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LOWER URINARY TRACT SYMPTOMS, QUALITY OF LIFE AND FALLS RISK AMONG OLDER WOMEN RECEIVING HOME SUPPORT

Hypothesis / aims of study
Lower urinary tract symptoms (LUTS), particularly the symptoms of overactive bladder syndrome (OAB), are common in older adulthood and associated with falls and reduced quality of life (QoL). Despite this, little research has been undertaken in potentially vulnerable populations such as older women needing in-home care services. The research question in this study was: Among older women receiving in-home care services at home or in assisted living, what is the relationship between LUTS and fall risk and between urinary related QoL and fall risk?

Study design, materials and methods
As part of a longitudinal cohort study of LUTS and falls risk, one hundred women were recruited through home care case managers and assisted living facility nurse practitioners. Inclusion criteria: female, age 70 years and older, able to comprehend English and give informed consent to participate. Exclusion criteria: indwelling or intermittent catheterization, mobility limited to wheelchair or bed-bound. Falls risk was measured by the Timed Up and Go (TUG) test [1]. Older adults taking more that 14 seconds to complete the TUG are at risk for falls. LUTS and related QoL were measured by the International Consultation on Incontinence Questionnaire Female Lower Urinary Tract Symptoms (ICIQ-FLUTS), a 12 item questionnaire [2] measuring female lower urinary tract symptoms and the impact of those symptoms on quality of life (bothersomeness). We derived an overactive bladder syndrome (OAB) score and OAB related QoL score from the ICIQ-FLUTS using questions matching the ICIQ-OAB instrument. Participants were visited in their home by the research assistant who collected demographic data, a brief health/falls history and conducted the TUG. She then asked participants the questions on the ICIQ-FLUTS. Data were analyzed using PASW Statistics 18 software. Descriptive statistics were used to summarize the demographic and health data. As none of the TUG or LUTS data were normally distributed, we used the non-parametric Spearman Rank-Order Correlation Coefficient to examine associations between variables. A p-value of 0.05 or less was considered significant.

Results
203 women were referred to the study, with 104 agreeing to participate. Four dropped out (3 unable to complete TUG/ICIQ questionnaire, and 1 family objection), leaving a final sample of 100. Mean age of participants was 84.3 years (SD 7.09). Thirty-five reported falling in the 6 months prior to enrolment. Eighty-six received homecare services at least daily, with the most common services being medication prompting and assistance with bathing. Twenty-three also reported receiving daily assistance with dressing. Mean scores on the TUG and ICIQ-FLUTS are summarized in Table 1. Reporting of specific OAB related symptoms are in Table 2. Rank correlations (r_s) between variables, r_s^2 and levels of significance are presented in Table 3. All correlations were significant.

Table 1 TUG, ICIQ-FLUTS, QoL and OAB scores N=100

	Mean	SD	Range
TUG (in seconds) (>14 = falls risk)	27.21	14.15	10-93
ICIQ-FLUTS total score (0-48)*	9	6.93	0-28
ICIQ-FLUTS QoL total score (0-120)**	9.67	16.54	0-70
OAB score (0-16)***	4.06	2.95	0-16
OAB related QoL score (0-40)****	4.6	7.70	0-30

*0 = no symptoms, 48 = severe storage/voiding symptoms
** 0 = not at all bothered, 120 bothered a great deal
*** 0 = no OAB symptoms, 16 = severe OAB symptoms
**** 0 = not at all bothered, 40 = bothered a great deal).

Table 2 OAB symptoms from ICIQ-FLUTS N=100

OAB symptoms	Mean	SD	Mode	Range
Nocturia (times up at night)	1.51	1.25	1	0-4
Frequency (daytime)	0.28	0.73	0	0-4
Urgency	1.02	1.24	0	0-4
Urgency incontinence	1.25	1.20	0	0-4

Table 3 Rank correlations N=100

Variables tested	Spearman's rho (r_s)	r_s^2	p

TUG and ICIQ-FLUTS	0.33	0.10	< .000
TUG and OABS	0.25	0.06	.005
TUG and ICIQ-FLUTS QoL	0.33	0.10	<.000
TUG and ICIQ OAB related QoL	0.31	0.10	.002
ICIQ-FLUTS and QoL	0.54	0.29	<.000

Interpretation of results

Mean TUG score was high, reflecting high falls risk among participants. Although statistically significant, the associations between the TUG scores and the symptom scores (ICIQ-FLUTS and derived OABS) as well as the TUB and QoL scores were weak, and explained only a small portion of variance. This may reflect the multifocal nature of falls etiology and although small, the association between LUTS and falls risk has clinical relevance. An alternate explanation may be instrumentation. Self reported prevalence of LUTS, specifically prevalence OAB symptoms, and severity of those symptoms was low given the age and gender of the participants. This may due to difficulty participants had in understanding the ICIQ-FLUTS items and responses. There was a discrepancy between verbal description of prevalence of bladder concerns and impact on quality of life provided to the research assistant by participants in conversation and the quantification of these when answering the items. This brings into question the utility of the tool for this population. Further evidence of this is seen in the very modest correlation of symptoms and impact on quality of life. It might be that a more sensitive approach to assessing the association of OAB and falls risk would be to use prospectively completed bladder diaries. As well a measure of falls risk that incorporates divided attention, such as the duel task TUG, may be more specific as rushing to the bathroom might involve divided attention (walking and avoidance of incontinence).

Concluding message

There are weak, but potentially clinically relevant correlations of falls risk with LUTS and OAB in this sample of older women needing in-home care. Future studies should focus on women with known OAB and/or falls risk in order to further examine this relationship. Such studies need to include other falls risk factors to determine the proportion of variance accounted for by urinary symptoms, as well use bladder diaries and falls risk measures incorporating divided attention as part of the data collection. Studies to validate the appropriateness of the ICIQ-FLUTS for use among older women are needed.

References

1. Shumway-Cook A, Brauer S, Woollacott M. Predicting the probability for falls in community-dwelling older adults using the Timed Up & Go Test. Physical Therapy, 2000;80:896-903.
2. Jackson S, Donovan J, Brookes S, Eckford S, Swithinbank L, Abrams P. The Bristol female lower urinary tract symptoms questionnaire: Development and psychometric testing. British Journal of Urology, 1996;77:805-12.

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Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**