

# Correlating Subjective Patient Perception with Quantified Symptom Scores in Patients with Lower Urinary Tract Symptoms (LUTS)

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## Introduction / Background

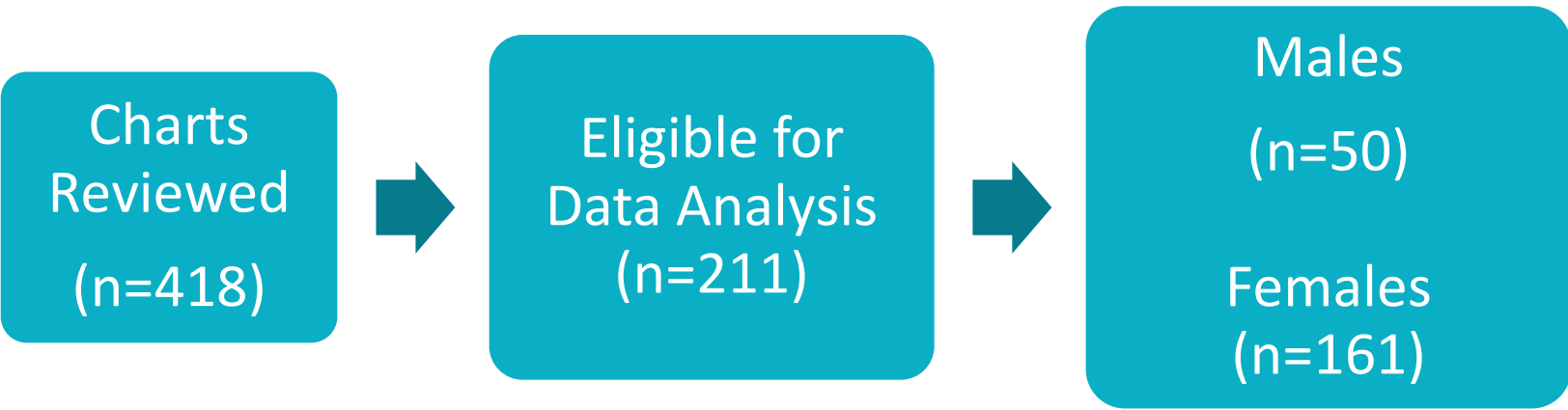
Lower urinary tract symptoms (LUTS) are a common, yet significant cause of morbidity and impairments to quality of life amongst geriatric patients. Multiple validated scoring systems exist which describe LUTS. Key amongst these are the International Consultation on Incontinence Questionnaire Lower Urinary Tract Symptoms (ICIQ-LUTS), which documents quantitative frequencies of LUTS, as well as the Patient Perception of Bladder Scale (PPBC) Score which assesses patients’ subjective global perception of symptoms. Despite the abundance of validated questionnaires, there is currently no consensus on how to stratify and correlate the ICIQ-LUTS with patients’ own perceptions of mild, moderate, or severe symptoms.

## Aims

- to stratify objective frequencies of LUTS (measured by individual elements of the sex-specific ICIQ-LUTS Questionnaire) against patients’ subjective global perception of their LUTS (assessed using the PPBC Scale).
- to identify which symptoms, or clusters of symptoms, contributed most to a patient’s global perception of LUTS.

## Method

We undertook a retrospective chart review of adult patients who attended a referral Continence Clinic between August 2019 and June 2021. Patient charts were consecutively reviewed, and for each study participant, we recorded their responses to both the ICIQ-LUTS Questionnaire and the PPBC.



Under guidance from a statistician, cross-tabulation was done for PPBC and each individual ICIQ-LUTS questionnaire items to assess independence. Chi-Squared Statistics and Spearman’s Rank Correlation Coefficient were calculated for each ICIQ-LUTS and PPBC pairs.

## Results

- The most commonly reported PPBC Score (subjective global measure of LUTS) was “4 – my bladder condition causes me **moderate** problems.”
- Amongst males, statistically significant correlations were observed between the PPBC and three of the ICIQ-LUTS questionnaires.
- Amongst females, there were statistically significant correlations between PPBC Scores and ICIQ-LUTS questions describing “storage” and “incontinence” symptoms, but not “voiding” symptoms. Statistically significant correlations were also observed between PPBC Scores and most “bother” questions describing storage, voiding, and incontinence symptoms.

Score	Statement
1	My bladder condition does not cause me any problems at all.
2	My bladder condition causes me some very minor problems.
3	My bladder condition causes me some minor problems.
4	My bladder condition causes me (some) moderate problems.
5	My bladder condition causes me severe problems.
6	My bladder condition causes me many severe problems.

Figure 1 – Question and scores from the Patient Perception of Bladder Condition (PPBC) Scale.

	X <sup>2</sup> Significance (p-value)	Spearman's rank correlation coefficient	Spearman's ρ Significance (p-value)	
f2a. During the night, how many times do you have to get up to urinate, on average?	0.017	0.230	0.003	Storage Symptoms
f2b. How much does this bother you?	<0.001	0.504	<0.001	
f3a. Do you have a sudden need to rush to the toilet to urinate?	<0.001	0.479	<0.001	
f3b. How much does this bother you?	<0.001	0.549	<0.001	
f4a. Do you have pain in your bladder?	0.471	0.223	0.005	
f4b. How much does this bother you?	0.441	0.258	0.002	
f5a. How often do you pass urine during the day?	0.322	0.230	0.005	
f5b. How much does this bother you?	<0.001	0.536	<0.001	Voiding Symptoms
f6a. Is there a delay before you can start to urinate?	0.249	-0.001	0.994	
f6b. How much does this bother you?	0.002	0.411	<0.001	
f7a. Do you have strain to urinate?	0.758	0.134	0.101	
f7b. How much does this bother you?	0.004	0.414	<0.001	
f8a. Do you stop and start more than once while you urinate?	0.084	0.246	0.002	
f8b. How much does this bother you?	0.025	0.424	<0.001	
f9a. Does urine leak before you can get to the toilet?	<0.001	0.559	<0.001	Incontinence Symptoms
f9b. How much does this bother you?	<0.001	0.568	<0.001	
f10a. How often do you leak urine?	<0.001	0.549	<0.001	
f10b. How much does this bother you?	<0.001	0.588	<0.001	
f11a. Does urine leak when you are physically active, exert yourself, cough or sneeze?	0.040	0.363	<0.001	
f11b. How much does this bother you?	<0.001	0.446	<0.001	
f12a. Do you ever leak urine for no obvious reason and without feeling that you want to go?	0.030	0.399	<0.001	
f12b. How much does this bother you?	0.057	0.443	<0.001	
f13a. Do you leak urine when you are asleep?	0.076	0.337	<0.001	
f13b. How much does this bother you?	0.049	0.454	<0.001	

Figure 2 – Cross-Tabulation results between PPBC & ICIQ-LUTS Scores in Female participants.

## Conclusion

Our findings suggest that, amongst female patients experiencing LUTS, increasing frequencies of storage- and incontinence-related symptoms correlated with patients’ global perception of greater severity in their urinary incontinence (UI). Variations in the frequency of voiding-related symptoms did not correlate significantly with patients’ global perception of greater severity of UI. From this, we believe that female patients experiencing more frequent storage- and incontinence-related LUTS are likely to report their UI as globally more severe.

We believe the lack of statistically significant correlations in male respondents were due to the small sample size (n=50).

The overall sample size was also insufficient for any meaningful stratification of ICIQ-LUTS scores with PPBC in both males and females.

This study helped identify that female patients are likely to find storage- and incontinence-related LUTS as the greater contributors to their overall perception of LUTS, and voiding-related symptoms as being relatively unrelated to their LUTS.

