co-occurs with other menopausal changes. In this cross-sectional survey of 2,084 Oregon residents (approximately 30% rural), 45.8% reported UI. Menopause symptoms burden, measured by the Menopause Rating Scale, was higher for every UI subtype (all $P<.001$). Moderate-to-severe menopause burden increased adjusted odds of stress, urgency, and mixed UI 2-fold to 13-fold ($P<.001$). Reported evaluation and treatment rates were low across all UI subtypes (2.0–14.6%), and it remains unclear how often participants were screened or asked about symptoms by health care professionals. This highlights the need to address both actual and perceived gaps in menopause and continence care through proactive, patient-centered screening.

(Obstet Gynecol 2025;00:1–3)
DOI: 10.1097/AOG.0000000000005994

Urinary incontinence (UI) is a prevalent and disruptive condition commonly experienced by adults navigating midlife and menopause, with substantial effects on quality of life, work productivity, and well-being.[1] Although estrogen decline and genitourinary syndrome of menopause are associated with UI,[2–4] its broader relationship with menopausal symptom burden is underexplored. Understanding these associations may support earlier identification, patient education, and integrated care. This study evaluates the relationship between menopausal symptom burden and UI subtypes using validated instruments in a large statewide cohort that includes nearly one-third rural residents.

METHODS

We conducted a cross-sectional analysis of Oregon residents aged 34–87 years recruited between May and September 2023 through the Healthy Oregon Project, a mobile health research platform.[5] Eligible participants self-identified as female, nonbinary, or transgender male and completed surveys in English or Spanish. This study was approved by the Oregon Health & Science University IRB.

The subtype of UI was assessed with the six-item Questionnaire for Urinary Incontinence Diagnosis, classifying respondents into stress UI (SUI), urgency UI (UUI), mixed UI, or no incontinence.[6,7] Menopausal symptom burden was measured with the 11-item MRS (Menopause Rating Scale) and categorized as no/mild (0–8), moderate (9–16), or severe (17 or higher).[8] The MRS domain scores (somatic, psychological, urogenital) were analyzed separately. Demographic characteristics and care-seeking behaviors were also reported. Race was included to describe the study population and to assess representativeness, given known disparities in access.

Descriptive statistics summarized demographic and clinical characteristics by UI subtype (frequencies and percentages for categorical variables, means and SDs for normally distributed continuous variables, and medians and interquartile ranges for nonnormally distributed continuous variables). Kruskal–Wallis omnibus tests were used to compare MRS scores across groups, followed by Dunn pairwise tests to compare patients with each UI subtype with those without incontinence in the case of a significant result. Multivariable logistic regression models evaluated

From the Department of Obstetrics and Gynecology, Oregon Health & Science University, Portland, Oregon.

Supported by The Yarg Foundation.

Presented at the Pacific Coast Obstetrical and Gynecological Society's 91st Annual Conference, September 11–14, 2024, Victoria, British Columbia, Canada.

Each author has confirmed compliance with the journal's requirements for authorship.

Corresponding author: Erica Qiao, MD, Department of Obstetrics and Gynecology, Oregon Health & Science University, Portland, OR; Qiao@ohsu.edu.

Financial Disclosure
The authors did not report any potential conflicts of interest.

ISSN: 0029-7844/25

associations between MRS symptom burden and each UI subtype with adjustment for age. Age was selected a priori as a covariate for adjustment in multivariable models on the basis of its established associations with both menopausal symptoms and UI.

RESULTS

Among 2,084 participants, 45.8% reported UI: SUI 19.7%, UUI 7.9%, and mixed UI 18.2% (Table 1). The mean age was similar across groups (range 57.5–60.4 years). Most participants identified as female (2,072 of 2,084, 99.4%) and White (1,975 of 2,084, 94.8%), with approximately 30% (590 of 2,084) residing in rural ZIP codes (Table 1).

Participants with UI reported significantly greater menopause symptom burden across all MRS domains. Compared with those without UI (composite score median [interquartile range] 11 [6–15]), those with SUI (14 [9–19]), UUI (13 [10–17.5]), and mixed UI (16.5 [12–22]) reported elevated scores ($P<.001$). Somatic and urogenital domain scores were higher in all UI subtypes, and psychological scores were significantly higher in those with SUI and mixed UI (Table 1). Reported evaluation and treatment rates were low across all UI subtypes (2.0–14.6%), and it remains unclear how often participants were screened or asked about symptoms by health care professionals.

In multivariable models, increasing menopause symptom burden was independently associated with higher odds of all UI subtypes (Table 2). Compared with participants with no/mild symptoms, moderate menopause symptoms were associated with 2.07-fold higher odds of SUI, 2.82-fold higher odds of UUI, and 4.29-fold higher odds of mixed UI; severe symptoms were associated with 3.13-fold, 3.82-fold, and 13.04-fold higher odds, respectively (all $P<.001$) (Table 2).

Table 1. Demographic Characteristics and Menopause Rating Scale Scores by Urinary Incontinence Subtype (N=2,084)

Characteristic	No Incontinence (n=1,129, 54.2%)	SUI (n=411, 19.7%)	UUI (n=164, 7.9%)	MUI (n=380, 18.2%)
Mean age (y)	59.39±9.09	57.46±8.68	60.43±9.94	60.02±9.44
Female	1,125 (99.6)	410 (99.8)	163 (99.4)	374 (98.4)
Rural residence	292 (25.9)	113 (27.5)	43 (26.2)	142 (37.4)
Hispanic, Latina, or Spanish origin	39 (3.5)	12 (2.9)	3 (1.8)	9 (2.4)
Race*				
American Indian or Alaska Native	19 (1.7)	14 (3.4)	3 (1.8)	8 (2.1)
Asian	60 (5.3)	11 (2.7)	8 (4.9)	11 (2.9)
Black or African American	14 (1.2)	0 (0.0)	2 (1.2)	2 (0.5)
Native Hawaiian or Pacific Islander	4 (0.4)	1 (0.2)	0 (0.0)	1 (0.3)
White	1,060 (93.9)	397 (96.6)	153 (93.3)	365 (96.1)
Another race	23 (2.0)	5 (1.2)	6 (3.7)	10 (2.6)
MRS score†				
Composite	11 (6–15)	14 (9–19)‡	13 (10–17.5)‡	16.5 (12–22)‡
Somatic domain	4 (3–6)	5 (3–7)‡	5 (3–7)‡	6 (4–8)‡
Psychological domain	4 (1–6)	5 (2–7)‡	4 (2–7)§	6 (3–8)‡
Urogenital domain	2 (1–4)	4 (2–6)‡	4 (2–6)‡	5 (3–7)‡
Patient reported				
Asked by health care professional about menopause in the past 2 y	437 (39.3)	152 (37.4)	56 (34.8)	132 (35.4)
Receiving treatment for menopause symptoms	349 (30.9)	124 (30.2)	48 (29.3)	121 (31.8)
Asked by health care professional about UI in the past 2 y	295 (26.5)	164 (40.4)	66 (41.0)	166 (44.5)
Receiving treatment for UI symptoms	34 (3.0)	22 (5.4)	24 (14.6)	42 (11.1)

SUI, stress urinary incontinence; UUI, urgency urinary incontinence; MUI, mixed urinary incontinence; MRS, Menopause Rating Scale; UI, urinary incontinence.

Data are mean±SD, n (%), or median (interquartile range).

* Respondents were asked to select all that apply; percentages may not add up to 100%.

† The MRS has a total score range of 0–44 points, with each of the 11 items scored from 0 (no symptoms) to 4 (very severe symptoms). The somatic domain includes items 1–3 and 11 (0–16 points); the psychological domain includes items 4–7 (0–16 points); and the urogenital domain includes items 8–10 (0–12 points). Differences in composite (0–44) and domain-specific MRS scores across UI groups were assessed with Kruskal–Wallis tests. When significant, post hoc pairwise comparisons were performed between each UI subtype (SUI, UUI, mixed UI) and the no UI group with Dunn tests with Bonferroni correction to control the familywise error rate at 0.05.

‡ Adjusted $P<.001$.

§ Adjusted $P>.05$.

Table 2. Association Between Menopause Rating Scale Symptom Burden and Urinary Incontinence Subtype (N=2,084)

UI Subtype*	MRS Symptom Burden†	Adjusted OR (95% CI)
SUI (n=1,540)	Moderate	2.07 (1.54–2.78)‡
	Severe	3.13 (2.25–4.35)‡
UUI (n=1,293)	Moderate	2.82 (1.81–4.39)‡
	Severe	3.82 (2.30–6.32)‡
MUI (n=1,509)§	Moderate	4.29 (2.91–6.34)‡
	Severe	13.04 (8.65–19.66)‡

UI, urinary incontinence; MRS, Menopause Rating Scale; OR, odds ratio; SUI, stress urinary incontinence; UUI, urge urinary incontinence; MUI, mixed urinary incontinence.

* Each logistic regression model compares individuals with a specific UI subtype (SUI, UUI, or MUI) with those without incontinence (n=1,129, reference); individuals with other UI subtypes were excluded from each model.

† Categorized as no/mild (0–8, reference), moderate (9–16), or severe (≥17). Models were adjusted for age.

‡ $P<.001$.

§ MUI defined as Questionnaire for Urinary Incontinence Diagnosis more than 4 SUI and more than 6 UUI.

DISCUSSION

Greater menopause symptom burden, including somatic and psychological domains, was associated with UI. Although the MRS includes urogenital symptoms, the observed associations across somatic and psychological domains suggest that UI during menopause may reflect broader physiologic or psychosocial transitions, beyond those limited to the urogenital tract.[4] Integrating UI screening into menopause care may support early recognition, improve quality of life, and reduce delayed care seeking.[6,7] Brief validated instruments such as the Questionnaire for Urinary Incontinence Diagnosis and MRS may help identify individuals at high risk. The inclusion of nearly 30% rural participants also highlights the need to expand access to continence and menopause care across geographic regions.[5,8]

Limitations include the cross-sectional design, which limits causal inference, and the lack of data on hormone use, incontinence severity, prior UI treatment, and body mass index (BMI), a known confounder of both menopause symptoms and UI. The racial and ethnic homogeneity of the sample may also limit generalizability. Systemic estrogen therapy has been shown to worsen UI in randomized trials,[9] suggesting that symptom associations must be interpreted with caution in the context of hormonal exposures. These findings support a patient-centered, symptom-focused approach to midlife care and highlight the importance of integrating pelvic floor health into routine menopause discussions.[10]

REFERENCES

1. Patel U, Godecker A, Giles D, Brown H. Updated prevalence of urinary incontinence in women: 2015–2018 national population–based survey data. Female Pelvic Med Reconstr Surg 2022;28:181–7. doi: 10.1097/SPV.0000000000001127
2. Bradley C, Rovner E, Morgan M, Berlin M, Novi J, Shea J, et al. A new questionnaire for urinary incontinence diagnosis in women: development and testing. Am J Obstet Gynecol 2005; 192:66–73. doi: 10.1016/j.ajog.2004.07.037
3. Bradley C, Rahn D, Nygaard I, Barber M, Nager C, Kenton K, et al. The Questionnaire for Urinary Incontinence Diagnosis (QUID): validity and responsiveness to change in women undergoing non–surgical therapies for treatment of stress predominant urinary incontinence. Neurourol Urodyn 2010;29: 727–34. doi: 10.1002/nau.20818
4. Heinemann K, Ruebig A, Potthoff P, Schneider HP, Strelow F, Heinemann LA, et al. The Menopause Rating Scale (MRS) scale: a methodological review. Health Qual Life Outcomes 2004;2:45. doi: 10.1186/1477-7525-2-45
5. Schmidt E, Ward L, Gregory W, Cichowski S. Geographic access to urogynecology care in the United States. Urogynecology (Phila) 2024;30:829–37. doi: 10.1097/SPV.0000000000001547
6. Coyne K, Sexton C, Irwin D, Kopp Z, Kelleher C, Milsom I. The impact of overactive bladder, incontinence and other lower urinary tract symptoms on quality of life, work productivity, sexuality and emotional well-being in men and women: results from the EPIC study. BJU Int 2008;101:1388–95. doi: 10.1111/j.1464-410X.2008.07601.x
7. Duralde E, Walter L, Van Den Eeden S, Nakagawa S, Subak L, Brown J, et al. Bridging the gap: determinants of undiagnosed or untreated urinary incontinence in women. Am J Obstet Gynecol 2016;214:266.e1–9. doi: 10.1016/j.ajog.2015.08.072
8. Rodriguez M, Burns H, Schrote K, Cichowski S, Adams K. Association of insurance type with unmet need for menopause care in Oregon. Menopause 2024;31:1062–8. doi: 10.1097/GME.0000000000002437
9. Hendrix S, Cochrane B, Nygaard I, Handa V, Barnabei V, Iglesia C, et al. Effects of estrogen with and without progestin on urinary incontinence. JAMA 2005;293:935–48. doi: 10.1001/jama.293.8.935
10. Management of menopausal symptoms. Practice Bulletin No. 141 [published errata appear in Obstet Gynecol 2016;127:166, and Obstet Gynecol 2018;131:604]. American College of Obstetricians and Gynecologists. Obstet Gynecol 2014;123:202–16. doi: 10.1097/01.AOG.0000441353.20693.78

PEER REVIEW HISTORY

Received February 15, 2025. Received in revised form May 3, 2025. Accepted May 8, 2025. Peer reviews and author correspondence are available at http://links.lww.com/AOG/E205.