Pacific University
CommonKnowledge

PT Critically Appraised Topics | School of Physical Therapy

2012

The diagnostic accuracy of patient subjective history compared to the gold standard of urodynamic testing for diagnosing genuine stress urinary incontinence (GSI)

Gina Clark
Pacific University

Lauren Murphy
Pacific University

Follow this and additional works at: http://commons.pacificu.edu/ptcats

 Part of the Physical Therapy Commons

Notice to Readers

This work is not a peer-reviewed publication. Though the author of this work has provided a summary of the best available evidence at the time of writing, readers are encouraged to use this CAT as a starting point for further reading and investigation, rather than as a definitive answer to the clinical question posed or as a substitute for clinical decision-making.

Select copyrighted material from published articles may be included in this CAT for the purpose of providing a context for an informed critical appraisal. Readers are strongly encouraged to seek out the published articles included here for additional information and to further examine the findings in their original presentation. Copyrighted materials from articles included in this CAT should not be re-used without the copyright holder's permission.

Recommended Citation

Clark, Gina and Murphy, Lauren, "The diagnostic accuracy of patient subjective history compared to the gold standard of urodynamic testing for diagnosing genuine stress urinary incontinence (GSI)" (2012). *PT Critically Appraised Topics.* Paper 33.
http://commons.pacificu.edu/ptcats/33

This Critically Appraised Topic is brought to you for free and open access by the School of Physical Therapy at CommonKnowledge. It has been accepted for inclusion in PT Critically Appraised Topics by an authorized administrator of CommonKnowledge. For more information, please contact CommonKnowledge@pacificu.edu.

The diagnostic accuracy of patient subjective history compared to the gold standard of urodynamic testing for diagnosing genuine stress urinary incontinence (GSI)

Disciplines
Physical Therapy

Rights
Terms of use for work posted in CommonKnowledge.

This critically appraised topic is available at CommonKnowledge: http://commons.pacificu.edu/ptcats/33

Critically Appraised Topic

Title: The diagnostic accuracy of patient subjective history compared to the gold standard of urodynamic testing for diagnosing genuine stress urinary incontinence (GSI).

Clinical Scenario: We wanted to determine if GSI could accurately be diagnosed in women in the outpatient physical therapy clinic with patient subjective history. If so, conservative physical therapy treatment could be started immediately, saving the patient time and money by avoiding additional visits to her physician.

Introduction: Multi-channel urodynamic testing is widely regarded as the gold standard for diagnosing urinary incontinence. However, this method is expensive and requires a referral to a urogynecologist. By eliminating this step, treatment and recovery of patients with GSI could be expedited.

Our Clinically Answerable Question: Does subjective history accurately diagnose GSI in the outpatient physical therapy clinic?

Clinical PICO

P: Women with genuine stress incontinence age 18-menopause

I: Subjective patient history

C: Multi-channel urodynamic testing (gold standard)

O: Specificity, Sensitivity and Diagnostic Accuracy

Overall Clinical Bottom Line:
Subjective history can help rule out GSI in women age 18-menopause with urinary incontinence symptoms who present to a medical practice. Question number three of the Urogenital Distress Inventory UDI6 had a sensitivity of 90.9% (confidence interval (CI) 95% is 87.6%-94.2%) and 85% (CI 95% is 78.6%-97.0%) in the Fitzgerald and Lemack articles respectively. This data shows that question number three of the UDI6 is highly sensitive in ruling out GSI in women. As reported in the Largo-Janssen article, subjective history is both sensitive at 78% (CI 95% is 70%-86%) and specific at 84% (CI 95% is 76.9%-91.1%). After review of these articles, we feel confident utilizing question number 3 from the UDI6 or the subjective history form used in the Largo-Janssen as part of an initial screening for women with urinary incontinence symptoms. These methods are accessible, inexpensive and accurate for ruling out, and potentially ruling in GSI in women in the physical therapy clinic.

Search Terms: Genuine stress incontinence, subjective history taking, diagnosis, women's health, urodynamics.

Appraised By: Gina Clark, SPT, Lauren Murphy, SPT

School of Physical Therapy
College of Health Professions
Pacific University
Hillsboro, OR 97123
clar5658@pacificu.edu, lauren.murphy@pacificu.edu

Rationale for Chosen Articles:

Author	QUADAS	Population	Diagnostic Test	Outcome Measure
Fitzgerald and Brubaker	10/14	Women aged 15-87	IIQ7 and UDI6	Mann-Whitney, Kruskal Wallis, Spearman's, chi-squared test
Largo-Janssen et al.	13/14	Women aged 20-65	Subjective History	Sensitivity, specificity, chi-squared test and predictive value
Lemack and Zimmern	10/14	Women aged 27-86	UDI6	Pearson Correlation, Fisher Exact Test, sensitivity and specificity

Table 1. Comparrison of QUADAS scores

Item	Author Fitzgerald and Brubaker	Author Largo-Janssen et al.	Author Lemack and Zimmern
1. Was the spectrum of patients representative of patients who will receive the test in practice?	Y	Y	Y
2. Were selection criteria clearly described?	N	Y	Y
3. Is reference standard likely to correctly classify target condition?	Y	Y	Y
4. Is time period between reference standard and index test short enough to be reasonably sure the target condition did not change between the 2 tests?	U	U	U
5. Did the whole sample or a random selection of the sample, receive verification using a reference standard of diagnosis?	Y	Y	Y
6. Did patients receive the same reference standard regardless of index test result?	Y	Y	Y
7. Was reference standard independent of index test?	Y	Y	Y
8. Was the execution of the index test described in sufficient detail to permit replication of the test?	Y	Y	Y

9. Was execution of the reference standard described in sufficient detail to permit its replication?	Y	Y	Y
10. Were the index test results interpreted without knowledge of the results of the reference standard?	Y	Y	N
11. Were the reference standard results interpreted without knowledge of the results of the index test?	N	Y	N
12. Were the same clinical data available when test results were interpreted as would be available when the test is used in practice?	Y	Y	Y
13. Were uninterpretable/intermediate test results reported?	Y	Y	Y
14. Were withdrawals from the study explained?	U	Y	N
Total	10/14	13/14	10/14

Article 1:
Fitzgerald, M., Brubaker, L. (2002) Urinary Incontinence Symptom Scores and Urodynamic Diagnoses. Neurology and Urodynamics 21, 30-35

Clinical Bottom Line: The UDI6 questionnaire administered to women with urinary incontinence symptoms presenting to a urogynecology practice had a 91% sensitivity and 31% specificity for diagnosing genuine stress incontinence (GSI). With a pre-test probability of .5, a positive result on the UDI6 will give a positive post-test probability of urinary incontinence of 57%. With the same pre-test probability of .5, a negative result on the UDI6 will give a negative post-test probability of urinary incontinence of 23%. Based on the above stated sensitivity and negative post-test probability, the UDI6 questionnaire is useful for ruling out GSI in women aged 15-87. This study excluded patients who were not surgical candidates; however surgical candidates could still benefit from this questionnaire within the physical therapy clinic.

Clinical PICO

P: Women with genuine stress incontinence age 18-menopause

I: Subjective patient history

C: Multi-channel urodynamic testing (gold standard)

O: Specificity, Sensitivity and Diagnostic Accuracy

Article PICO

P : 293 women 15-87 years old presenting to a urogynecology practice

I : Short forms of the Incontinence Impact Questionnaire (the IIQ7) and Urogenital Distress Inventory (UDI6)

C: Urodynamic Evaluation

O: Mann-Whitney, Kruskal Wallis, Spearman's, chi-squared test.

Representative Sample: The patients were reasonably representative of the general patient population that we would see.

Blind Comparison: There was not any blinding to the study.

Independent Reference Standard: There was no overlap between the urodynamic testing and the IIQ and UDI.

Reliability of Clinical Test and Reference Test: No reliability was mentioned in the study.

Ascertainment: All patients who took the IIQ and UDI also received urodynamic testing.

Validation in Second Independent Standard: A second independent sample is referenced by the authors.

Study: The same standard was given to all participants in the study. Two hundred ninety-three women aged 15-87 who presented to a urogynecology practice and completed the IIQ7, UDI6, answered 4 questions from the long-form UDI, and who underwent urodynamic evaluation were included in the study. Exclusion criteria included women who presented to the urogynecology practice, but did not receive urodynamic evaluation. Study participants completed the 3 quality of life questionnaires at their first visit: the IIQ7, UDI6, and 4 questions from the long form of the UDI. The women then underwent urodynamic and pelvic organ prolapse (POP) evaluation using quantification methods, definitions and units that agreed with the International Continence Society.

Summary of Internal Validity: This study has fair internal validity. The authors of the study provide information regarding the validity of the reference standard and the clinical tests. Furthermore, the reference standard was applied to all study participants. Two minor threats to internal validity were identified. First, no information regarding the blinding of the clinicians who administered the questionnaires and the clinicians who administered the urodynamic evaluation was provided. Lack of blinding could potentially lead to rater bias; however, this is unlikely in this case. Second, the authors did not provide a timeline for when the urodynamic testing occurred after the questionnaires were filled out. This detail would affect the reproducibility of the study and could potentially affect patient outcomes.

Evidence: The specificity, sensitivity, likelihood ratios, negative post-test probability and diagnostic accuracy from question three of the UDI6 are the primary outcome measures that will identify the most accurate questionnaire for predicting genuine stress incontinence. Table 1 below shows the raw data extracted from the study regarding genuine stress incontinence. Table 2 below shows our statistical analysis of the raw data in Table 1.

Table 1: Raw data extracted from the UDI6 question three concerning bother caused by the

symptom of urinary leakage caused by physical activity for genuine stress incontinence compared to the gold standard of the urodynamic evaluation for determining diagnostic accuracy.

	Reference Standard Positive	Reference Standard Negative
Clinical Positive	190	58
Clinical Negative	19	26

Table 2: Diagnostic accuracy as measured by specificity, sensitivity and predictive values.

Statistical Tests	Value
Sensitivity	0.909 (CI of 95% is 87.6%-94.2%)
Specificity	0.310 (CI of 95% is 25.7%-36.2%)
Positive Predictive Value	0.766
Negative Predictive Value	0.578
Positive Likelihood Ratio	1.32
Negative Likelihood Ratio	0.29
PreTest Probability	0.5
Positive Post-Test Probability %	57
Negative Post-Test Probability %	23
Diagnostic Accuracy	73.7%

Discussion:

The study sampled an appropriate number of symptomatic patients to validate the incontinence questionnaire against the gold standard of urodynamic testing. Patients were sampled from an appropriate spectrum, however, patients who were not surgical candidates were excluded. This exclusion elicits some concerns for applicability of results to all patients who are not surgical candidates, but do have genuine stress incontinence. Besides this concern, we find this diagnostic questionnaire to be clinically useful for patients presenting with urinary incontinence issues.

The UDI6 questionnaire has a 91% sensitivity and 31% specificity for ruling out and ruling in GSI respectively. With a pre-test probability of .5, a positive result on the UDI6 will give a positive post-test probability of urinary incontinence of 57%. With the same pre-test probability of .5, a negative result on the UDI6 will give a negative post-test probability of urinary incontinence of 23%. The confidence interval (CI) for specificity of 95% is within a range of 87.6%-94.2%. The confidence interval (CI) for sensitivity of 95% is within a range of 25.7%-36.2%. The UDI6 questionnaire is accurate 73.7% of the time.

The UDI6 is an effective and inexpensive way to determine if a patient does not have

GSI, if she has already been identified by an MD as a surgical candidate. We are comfortable extrapolating this data to a larger population of women with complaints of urinary incontinence even if they are not considered surgical candidates. Failure of conservative physical therapy treatment after positive questionnaire results would warrant referral for urodynamic testing to explore other etiologies of urinary incontinence.

Data from question three "bother with urine leakage related to activity" from the UDI6 was the only data we considered relevant for our PICO because it deals with diagnosing GSI. Furthermore, GSI can be appropriately managed by physical therapy, making it relevant to our practice.

Applicability of study results:

Similarity to my patients: The patients in this study were not necessarily representative of my patients. All of these patients were surgical candidates for the treatment of their urinary incontinence. Also the fact that these patients were being evaluated and treated by medical doctors and not physical therapist is another cause for concern.

Is the clinical test available, affordable, accurate and precise?: The test is available, affordable, accurate, and precise for ruling out GSI. The questionnaires are discussed by the authors as not being a valid tool for differentiating between causes of urinary incontinence. However, the UDI6 could feasibly be used in a physical therapy clinic for the guidance of conservative management.

Summary of external validity: No major threats to external validity were found.

Article 2:

Lagro-Janssen, ALM., Debruyne, FMJ., Van Weel, C. (1991)Value of patient case history in diagnosing urinary incontinence in general practice. British journal of Urology 67,569-572.

Clinical Bottom Line: Taking a subjective history from women with urinary incontinence symptoms who present to their general practitioner has 78% sensitivity and 84% specificity for ruling out and ruling in GSI respectively. With a pre-test probability of .5 and a positive likelihood ratio of 4.88, a positive result on the subjective history will give a post-test probability of 83%. With the same pre-test probability, and a negative likelihood ratio of 0.26, a negative result on the subjective history will give a post-test probability of 21%. Based on data from this study, taking a patient's subjective history proves to be an appropriate test for ruling in and ruling out GSI in women aged 20-65. This study included patients very similar to our desired patient population. Subjective history taking could benefit patients seeking treatment for urinary incontinence in the physical therapy clinic because subjective history taking is accessible, affordable and accurate for diagnosing GSI.

Clinical PICO

P: Women with genuine stress incontinence age 18-menopause

I: Subjective patient history

C: Multi-channel urodynamic testing (gold standard)

O: Specificity, Sensitivity and Diagnostic Accuracy

Article PICO

P : 103 women 20-65 years old presenting to a general practice

I : Patient subjective history

C: Urodynamic Evaluation

O: Sensitivity, specificity, chi-squared test and predictive value

Representative Sample: The patients were reasonably representative of the general patient population that we would see.

Blind Comparison: The general practitioners who took the subjective patient history, and the general practitioners that completed the urodynamic testing were blinded to each other's results

Independent Reference Standard: There was no overlap between the urodynamic testing and the subjective history

Reliability of Clinical Test and Reference Test: No reliability was mentioned in the study.

Ascertainment: All patients who gave a subjective history also received urodynamic testing.

Validation in Second Independent Standard: A second independent sample is referenced by the authors.

Study: The same standard was given to all participants in the study. One hundred-three women aged 20-65 who presented to their general practitioner with complaints of urinary incontinence were included in the study. Each of these participants completed a subjective history, underwent urodynamic testing, and had a physical examination. Exclusion criteria included a previous operation for incontinence, underlying neurological etiology, diabetes mellitus, a temporary cause for incontinence, or urinary tract infection. No timeline was given for the sequencing of the subjective history, physical examination or urodynamic testing. The authors of this study used the following definitions to describe specific types of incontinence: Urgency is strong desire to void; Frequency is voiding more than ten times per day; Nocturia is the need to get out of bed to void more than twice per night; Enuresis is urinating the bed over age seven.

Summary of Internal Validity: This study had good internal validity. Firstly, the authors of the study provided information regarding the validity of the reference standard and the clinical test.

Furthermore, the reference standard was applied to all study participants. Lastly, this study was observer blinded, which reduced rater bias. One minor threat to internal validity was that the authors did not provide a timeline for when the urodynamic testing occurred after the subjective history was obtained. This detail would affect the reproducibility of the study and could potentially affect patient outcomes.

Evidence: The specificity, sensitivity, likelihood ratios, post-test probabilities, and diagnostic accuracy of the subjective history are the primary outcome measures that will identify the most accurate questions to ask for predicting genuine stress incontinence. Table 1 below shows the raw data extracted from the study regarding genuine stress incontinence. Table 2 below shows our statistical analysis of the raw data in Table 1.

Table 1: Raw data extracted from the subjective history compared to the gold standard of urodynamic testing for determining diagnostic accuracy of GSI.

	Reference Standard Positive	Reference Standard Negative
Clinical Positive	47	7
Clinical Negative	13	36

Table 2: Diagnostic accuracy as measured by specificity, sensitivity and likelihood ratios.

Statistical Tests	Value
Sensitivity	0.78 (CI of 95% is 70%-86%)
Specificity	0.84 (CI of 95% is 76.9%-91.1%)
Positive Likelihood Ratio	4.88
Negative Likelihood Ratio	0.26
Pre-test Probability	0.5
Positive post-test probability	83%
Negative post-test probability	21%
Diagnostic Accuracy	73%

Discussion:

The study sampled an appropriate number of symptomatic patients to validate the subjective history against the gold standard of urodynamic testing. Patients were sampled from an appropriate spectrum, however, the sample was not randomized. All patients in the study presented to their general practitioner with urinary incontinence symptoms. Besides this concern, we find that subjective history is clinically useful for diagnosing patients presenting with urinary incontinence issues.

With specificity of 84%, we can expect a positive subjective history to rule in GSI. With a sensitivity of 78% we can expect a negative questionnaire to rule out GSI. With a pre-test probability of .5, and a positive likelihood ratio of 4.88, a positive result on the subjective history will give a post-test probability of urinary incontinence of 83%. With the same pre-test probability, and a negative likelihood ratio of 0.26, a negative result on the subjective history will give a post-test probability of 21%. The confidence interval for specificity of 95% is within a range of 76.9%-91.1%. The confidence interval for sensitivity of 95% is within a range of 70%-86%. The subjective history has a diagnostic accuracy of 73%.

Subjective history taking is an effective and inexpensive way to both rule in, and rule out GSI. Furthermore, the authors cited that the most important question in diagnosing GSI was: "Do you lose urine by spurts, during coughing, sneezing, jumping and lifting?" According to the authors, if a patient answer yes to this question, we can assume it is appropriate to treat them with pelvic floor exercises. Although this will incorrectly identify 1 in 5 patients, pelvic floor exercises are not harmful. Lack of improvement would soon be recognized, and referral for urodynamic testing would then be warranted.

Applicability of study results:

Similarity to my patients: The patients in this study were representative of my patients. Since all of the patients with complicated histories were excluded from this study, we are confident that we can apply the study results to this group of patients. The exclusion of complicated patients from this study is not a cause for concern because this exclusion enhanced internal validity of the study.

Is the clinical test available, affordable, accurate and precise? The test is available, affordable, accurate, and precise with concerns for physical therapy. Since, subjective history is already a component of a physical therapy evaluation, there is no other additional cost or time. This may be helpful in a physical therapy clinic for the guidance of conservative management.

Summary of external validity: No major threats to external validity were found.

Article 3:

Lemack, G. E., Zimmern, P. E., (1999) Predictability of Urodynamic Findings Based on the Urogenital Distress Inventory-6 Questionnaire. Urology 54, 461-466.

Clinical Bottom Line: The third question of the UDI6 questionnaire administered to women with urinary incontinence symptoms presenting to a urogynecology practice had a 85% sensitivity and 63% specificity for ruling out and ruling in GSI. With a pretest probability of 0.5 and a positive likelihood ratio of 2.32, a positive result on the UDI6 will give a positive posttest probability of GSI of 70%. With a pretest probability of 0.5 and a negative likelihood ratio of 0.24, a negative result on the UDI6 will give a negative posttest probability of 19%. Based on this data, it can be concluded that a positive result on the UDI6 will likely rule in GSI, and a negative result on the UDI6 will rule out GSI. The most relevant question on the UDI6 for our PICO was question three regarding bother caused by leakage with activity. Answering "moderately" or "greatly" to the degree of bother caused by leakage during activity on question number three proved to be an appropriate test for ruling in GSI in women aged 27-86 years old.

This study excluded patients who had known neurological diagnoses. Question three is an accessible, inexpensive and accurate way to rule in and rule out GSI in the physical therapy clinic.

Clinical PICO
P: Women with genuine stress incontinence age 18-menopause

I: Subjective patient history

C: Multi-channel urodynamic testing (gold standard)

O: Specificity, Sensitivity and Diagnostic Accuracy

Article PICO
P :128 women 27-86 years old presenting to a urogynecology practice

I : Urogenital Distress Inventory (UDI6)

C: Urodynamic Evaluation

O: Pearson Correlation, Fisher Exact Test, sensitivity and specificity.

Representative Sample: The patients were reasonably representative of the general patient population that we would see.

Blind Comparison: There was not any blinding to the study.

Independent Reference Standard: There was no overlap between the urodynamic testing and the UDI6

Reliability of Clinical Test and Reference Test: No reliability was mentioned in the study.

Ascertainment: All patients who took the UDI6 also received urodynamic testing.

Validation in Second Independent Standard: A second independent sample is referenced by the authors.

Study: The same standard was given to all participants in the study. One hundred and twenty-eight women aged 27-86 who presented to a urogynecology practice and completed the UDI6 and who underwent urodynamic evaluation were included in the study. Exclusion criteria included women who presented to the urogynecology practice, but did not receive urodynamic evaluation and women who had known neurologic diagnoses. Study participants completed the UDI6 at their initial evaluation. The women then underwent urodynamic testing using the Laborie Aquarius Urodynamics Unit from R. Laborie, Toronto, Canada.

Summary of Internal Validity: This study had fair internal validity. The authors of the study provided information regarding the validity of the reference standard and the clinical tests. Two minor threats to internal validity were identified. First, no information regarding the blinding of the clinicians who administered the questionnaires and the clinicians who administered the urodynamic evaluation was provided. Lack of blinding could potentially lead to rater bias; however, this is unlikely in this case. Second, the authors did not provide a timeline for when the urodynamic testing occurred after the questionnaires were filled out. This detail would affect the reproducibility of the study and could potentially affect patient outcomes. One other factor that may have affected internal validity was that 48 of the 111 subjects previously had vaginal surgery. This probably explains the high number of people who had obstructed voiding on urodynamic testing and may have decreased the sensitivity and specificity of the UDI6.

Evidence: The specificity, sensitivity, likelihood ratios, post-test probability and diagnostic accuracy of the UDI6 are the primary outcome measures that will identify the clinical usefulness for predicting genuine stress incontinence. Table 1 below shows the raw data extracted from the study regarding genuine stress incontinence. Table 2 below shows our statistical analysis of the raw data in Table 1.

Table 1: Raw data extracted regarding the UDI6 question concerning bother caused by the symptom of urinary leakage caused by physical activity for genuine stress incontinence compared to the gold standard of the urodynamic evaluation for determining diagnostic accuracy.

	Reference Standard Positive	Reference Standard Negative
Clinical Positive	39	30
Clinical Negative	7	52

Table 2: Diagnostic accuracy as measured by specificity, sensitivity and post-test probability.

Statistical Tests	Value
Sensitivity	0.85 (CI of 95% is 78.6%-97.0%)
Specificity	0.63 (CI of 95% is 55.1%-71.8%)
Positive Predictive Value	0.57
Negative Predictive Value	0.88
Positive Likelihood Ratio	2.32
Negative Likelihood Ratio	0.24
PreTest Probability	0.5
Positive Post-Test Probability %	70
Negative Post-Test Probability %	19
Diagnostic Accuracy	71%

Discussion:
The study sampled an appropriate number of symptomatic patients to validate the incontinence questionnaire against the gold standard of urodynamic testing. Patients were sampled from an appropriate spectrum however, patients who had known neurological disorders were excluded from this study. We agree with the authors of the study that patients with neurological conditions were not appropriate candidates to validate the UDI6 based on the format of the questionnaire. Therefore, this exclusion does not elicit much concern for applicability of results to women aged 27-86. We find this diagnostic questionnaire to be clinically useful for non-neurological patients presenting with urinary incontinence issues.

The UDI6 has a 85% sensitivity and 63% specificity for diagnosing GSI. With a pretest probability of 0.5 and a positive likelihood ratio of 2.32, a positive result on the UDI6 will give a posttest probability of GSI of 70%. With a pretest probability of 0.5 and a negative likelihood ratio of 0.24, a negative result on the UDI6 will give a negative posttest probability of 19%. Based on this data, it can be concluded that a positive result on the UDI6 will likely rule in GSI, and a negative result on the UDI6 will rule out GSI. The confidence interval (CI) for specificity of 95% is within a range of 55.1%-71.8%. The confidence interval (CI) for sensitivity of 95% is within a range of 78.6%-91.0%. The UDI6 questionnaire has a diagnostic accuracy of 71% .

A response of "moderately (2)" or " greatly (3)" on question three on the UDI6 is an effective and inexpensive way to rule in and rule out GSI. We are comfortable extrapolating this data to a larger population of women with complaints of urinary incontinence who would be appropriate for conservative physical therapy management. Failure of conservative physical therapy treatment after positive questionnaire results may warrant referral for urodynamic testing to explore other etiologies of urinary incontinence.

Data from the third question "bother with urine leakage related to physical activity" from the UDI6 was the data we considered most relevant for our PICO because it identified patients with GSI, and our PICO is specific to identifying patients with GSI. Furthermore, GSI can be appropriately managed by physical therapy, making it relevant to our practice. GSI is a non-life threatening emergency and therefore does not warrant immediate and expensive urodynamic testing before exhausting other treatment options.

Applicability of study results:

Similarity to my patients: The patients in this study were reasonably representative of patients presenting to the physical therapy clinic with complaints of urinary incontinence.

Is the clinical test available, affordable, accurate and precise?: The UDI6 is available, affordable, accurate and precise for identifying women with urinary stress incontinence. Furthermore, the authors of the study specifically identify question three from the UDI6 as being reasonably predictive of GSI. The authors state that urodynamic testing is discouraged for patients with a diagnosis of GSI; this finding supports the usefulness of this questionnaire in the physical therapy practice where urodynamic testing is not available.

Summary of external validity: Based on the similarity between the women in the study and our patient population, we are comfortable extrapolating the results of this study to women who would present to the physical therapy clinic with urinary incontinence symptoms.

Discussion: Subjective history taking to rule out urinary stress incontinence in women was shown to be a sensitive diagnostic test in each of the three articles reviewed. A general history taking was shown to be more specific for ruling in GSI than question number 3 on the UDI6. Question number 3 from the UDI 6 had 63% specificity in the Lemack article and 31% specificity in the Fitzgerald article. While we cannot be confident that a positive answer to question number 3 on the UDI6 will rule in GSI, proceeding with conservative treatment would be appropriate considering GSI is a non-medical emergency and conservative treatment would not cause further harm.

References:

Fitzgerald, M., Brubaker, L. (2002) Urinary Incontinence Symptom Scores and Urodynamic Diagnoses. Neurology and Urodynamics 21, 30-35.

Lagro-Janssen, ALM., Debruyne, FMJ., Van Weel, C. (1991)Value of patient case history in diagnosing urinary incontinence in general practice. British journal of Urology 67,569-572.

Lemack, G. E., Zimmern, P. E., (1999) Predictability of Urodynamic Findings Based on the Urogenital Distress Inventory-6 Questionnaire. Urology 54, 461-466.