

## TOILETING BEHAVIOURS IN COMMUNITY-DWELLING WOMEN: A WEB-BASED QUESTIONNAIRE

### Hypothesis / aims of study

Toileting behaviours may have implications on bladder health. In 2011 an 18-item Web-based Toileting scale (TB-WEB) was developed and found to have reliability and validity when assessing urinary elimination in community-dwelling middle-aged women [1]. We have since updated the questionnaire to include eight additional questions regarding position preferences for voiding. The position preference survey items are accompanied by pictorial descriptions of different toileting positions. The primary aim of this study is to describe self-reported toileting behaviours in community-dwelling women. Secondary aims were to determine if the frequency of toileting behaviours differs in women with and without urinary incontinence (UI) and to determine the frequency of pad usage in women with and without lower urinary tract symptoms (LUTS).

### Study design, materials and methods

The revised questionnaire consists of a 26-item scale divided into 5 subscales including; premature voiding (5-items), strained voiding (5-items), place preference for voiding (4-items), delayed voiding (4-items) and position preference for voiding (8-items). "When I am at my home, I empty my bladder even when I do not feel the need to urinate" is an example of a premature voiding subscale item. "I push down in order to empty my bladder" is an item in the strained voiding subscale. A sample of place preference for voiding is as follows: "I try to avoid using public toilets." "I will delay emptying my bladder when busy" and "At home, I sit on the toilet" are items from the delayed voiding and position preference for voiding subscales respectively. We also evaluated socio-demographic factors including age, ethnicity, race, marital status, self-health rating, pregnancies, number and route of live births, post-menopausal status and body mass index (BMI). We evaluated the International Consultation on Incontinence Modular Questionnaire-Urinary Incontinence Short Form (ICIQ-SF), the International Consultation on Incontinence Questionnaire Overactive Bladder Short Form (OAB-SF), constipation and absorbent product usage. The questionnaire was uploaded to Qualtrics, a web-based survey software, and distributed via mass email to female employees of a large public university. Returned surveys were excluded if > 50% of the TB-WEB questions were not completed. UI was based on first question of the ICIQ-SF, and was defined as any UI whether monthly, weekly or daily.

### Results

The online survey was administered from February 1, 2016 to March 2, 2016 with one reminder email sent two weeks after the survey's initial release date. Two hundred and sixteen women responded to the survey, and 188 women were included in the final analysis based on completing at least half of TB-WEB items. The majority of responders were white, non-Hispanic (82.4%), had a mean age of 47 ( $\pm$  13.6), married (51.1%), had an average BMI of 27.8mg/kg<sup>2</sup> and rated themselves to be in good or excellent health (58.5%) (Table 1). Table 1 also describes the UI status of these women. Toileting behaviour responses were assessed on a Likert scale, and the responses were divided into two categories by combining never and rarely versus sometimes, often and always. Frequent toileting behaviours for all responders include: emptying their bladder before leaving home (79.8%), delaying bladder emptying when busy (41.5%), worrying about cleanliness when using public toilets (40.4%) and pushing down on their bladder to empty faster (38.3%). Ninety-eight percent of women always sit on the toilet at home and 58.5% of women report crouching or hovering over the toilet sometimes, often or always when away from home. Sixty-seven percent (n=126) reported UI with 17% having daily incontinence episodes. UI was more common in women who were white, married, had prior pregnancies, and post menopausal ( $p=0.01$ ,  $p=0.001$ ,  $p=0.03$ ,  $p=0.01$  respectively). When comparing women with UI to those without, significant differences were found in the place preference, premature voiding, delayed voiding TB-WEB subscales (Table 2). There were no significant differences in toileting position preference in women with UI. In women with UI, 24.6% often/always used absorbent products compared to 1.6% without UI ( $p<0.001$ ).

### Interpretation of results

An updated online survey of employed community-dwelling women of varying ages was used to identify toileting behaviours and their impact on voiding. The findings revealed that most respondents were concerned about public toilet cleanliness and often or always empty their bladders prior to leaving home. Women sit directly on the toilet seat when at home although many frequently hover over the toilet when away from home. Women with UI were found to have significant differences in place preference and engage in premature and delayed voiding. There were no significant differences in preferred toileting positions, at home or away from home, in women with and without UI.

### Concluding message

Toileting behaviours may have a significant effect on the bladder over a woman's lifespan. Understanding how and why women participate in certain behaviours related to toileting may assist in the evaluation and treatment of lower urinary tract symptoms.

Table 1: TB-WEB Socio-Demographics in Women with and Without UI

	Total UI n=188	No UI n=62	Any UI n=126	p value
Age (mean ± SD)	47.0 ±13.6	41.4 ± 13.1	49.8 ±13.0	<0.001
BMI (mean ± SD)	27.9 ± 6.7	25.2 ± 5.9	29.2 ± 6.7	<0 .001
Non-Hispanic	179 (95.2%)	60 (96.8%)	119 (94.4%)	0.48
White Race	155 (82.4%)	45 (72.6%)	110 (87.3%)	0.01
Marital status				
Married	96 (51.3%)	27 (44.3%)	69 (54.8%)	<0.001
Separated	43 (23.0%)	8 (13.1%)	35 (27.8%)	
Single	48 (25.7%)	26 (42.6%)	22 (17.5%)	
Self-Health Rating				
Excellent	65 (34.6%)	29 (46.8%)	36 (28.6%)	0.05
Good	110 (58.5%)	28 (45.2%)	82 (65.1%)	
Fair	12 (6.4%)	5 (8.1%)	7 (5.6%)	
Poor	1 (0.5%)	0 (0.0%)	1 (0.8%)	
Pregnancies				
0	86 (45.7%)	36 (58.1%)	50 (39.7%)	0.03
1-5	98 (52.1%)	24 (38.7%)	74 (58.7%)	
6+	4 (2.1%)	2 (3.2%)	2 (1.6%)	
Postmenopausal	86 (45.7%)	19 (30.6%)	67 (53.2%)	0.01
Constipation	64 (34.0%)	21 (33.9%)	43 (34.1%)	0.97

Data presented as n\_(%)

p value compares women with and without UI

Table 2: Statistically Significant TB-WEB Survey Items in Women With and Without UI

TB-WEB Subscale	Survey Item	Response	No UI n=62	Any UI n=126	p Value
Place Preference	<i>When I am away from home, I try to hold my urine until I get home</i>	Never/Rarely	34 (54.8%)	89 (70.6%)	0.03
		Sometimes/Often/Always	28 (45.2%)	37 (29.4%)	
Premature Voiding	<i>When I am away from my home, I empty my bladder even when I do not feel the need to urinate</i>	Never/Rarely	56 (90.3%)	96 (76.2%)	0.02
		Sometimes/Often/Always	6 (9.7%)	30 (23.8%)	
Delayed Voiding	<i>I wait to empty my bladder until I feel I cannot hold my urine any longer</i>	Never/Rarely	41 (66.1%)	61 (48.4)	0.02
		Sometimes/Often/Always	21 (33.9%)	65 (51.6%)	
	<i>I wait too long when I have to empty my bladder at work</i>	Never/Rarely	44 (71%)	66 (52.4%)	0.02
		Sometimes/Often/Always	18 (29.0%)	60 (47.6%)	

Data presented as n\_(%)

p value compares women with and without UI

#### References

1. Wang, K. and M.H. Palmer, Development and validation of an instrument to assess women's toileting behavior related to urinary elimination: preliminary results. Nurs Res, 2011. 60(3): p. 158-64.

#### Disclosures

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**Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** This study was submitted to the University of North Carolina at Chapel Hill Institutional Review Board and ruled as exempt from IRB approval **Helsinki:** Yes **Informed Consent:** Yes