

# Diagnostic value of voiding scores of the “International prostate symptom score” and the “Bristol female lower urinary system symptoms-short form” questionnaires in women with voiding dysfunction

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## ABSTRACT

**Introduction:** We aimed to investigate the diagnostic value of International Prostate Symptom Score voiding symptom score (IPSS-VS) and Bristol Female Lower Urinary Tract Symptoms-short form voiding score (BFLUTS-VS) in female patients with urodynamically diagnosed voiding dysfunction.

**Methods:** The medical records of female patients who underwent urodynamic examination between May 2007 and November 2021 for lower urinary tract complaints were retrospectively evaluated. A total of 1858 female patients were included in the study. Patients investigated between 2007 and 2014 were asked to fill the IPSS, and patients investigated after 2015 were asked to fill the BFLUTS-SF.

**Results:** The mean age of the patients was  $49.06 \pm 0.33$  in the IPSS group and  $50.02 \pm 0.47$  in the BFLUTS group. On the pressure flow study, voiding dysfunction was found in 14.8% ( $n = 95$ ) in the IPSS group and 15.1% ( $n = 183$ ) in the BFLUTS group. The area under curve value was found to be 0.58 for IPSS and 0.64 for BFLUTS. Threshold values were found as  $>9$  for IPSS-VS and  $>4$  for BFLUTS-VS. The sensitivity, specificity, false negative, and false positive rates for IPSS-VS were 33.3%, 78.8%, 66.7%, and 21.2%, respectively. The same parameters were 45.5%, 78.9%, 54.5%, and 21.1% for BFLUTS-VS, respectively.

**Conclusion:** The diagnostic performance of both the questionnaires was found to be low for diagnosing voiding dysfunction in female patients according to our data. Therefore, the assessment of the voiding phase in women should not solely rely on the current questionnaires. However, further studies using questionnaires including all voiding symptoms are required.

## INTRODUCTION

Female voiding dysfunction is defined as “symptoms and urodynamic investigations as abnormally slow and/or incomplete micturition, based on abnormally slow urine flow rates and or abnormally high post-void residuals, ideally on repeated measurement to confirm abnormality” by the International Continence Society (ICS) and the International Society of Urogynecology.<sup>[1]</sup> In a study, the prevalence of voiding

dysfunction was found to be 12.8% in female patients with lower urinary tract symptoms (LUTS)<sup>[2]</sup> and it varies between 2.7% and 23%.<sup>[2,3]</sup>

Female voiding dysfunction can be caused by detrusor underactivity or functional or anatomical outlet obstruction. In women, the symptoms of voiding dysfunctions are not very specific and the voiding and storage symptoms may coexist, making the diagnosis difficult. Studies have shown

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that the prognostic value of voiding symptoms in predicting the voiding dysfunction is poor.<sup>[1-3]</sup> In one study, hesitancy, poor stream, and intermittency were found as predictors of voiding dysfunction in women however, straining to void and sensation of incomplete bladder emptying or the need to re-void were not found to be associated with voiding dysfunction.<sup>[4]</sup>

Questionnaires evaluating the lower urinary tract complaints in women focus mainly on the storage symptoms (urinary incontinence). Voiding phase symptoms are a subdomain in the lower urinary tract questionnaires and there is no questionnaire that solely addresses the voiding dysfunction. “International Prostate Symptom Score” (IPSS)<sup>[5]</sup> and “Bristol Female LUTS Questionnaire” (BFLUTS)<sup>[6]</sup> are commonly used to evaluate the lower urinary tract complaints and IPSS has been validated for women as well.<sup>[7]</sup>

In our study, we aimed to investigate the diagnostic value of IPSS voiding symptom score (IPSS-VS) and BFLUTS-short form voiding score (BFLUTS-VS) in female patients with urodynamically proven voiding dysfunction.

## MATERIALS AND METHODS

The medical records of 2614 female patients above the age of 18 years who underwent urodynamic examination (cystometry and pressure flow study) between May 2007 and November 2021 for the evaluation of lower urinary tract complaints were retrospectively evaluated. Illiterate patients, patients with cognitive impairment or psychiatric morbidity, patients with neurogenic lower urinary tract dysfunction, patients with pelvic organ prolapse greater than stage 2, and patients who were unable to void during the pressure flow study were excluded from the study. A total of 1858 patients with complete data and meeting the study criteria were included in the study. Our study was approved by the Local Ethics Committee (No: 2021/514/214/7, Date: November 30, 2021). The study was designed in accordance with the Declaration of Helsinki.

Patients who underwent urodynamic examination between 2007 and 2014 were asked to complete the IPSS, and patients who underwent urodynamic examination between 2015 and 2021 were asked to fill out the BFLUTS-SF. “Overactive bladder screening form”<sup>[8]</sup> and “International Consultation on Incontinence Questionnaire-Short Form”<sup>[9]</sup> were completed in all the patients. In addition, bladder diary (3 days), pad test (1 h), pelvic physical examination (pelvic organ prolapse staging-POPQ, pelvic muscle activity-oxford grading), Q-type test, urinalysis, urine culture, free uroflowmetry and post-void residual urine volume measurement, cystometry, and pressure-flow study were performed. All patients were examined by the same trained urologist.

The methods, definitions, and units conform to the standards jointly recommended by the International Continence Society and the International Urogynecological Association, except where specifically noted.<sup>[1]</sup> Medical measurement system (MMS) solar system urodynamic device (MMS, Enschede, The Netherlands) was used for the urodynamic examination. Pressure measurements were performed using an air-charged 7 Fr double-lumen bladder catheter and a 7 Fr rectal catheter (T-doc, Laborie, Canada). All patients underwent free-flow uroflowmetry prior to the invasive urodynamic procedure. The amount of residual urine was recorded at the beginning of the procedure. The bladder was filled (body weight/4 mL/min) with sterile saline at room temperature during cystometry with the patient in the sitting position. Bladder, abdominal and detrusor pressures, urinary flow rate, and superficial sphincter electromyography (EMG) were recorded simultaneously. Sensation, bladder capacities, compliance, detrusor activity, and the outlet function were evaluated. The pressures at the time of Valsalva maneuver incontinence were assessed with the patient in the sitting or the standing position and the bladder filled with 150 cc of saline. If no incontinence occurred, the Valsalva maneuver was repeated every 100 mL thereafter until incontinence was observed. At this time, attention was paid to the presence of detrusor overactivity. For provocation, the sound of running water was listened to, the intravesical catheter was manipulated and the patient was made to stand up.

The pressure-flow study was performed with the patient in the sitting position after achieving the maximum cystometric capacity. The patient was left alone in the urodynamic laboratory and was asked to urinate. Meanwhile, the bladder, abdominal and detrusor pressures, urine flow rate, and the superficial sphincter EMG were recorded simultaneously. In the pressure-flow study, the residual amount of urine in the bladder was also recorded.

In the current study, patients with  $p_{det}Q_{max}$  higher than 25 cmH<sub>2</sub>O and a  $Q_{max}$  lower than 12 mL/s were considered as having an outlet obstruction,<sup>[10]</sup> and patients with “Projected isovolumetric pressure” (PIP1) values <30<sup>[11]</sup> and/or Watts factor <7 were considered as having detrusor underactivity.<sup>[12]</sup> Voiding characterized by intermittent or staccato flow patterns due to involuntary and intermittent pelvic floor contractions was considered as dysfunctional voiding. Endoscopic and radiologic investigations were performed in all the patients in whom an outlet obstruction was detected. Anatomical and functional outlet obstructions were considered as obstructed.

### Statistical analysis

Patients’ data were presented as percentage, mean ± standard error of the mean (SEM). Normality testing (D’Agostino and Pearson) was performed to determine whether the data followed a Gaussian distribution or not. ANOVA test was used to compare three or more groups. Spearman correlation

analysis was used to evaluate the correlation. Receiver operating characteristic analysis was used to define the cutoff limit. Statistical calculations were performed using MedCalc® Version 20.218-64-bit software (<https://www.medcalc.org> free trial version).  $P < 0.05$  was considered statistically significant.

## RESULTS

The mean age of the patients was  $49.06 \pm 0.33$  years in the IPSS group and  $50.02 \pm 0.47$  years in the BFLUTS group. The mean body mass index was  $30.26 \pm 0.20$  in the IPSS group and  $30.47 \pm 0.26$  in the BFLUTS group. Cystometry findings of the patients are given in Table 1. The most common storage problem in both the groups was stress urinary incontinence.

The pressure-flow study findings of the patients are given in Table 2. On the pressure flow study, voiding dysfunction was found in 14.8% ( $n = 95$ ) patients in the IPSS group and 15.1% ( $n = 183$ ) in the BFLUTS group. Dysfunctional voiding accounted for 80% of the patients with an outlet obstruction [Table 2].

The mean values of IPSS-VS and BFLUTS-VS of the patients according to the pressure-flow study findings are given in Table 3. The mean IPSS-VS scores of patients with abnormalities on the pressure-flow study were  $8.26 \pm 0.23$  and  $4.87 \pm 0.34$  in the IPSS and BFLUTS groups, respectively. Mean IPSS-VS values were found to be statistically significantly different between those with normal and abnormal pressure-flow studies ( $P = 0.0004$ ). In the BFLUTS group, there was a statistically significant difference between the patients with normal and abnormal pressure-flow studies in terms of mean BFLUTS-VS values ( $P < 0.0001$ ) [Table 3].

Correlation analysis revealed a weak positive correlation between IPSS-VS ( $r = 0.102$ ,  $P = 0.0004$ , 95% confidence interval [CI] =  $-0.044-0.159$ ) and BFLUTS-VS ( $r = 0.223$ ,  $P = < 0.0001$ , 95% CI =  $0.146-0.298$ ) and the findings of pressure flow studies.

The diagnostic evaluation results of IPSS-VS and BFLUTS-VS are shown in Figure 1. The area under curve value was found to be 0.58 for IPSS and 0.64 for BFLUTS. Threshold values were found as  $>9$  for IPSS-VS and  $>4$  for BFLUTS-VS. The sensitivity, specificity, false negative, and false positive rates for BFLUTS-VS were 45.5%, 78.9%, 54.5%, and 21.1%, respectively. On the other hand, the sensitivity, specificity, false negative, and false positive rates for IPSS-VS were found as 33.3%, 78.8%, 66.7%, and 21.2%, respectively.

## DISCUSSION

The voiding symptoms in the IPSS score are hesitancy, intermittency, weak stream, and incomplete voiding<sup>[13]</sup>

**Table 1: Distribution of cystometry findings of International Prostate Symptom Score and Bristol Female Lower Urinary Tract Symptoms Questionnaire groups**

Cystometry	IPSS group, n (%)	BFLUTS group, n (%)
Normal	118 (9.7)	75 (11.7)
Stress urinary incontinence	530 (43.6)	251 (39.0)
Detrusor overactivity	274 (20.6)	148 (23.0)
Mixed urinary incontinence	293 (24.1)	169 (26.3)
Total	1215 (100)	643 (100)

IPSS=International Prostate Symptom Score, BFLUTS=Bristol Female Lower Urinary Tract Symptoms Questionnaire

**Table 2: Distribution of pressure-flow study findings in Bristol Female Lower Urinary Tract Symptoms Questionnaire and International Prostate Symptom Score groups**

Pressure-flow study	IPSS group, n (%)	BFLUTS group, n (%)
Normal	1032 (84.9)	548 (85.2)
Abnormal		
Outlet obstruction	113 (9.3)	60 (9.3)
Detrusor underactivity	70 (5.8)	32 (5.0)
Total	1215 (100)	643 (100)

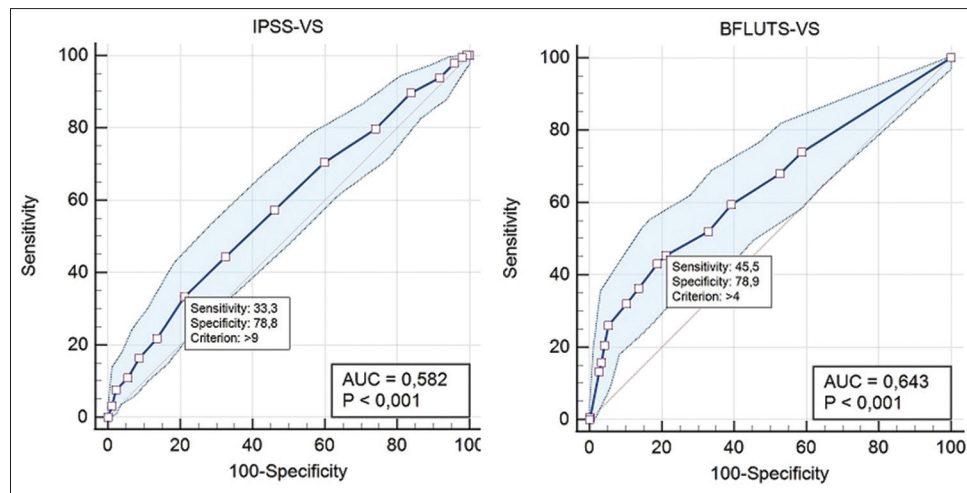
IPSS=International Prostate Symptom Score, BFLUTS=Bristol Female Lower Urinary Tract Symptoms Questionnaire

**Table 3: Mean values of International Prostate Symptom Score - voiding symptoms and Bristol Female Lower Urinary Tract Symptoms Questionnaire - voiding score according to pressure flow study findings**

Pressure-flow study	IPSS-VS	BFLUTS-VS
Normal	7.34±0.09	2.63±0.14
Abnormal		
Outlet obstruction	8.15±0.30	4.74±0.40
Detrusor underactivity	8.44±0.37	5.25±0.65
$P^*$	0.0004	<0.0001

\*ANOVA. International Prostate Symptom Score voiding symptom score (IPSS-VS), Bristol Female Lower Urinary Tract Symptoms voiding score (BFLUTS-VS)

whereas, in the BFLUTS they include hesitation, straining, and intermittent voiding. International Consultation on Incontinence Questionnaire Female Lower Urinary Tract Symptoms (ICIQ-FLUTS),<sup>[14]</sup> another questionnaire which is used to evaluate LUTS in women, was derived from BFLUTS. In BFLUTS, unlike the ICIQ-FLUTS, symptoms are grouped and these symptom groups can be scored separately. Other questionnaires that are used to assess LUTS in women include the LUTS tool,<sup>[15]</sup> the lower urinary tract dysfunction research network symptom index (LURN SI),<sup>[16]</sup> and the core lower urinary tract symptom score (CLSS).<sup>[17]</sup> The LUTS tool includes symptoms of straining to void, weak flow, spraying or splitting of the urinary stream.<sup>[15]</sup> The LURN SI-29 voiding difficulty scale includes straining, hesitancy, intermittency, weak stream, and post-void dribble. Among these questionnaires, the LURN has been developed as a tool to capture the full spectrum of LUTS with interpretable scales that can be used for outcome measurement of LUTS. However, clinical data on this questionnaire is currently insufficient.<sup>[16]</sup> The CLSS includes symptoms



**Figure 1:** Receiver operating characteristic curves for International Prostate Symptom Score voiding symptom score (IPSS-VS) and Bristol Female Lower Urinary Tract Symptoms voiding score (BFLUTS-VS)

of slow stream, straining, and a feeling of emptying the bladder incompletely.<sup>[17]</sup> The ICS recognizes hesitation, slow stream, intermittency, straining to void, spraying of urinary stream, position-dependent voiding, and dysuria as voiding symptoms.<sup>[1]</sup> However, not all of these symptoms are included in the current questionnaires. Furthermore, the voiding and the post-micturition symptoms are not separately identified in the majority of the questionnaires. In addition, the need to re-void and post-micturition leakage, which are recognized as post-micturition symptoms by the ICS,<sup>[1]</sup> are included as voiding symptoms in some of the questionnaires.

On and Ku compared the IPSS and urodynamic parameters and reported that the mean value of IPSS-VS was  $10.3 \pm 1.0$  in women <50 years and  $8.6 \pm 0.8$  in women >50 years.<sup>[18]</sup> Carlson *et al.* evaluated women with LUTS with a urodynamic study and reported that high voiding symptoms scores (12.3 points) may increase the suspicion of voiding abnormalities in women with abnormalities on the pressure flow study, although the symptoms were not specific.<sup>[19]</sup> In our study, the cutoff value for IPSS-VS was found to be nine. The cut-off value for BFLUTS-VS has been previously reported as two<sup>[13]</sup> however, in our study, it was found as >4. If we take the cutoff value as two, the sensitivity and the specificity would be 59.4% and 60.7%, respectively. In our study, a voiding phase abnormality was detected on the pressure-flow study in approximately 15% of the patients in both the groups. However, this rate was higher on both the questionnaires, i.e. questionnaires tend to have false positive results (about 21%). Some patients with storage phase problems (e.g. detrusor overactivity) may have one or more of the voiding symptoms. Indeed, it has been reported that the majority of the patients with an overactive bladder and normal post-void residuals complain of voiding symptoms.<sup>[20]</sup> The sleep quality is often

impaired in patients with overactive bladder. Therefore, determining the duration of uninterrupted sleep can help in differentiating the symptoms of overactive bladder from voiding dysfunction.<sup>[21]</sup> However, the sensitivity rates of both the questionnaires are relatively low and therefore the false negative rates are even higher. In addition, the correlation analysis showed a weak correlation between the questionnaires and the pressure flow study.

Jeffery *et al.* evaluated the relationship between voiding symptoms and uroflowmetry parameters in women and found that the symptoms of straining and slow stream were the most prominent symptoms that suggested an abnormality in the uroflowmetry parameters and an increased post-void residual.<sup>[22]</sup> In another study, no correlation was found between the IPSS voiding scores and the objective urodynamic parameters and the authors concluded that the IPSS may be useful as a bothersomeness index in women with bladder outlet obstruction however, subjective symptoms associated with bladder outlet obstruction are not specific and a complete urodynamic evaluation is necessary to make a diagnosis.<sup>[23]</sup> Similarly, in another study, no correlation was found between the degree of urodynamically proven bladder outlet obstruction and IPSS-VS.<sup>[24]</sup> However, it has been reported that an IPSS storage/voiding symptoms ratio  $\geq 1.3$  is predictive of voiding dysfunction in female patients diagnosed by uroflowmetry and pressure flow study.<sup>[25]</sup> Hubeaux *et al.* performed an uroflowmetric study in women with stress urinary incontinence and could not find a correlation between the voiding symptoms of BFLUTS questionnaire and abnormal uroflowmetric findings.<sup>[26]</sup> Kuo evaluated women with lower urinary tract dysfunction with a urodynamic study and reported that the storage and the voiding symptoms were common and that the differential diagnosis of lower urinary tract dysfunction in women cannot be based solely on the symptoms.<sup>[27]</sup> In addition to the voiding symptoms, 63%–94% of the women with

outlet obstruction may also have storage symptoms such as frequent urination and urgency.<sup>[28-30]</sup>

Although our study had sufficient number of subjects, the fact that the study was retrospective, the pressure flow study was performed once in some patients with voiding dysfunction, and the both questionnaires were not used simultaneously in the same patient group can be considered as limitations of the study.

## CONCLUSION

The diagnostic performance of both questionnaires was found to be low according to our data. Therefore, the assessment of the voiding phase in women should not solely rely on the available questionnaires. However, further studies with questionnaires including all of the voiding symptoms are required.

## REFERENCES

- Doumouchsis SK, de Tayrac R, Lee J, Daly O, Melendez-Munoz J, Lindo FM, *et al.* An International Continence Society (ICS)/International Urogynecological Association (IUGA) joint report on the terminology for the assessment and management of obstetric pelvic floor disorders. *Int Urogynecol J* 2023;34:1-42.
- Choi YS, Kim JC, Lee KS, Seo JT, Kim HJ, Yoo TK, *et al.* Analysis of female voiding dysfunction: A prospective, multi-center study. *Int Urol Nephrol* 2013;45:989-94.
- Groutz A, Gordon D, Lessing JB, Wolman I, Jaffa A, David MP. Prevalence and characteristics of voiding difficulties in women: Are subjective symptoms substantiated by objective urodynamic data? *Urology* 1999;54:268-72.
- Dietz HP, Haylen BT. Symptoms of voiding dysfunction: What do they really mean? *Int Urogynecol J Pelvic Floor Dysfunct* 2005;16:52-5.
- Barry MJ, Fowler FJ Jr., O'Leary MP, Bruskewitz RC, Holtgrewe HL, Mebust WK, *et al.* The American Urological Association symptom index for benign prostatic hyperplasia. The Measurement Committee of the American Urological Association. *J Urol* 1992;148:1549-57.
- Jackson S, Donovan J, Brookes S, Eckford S, Swithbank L, Abrams P. The Bristol female lower urinary tract symptoms questionnaire: Development and psychometric testing. *Br J Urol* 1996;77:805-12.
- Okamura K, Nojiri Y, Osuga Y, Tange C. Psychometric analysis of international prostate symptom score for female lower urinary tract symptoms. *Urology* 2009;73:1199-202.
- Coyne K, Revicki D, Hunt T, Corey R, Stewart W, Bentkover J, *et al.* Psychometric validation of an overactive bladder symptom and health-related quality of life questionnaire: The OAB-q. *Qual Life Res* 2002;11:563-74.
- Avery K, Donovan J, Peters TJ, Shaw C, Gotoh M, Abrams P. ICIQ: A brief and robust measure for evaluating the symptoms and impact of urinary incontinence. *Neurourol Urodyn* 2004;23:322-30.
- Defreitas GA, Zimmern PE, Lemack GE, Shariat SF. Refining diagnosis of anatomic female bladder outlet obstruction: Comparison of pressure-flow study parameters in clinically obstructed women with those of normal controls. *Urology* 2004;64:675-9.
- Tan TL, Bergmann MA, Griffiths D, Resnick NM. Stop test or pressure-flow study? Measuring detrusor contractility in older females. *Neurourol Urodyn* 2004;23:184-9.
- van Koeveeringe GA, Vahabi B, Andersson KE, Kirschner-Herrmans R, Oelke M. Detrusor underactivity: A plea for new approaches to a common bladder dysfunction. *Neurourol Urodyn* 2011;30:723-8.
- Barry MJ, Williford WO, Fowler FJ Jr., Jones KM, Lepor H. Filling and voiding symptoms in the American Urological Association symptom index: The value of their distinction in a Veterans Affairs randomized trial of medical therapy in men with a clinical diagnosis of benign prostatic hyperplasia. *J Urol* 2000;164:1559-64.
- Brookes ST, Donovan JL, Wright M, Jackson S, Abrams P. A scored form of the Bristol female lower urinary tract symptoms questionnaire: Data from a randomized controlled trial of surgery for women with stress incontinence. *Am J Obstet Gynecol* 2004;191:73-82.
- Brandt BA, Angün Ç, Coyne KS, Doshi S, Bavendam T, Kopp ZS. LUTS patient reported outcomes tool: Linguistic validation in 10 European languages. *Neurourol Urodyn* 2013;32:75-81.
- Cella D, Smith AR, Griffith JW, Flynn KE, Bradley CS, Gillespie BW, *et al.* A new outcome measure for LUTS: Symptoms of lower urinary tract dysfunction research network symptom index-29 (LURN SI-29) questionnaire. *Neurourol Urodyn* 2019;38:1751-9.
- Okamura K, Kimura K, Mizuno H, Okamoto N, Aota Y. Core lower urinary tract symptom score questionnaire: A psychometric analysis. *Int J Urol* 2014;21:1151-4.
- On SJ, Ku JH. Comparative study of international prostate symptom scores and urodynamic parameters in men and women with lower urinary tract symptoms. *Urol Int* 2006;76:309-13.
- Carlson KV, Fiske J, Nitti VW. Value of routine evaluation of the voiding phase when performing urodynamic testing in women with lower urinary tract symptoms. *J Urol* 2000;164:1614-8.
- Zilberlicht A, Haya N, Goldschmidt E, Feferkorn I, Lavie O, Abramov Y. Obstructive voiding symptoms in female patients with overactive bladder syndrome. *Eur J Obstet Gynecol Reprod Biol* 2019;242:12-6.
- Savoie MB, Lee KA, Subak LL, Hernandez C, Schembri M, Fung CH, *et al.* Beyond the bladder: Poor sleep in women with overactive bladder syndrome. *Am J Obstet Gynecol* 2020;222:600, e1-13.
- Jeffery ST, Doumouchsis SK, Vlachos IS, Fynes MM. Are voiding symptoms really associated with abnormal urodynamic voiding parameters in women? *Int J Urol* 2008;15:1044-8.
- Groutz A, Blaivas JG, Fait G, Sassone AM, Chaikin DC, Gordon D. The significance of the American Urological Association symptom index score in the evaluation of women with bladder outlet obstruction. *J Urol* 2000;163:207-11.
- Madersbacher S, Pycha A, Klingler CH, Schatzl G, Marberger M. The international prostate symptom score in both sexes: A urodynamics-based comparison. *Neurourol Urodyn* 1999;18:173-82.
- Hsiao SM, Lin HH, Kuo HC. International prostate symptom score for assessing lower urinary tract dysfunction in women. *Int Urogynecol J* 2013;24:263-7.
- Hubeaux K, Deffieux X, Jousse M, Amarenco G. Correlation between voiding dysfunction symptoms and uroflowmetry in women suffering from stress urinary incontinence. *Indian J Urol* 2012;28:313-7.
- Kuo HC. Clinical symptoms are not reliable in the diagnosis of lower urinary tract dysfunction in women. *J Formos Med Assoc* 2012;111:386-91.
- Nitti VW, Tu LM, Gitlin J. Diagnosing bladder outlet obstruction in women. *J Urol* 1999;161:1535-40.
- Groutz A, Blaivas JG, Chaikin DC. Bladder outlet obstruction in women: Definition and characteristics. *Neurourol Urodyn* 2000;19:213-20.
- Kuo HC. Videourodynamic characteristics and lower urinary tract symptoms of female bladder outlet obstruction. *Urology* 2005;66:1005-9.

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