

Comparative Study of Diagnostic Value of IPSS and BFLUTS Voiding Scores in Women with Urodynamically Proven Voiding Dysfunction: A Prospective Study

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Abstract: Female voiding dysfunction is a clinically significant yet underrecognized condition characterized by impaired bladder emptying. Urodynamic studies remain the gold standard but are invasive. This prospective study included 100 women with urodynamically proven dysfunction. Both IPSS and BFLUTS showed good symptom correlation but limited diagnostic accuracy. IPSS demonstrated higher sensitivity (30.8%) compared to BFLUTS (15.4%). ROC analysis revealed poor discrimination. These tools are useful for screening but cannot replace urodynamic studies.

Keywords: Female Voiding Dysfunction, Bladder Emptying, IPSS, BFLUTS, Urodynamic Studies

1. Introduction

Female lower urinary tract symptoms (LUTS) significantly impact quality of life. Voiding dysfunction includes hesitancy, weak stream, intermittency, and incomplete emptying. The prevalence ranges from 2.7% to 23%. Etiology includes detrusor underactivity, bladder outlet obstruction, and pelvic floor dysfunction. Urodynamic studies are the gold standard but invasive. Symptom-based tools such as IPSS and BFLUTS provide non-invasive assessment but their diagnostic accuracy remains uncertain.

2. Materials and Methods

Prospective study conducted at GSVM Medical College, Kanpur. 100 female patients aged 18–60 years with urodynamically confirmed voiding dysfunction were included. All patients completed IPSS and BFLUTS questionnaires followed by uroflowmetry, cystometry, and post-void residual urine measurement. Statistical analysis included sensitivity, specificity, predictive values, and ROC analysis.

Inclusion Criteria

- 1) Female patients aged 18–60 years
- 2) Urodynamically proven voiding dysfunction

Exclusion Criteria

- 1) Illiterate patients
- 2) Cognitive dysfunction
- 3) Psychiatric morbidity
- 4) Pelvic organ prolapse > Stage 2
- 5) Urinary tract infection

- 6) Pregnancy

3. Statistical Analysis

Data were entered into Microsoft Excel and analyzed using SPSS software. Continuous variables were expressed as mean $\pm$ standard deviation and categorical variables as frequencies and percentages. Correlation between questionnaire scores and urodynamic findings was assessed using appropriate statistical tests. A p-value <0.05 was considered statistically significant.

4. Results

Most patients presented with weak urinary stream and incomplete emptying. Bladder outlet obstruction was the most common finding. Both questionnaires showed strong correlation but limited diagnostic accuracy.

Table: Diagnostic performance of IPSS vs BFLUTS

Parameter	IPSS	BFLUTS
Sensitivity	30.8%	15.4%
Specificity	59.8%	58.6%
PPV	10.3%	5.3%
NPV	85.2%	82.3%
Accuracy	56%	53%

5. Discussion

This study highlights the poor correlation between symptom scores and urodynamic findings. Both IPSS and BFLUTS are reliable for symptom assessment but not for diagnosis.

Volume 15 Issue 9, September 2026

Fully Refereed | Open Access | Double Blind Peer Reviewed Journal

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IPSS showed slightly better performance, possibly due to focused voiding assessment. Findings are consistent with existing literature. These tools are useful for screening and triage but not definitive diagnosis.

6. Conclusion

IPSS and BFLUTS are useful screening tools but cannot replace urodynamic evaluation in female voiding dysfunction.

Increasing questionnaire score improves *clinical suspicion* and *screening utility*, but does not necessarily provide high diagnostic accuracy sufficient to replace urodynamic testing.

Higher IPSS-VS and BFLUTS-VS scores were associated with increased probability of urodynamically proven voiding dysfunction, suggesting improved screening utility with increasing symptom severity.

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