

# Efficacy and quality of life after transobturator tension-free vaginal tape procedure for female stress urinary incontinence

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## Abstract

**Background:** Nowadays, tension-free transobturator midurethral sling procedures have been gaining popularity in the surgical management of female stress urinary incontinence (SUI). However, quality of life (QoL) assessment following this new procedure is sparingly reported and requires further investigations for credentialing this intervention as a standard of care for women with SUI.

**Objective:** To evaluate the QoL outcome using King's Health Questionnaires (KHQ) scale following tension-free transobturator tape procedure.

**Materials and Methods:** We evaluated 31 women with genuine SUI in a tertiary medical teaching hospital for QoL before and after the surgery using KHQ. The responses were analyzed for internal consistency, criterion validity, and improvements in various domains in relation to QoL, which could have been affected by their urinary symptoms.

**Results:** Cronbach's  $\alpha$  statistics indicated good correlation between various items of the KHQ scale before and after surgery (0.88 vs 0.81). The criterion validity of the scale against Sandvik Short Format (SSF) indicated a good agreement between these two scales before intervention and during follow-up (Spearman's rank correlation coefficient: 0.872 vs. 0.638). When it came to various domains of KHQ scale, there were significant improvements in all items ( $p < 0.0001$ ) except General Health Perception ( $p = 0.69$ ). There was no procedure-related morbidity.

**Conclusion:** The results of this study indicate that KHQ can be effectively used for assessing QoL after TOT procedures. This procedure is also safe and effective for continence treatment.

**KEY WORDS:** Quality of life, King's Health Questionnaire, Tension-free transobturator tape (TOT)

## Introduction

The International Continence Society (ICS) defines stress urinary incontinence (SUI) as the involuntary leakage of urine

during increased abdominal pressure (e.g., during sneezing, coughing, walking, and sudden change of posture) in the absence of detrusor contraction.<sup>[1]</sup> Though SUI is said to affect 4%–35% of adult women,<sup>[2]</sup> the exact incidence in the Indian context is not known because of lack of epidemiological studies.<sup>[3]</sup> There are several social issues associated with involuntary urinary leakage such as anxiety and distress in public places, personal issues such as loss of self-esteem, marital disharmony, shame, discomfort, in addition to cultural and religious implications.<sup>[4]</sup> Though the condition does not endanger one's life, the affected women give up many aspects of their lifestyle, retire from social interactions, and develop pessimistic attitude. In the USA alone, over

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\$12 billion are spent annually for both nonsurgical and surgical management of SUI, indicating the financial burden associated with involuntary leakage of urine.<sup>[5]</sup>

In the initial phase, nonsurgical therapies such as bladder training, pelvic floor exercises, and drug therapy may be beneficial; surgery is the main stay of treatment in long-term treatment. Currently, more than 200 surgical procedures have been described<sup>[6]</sup> and of late, tension-free transobturator tape (TOT) repair is gaining wide expectation because it is associated with minimal hospital stay and the procedure can be done under local anesthesia without the risk of bladder injury.

Normally, the success of any surgical intervention is measured by urodynamic studies of lower urinary tract that assess the bladder storage and emptying capacity. The methods of clinical assessment such as pad test, stress test, and Q-tip test are grossly inadequate in diagnosis and follow-up of SUI.<sup>[7]</sup> Sophisticated gadgets are required to study intravesical and urethral pressures during periods of raised intra-abdominal pressure, but still there may be significant differences with regard to subjective (what the patient feels) and objective (what the operative surgeon thinks as a cure) improvement regarding quality of life (QoL) following surgery.<sup>[8]</sup>

There are several varieties of questionnaires regarding QoL in urinary incontinence and the number is constantly increasing over the years.<sup>[9]</sup> Among these questionnaires, King's Health Questionnaire (KHQ) is the most reputed and has been translated into more than 45 languages.<sup>[10]</sup> Several reports on medical and surgical interventions in urinary incontinence have liberally used KHQ system of QoL assessment not only to show improvement in the condition before and after the procedure, but also the persistence and continuation of therapeutic benefits during short-term and long-term surveillances.<sup>[11]</sup> Other advantages include the short time required to administer and complete the questionnaires (on average 5 min), age and gender appropriateness (valid for both male and females between 17 and 85 years), coverage of various bladder conditions (stress incontinence, urge incontinence, mixed incontinence, over active bladder), and zero cost to the participant. The aim of this study was to evaluate the QoL outcome using KHQ scale following TOT procedure.

## Materials and Methods

We evaluated 31 women with SUI who underwent TOT repair in our hospital from August 2013 to June 2014. Before the surgery, all the patients were urodynamically assessed to rule out other types of incontinence. Clinical examination was carried out to show urinary leak on coughing and Valsalva maneuver. All the patients had ultrasound examination to note the postvoid residual urine. Patients with isolated urge incontinence were excluded. Other exclusion criteria included presence of neurological disorders affecting the urinary function, active urinary tract infection, and significant uterovaginal prolapse requiring different surgical approach. Patients who

were put on anticholinergic medications to control the urinary urgency were also excluded. The hospital regulatory body gave the necessary clearance to conduct the study.

### Sample size estimation

Dedicação and co-workers<sup>[12]</sup> compared the QoL in different types of urinary incontinence before the surgery. They reported that the mean score for item General Health Perception was 47.58±19.74 for SUI before surgery. The inventor of KHQ scale has suggested that a change by 10 points in the mean score signifies a medium effect.<sup>[13]</sup> We calculated the desired sample size based on these assumptions so that we could achieve 80% power and 0.05 significance level by using the following formula:

$$n = \left[ \frac{(z\alpha + z\beta)\sigma}{\Delta\mu} \right]^2$$

where  $z\alpha = 1.96$  (critical value that divides the central 95% of  $z$  distribution from 5% in the tails),

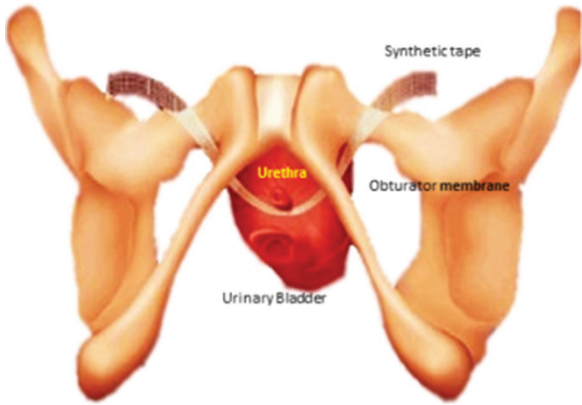
$z\beta = 0.84$  (critical value that separates the lower 20% of distribution from upper 80%),

$\sigma$  = standard deviation,  $\Delta\mu$  = required difference in mean for significant difference.

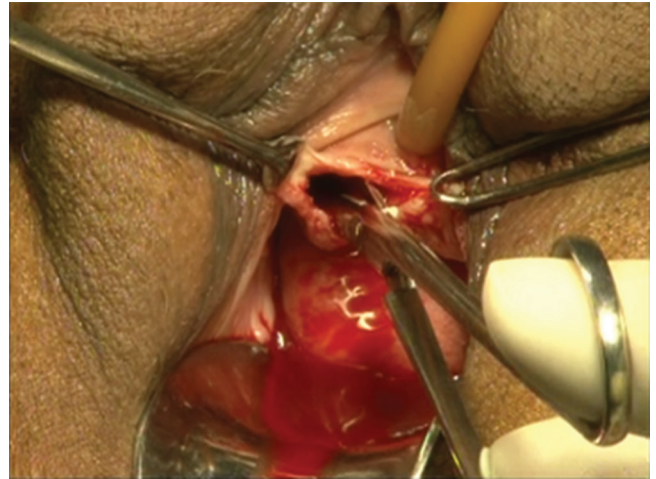
Accordingly, the proposed surgical intervention required recruitment of 31 cases to show significant improvement in KHQ scale as a result of surgery.

The KHQs were administered at the beginning of the procedure and during the postoperative follow-up period (at the end of 3 months). The questionnaires included three parts consisting of 21 items (Annexure 1). Part 1 contained general health perception and incontinence impact (one item each). Part 2 contained role limitations, physical limitations, social limitations (two items each), personal relationships, emotions (three items each) and sleep/energy (two items), and severity measures (four items). Part 3 was considered as a single item and contained 10 responses in relation to frequency, nocturia, urgency, urge, stress, intercourse incontinence, nocturnal enuresis, infections, pain, and difficulty in voiding. The responses in KHQ were scored as four-point rating system. The eight subscales ("domains") were scored between 0 (best) and 100 (worst). The Symptom Severity Scale was scored from 0 (best) to 30 (worst). Decreases in KHQ domain scores indicated an improvement in QoL. The minimally important difference—the smallest change in score that subjects perceived as beneficial—was three points for the Symptom Severity Scale and five points for all other KHQ domains. Twice of these values indicate medium change and thrice large change.<sup>[13]</sup> The lower scores indicated patient wellbeing and higher scores meant that the person was severely affected by the disease condition.

The main surgical procedure (TOT procedure) involved placing a synthetic sling to support the midurethra, which itself was supported laterally through obturator membrane (refer to operative Figures 1–20). The procedure was performed under general or regional anesthesia. The patient was placed in



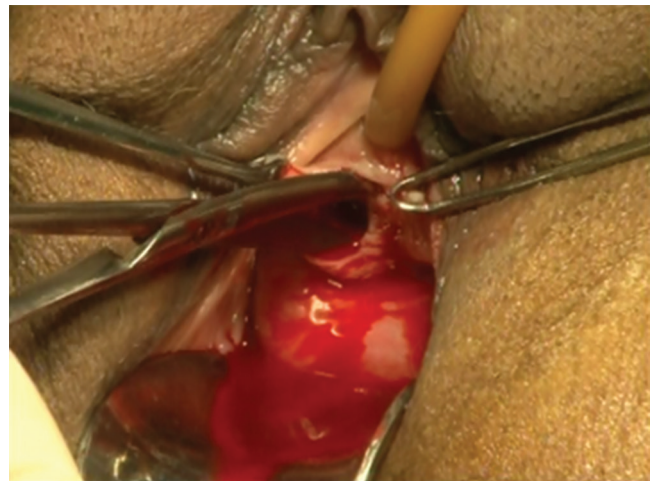
**Figure 1:** Diagrammatic representation of TOT procedure.



**Figure 4:** Right lateral vaginal dissection.



**Figure 2:** Instruments and materials required.



**Figure 5:** Left lateral vaginal dissection.



**Figure 3:** Incision on anterior vaginal wall.



**Figure 6:** Development of tunnel.



**Figure 7:** Markings for groin incisions.



**Figure 10:** Needle brought through vaginal incision.



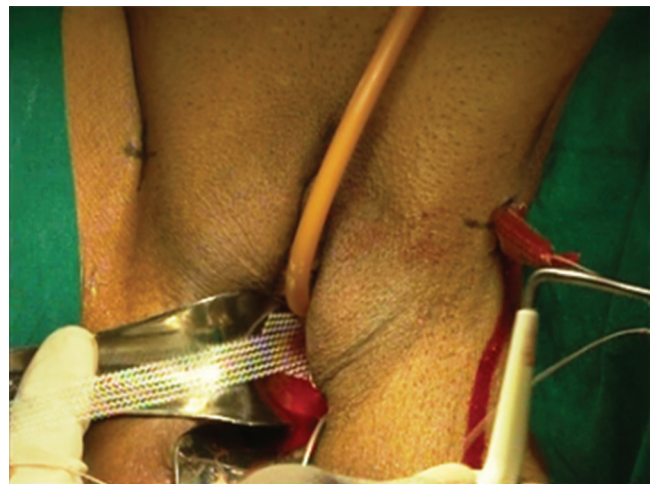
**Figure 8:** Helical needle passed through left groin incision.



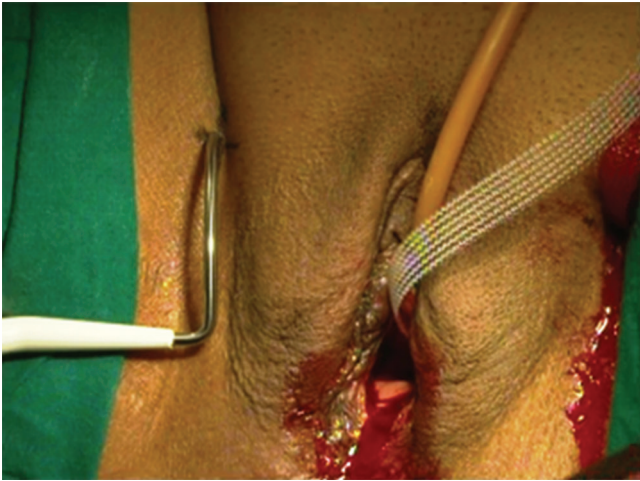
**Figure 11:** Tape threaded and pulled through left tunnel.



**Figure 9:** Helical needle palpated through vaginal incision.



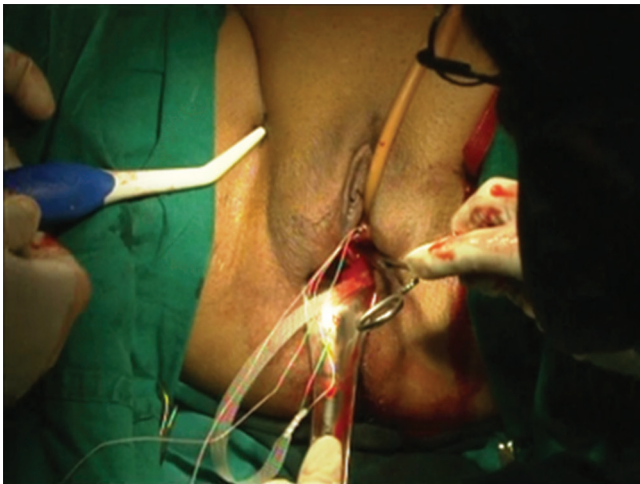
**Figure 12:** Tape brought out through left groin incision.



**Figure 13:** Helical needle passed through right tunnel.



**Figure 16:** Vaginal incision closure.



**Figure 14:** Tape pulled through right tunnel.



**Figure 17:** Right tape trimmed over skin surface.



**Figure 15:** Tape brought out through right groin incision.



**Figure 18:** Left tape trimmed over skin surface.



**Figure 19:** Groin incision closure.



**Figure 20:** Final result showing midvaginal elevation.

dorsal lithotomy position with thighs flexed at 120° angle. A small (1 cm) incision was made suburethraly in the anterior vaginal wall at midurethral level and the dissection was carried out to the pubic arch on either side toward anterior obturator notch in the obturator foramen. A tunnel was created around this path and then a mesh was passed through it using a helical introducer and brought out through two small (1 cm) skin incisions on either side of the groin below the insertion of adductor longus tendon. Once the tape was in place, it was adjusted to the appropriate tension, then the excess mesh was trimmed and surgical incisions were closed with suture.

Data were analyzed using SPSS, version 16, for Windows (SPSS Inc., Chicago, IL, USA). Descriptive analysis was performed to obtain mean, standard deviation, and median values for various domains in KHQ QoL assessment. To decide whether the therapeutic intervention for SUI resulted in significant benefit after the procedure, mean and

**Table 1:** Patient characteristics

Parameter	Mean (range)/n (%)
Age (years)	57 (42–76)
Parity	3.2 (1–5)
BMI	24.2 (22–27)
Postmenopausal	19 (61.3)

standard deviations of the scores before after the treatment were analyzed by Wilcoxon signed-rank test. A  $p$ -value of 0.05 or less was considered statistically significant. Internal consistency was measured with Cronbach's  $\alpha$ . An  $\alpha$  value of  $\geq 0.7$  was considered as acceptable. The criterion validity was tested by correlating total scores of KHQ with Sandvik two-item scale.<sup>[14]</sup> Spearman's rank correlation coefficient was used to test the agreement between these two systems of QoL assessment.

## Results

The demographic details of the patients are shown in Table 1. Many of the patients were postmenopausal and had isolated SUI and hence did not require concurrent cystocele repair. Keeping in mind the cost of synthetic vaginal tape exclusively meant for transvaginal repair, we used routine proline mesh used for incisional hernia repair and tailored it to suit our requirement. Though the repair could be carried out under local anesthesia, we resorted to regional or general anesthesia keeping patient's comfort in mind. Initially, during the learning curve, we required roughly 45–60 min. However toward the end, the entire procedure could be completed within 30 min. The mean $\pm$ SD operative time was 43 $\pm$ 18 min. No significant blood loss was encountered during surgery or afterwards. Routine cystoscopy was not recommended for TOT procedure, as the chances of bladder injury are remote. However, we did check bladder integrity cystoscopically, and none of our patients had vesical injury. Patients were discharged the next day. The follow-up period ranged from 2 to 48 months. The KHQ QoL assessment results were noted before surgery and 3 months after the surgery.

Reliability analysis of KHQ scale was carried out to find the internal consistency of the questionnaires both before the surgery and during follow-up. Table 2 shows reliability statistics for internal consistency. Cronbach's  $\alpha$  statistics was used to calculate correlations between items. An  $\alpha$  value of  $\geq 0.7$  was considered acceptable (interpretation for Cronbach's  $\alpha$  statistics;  $>0.9$   $\rightarrow$  excellent, 0.8–0.9  $\rightarrow$  good, 0.7–0.8  $\rightarrow$  acceptable, 0.6–0.7  $\rightarrow$  questionable, 0.5–0.6  $\rightarrow$  poor). From Table 2, it can be inferred that the KHQ QoL assessment has highly acceptable  $\alpha$  values, proving it to be one of the important tools to assess urinary incontinence in women.

To assess the criterion validity of KHQ QoL tool, its correlation with Sandvik Short Form (SSF) questionnaire was analyzed. Sandvik format is one of the shortest urinary continence questionnaires available and can be easily

**Table 2:** Reliability statistics for internal consistency

Items	Before surgery			After surgery		
	Mean	SD	Cronbach's $\alpha$	Mean	SD	Cronbach's $\alpha$
General health perception	51.61	20.35	0.88	53.23	22.12	0.81
Incontinence impact	66.13	17.3		29.81	17.78	
Role limitations	54.1	14.79		12.48	11.34	
Physical limitations	66.81	19.02		16.19	12.42	
Social limitations	33.35	25.95		17.03	15.77	
Personal relationships	12.06	15.91		12.06	0	
Emotions	52.19	17.36		15.97	9.35	
Sleep/Energy	24.74	13.35		11.42	12.49	
Severity measures	67.29	11.36		16.29	5.31	
Symptom severity scale	19.26	1.32		9.32	1.66	

**Table 3:** KHQ vs. Sandvik QoL assessment correlation statistics

Assessment	Spearman's rank correlation coefficient	$p$ -Value
Before surgery	0.872	<0.0001
After surgery	0.638	<0.0001

administered and used to test the validity of long-form questionnaires. It has only two items, the first question refers to experiencing urinary leakage (less than once month, 1; many times in a month, 2; many times in a week, 3; every day and night, 4) and the second question refers to amount of urinary leakage (drops, 1; significant loss, 2). The Sandvik severity index is obtained by multiplying the results of questions (1) and (2). The symptoms are considered mild when the score is 1–2, moderate for score 3–4, and severe when the score is 6–8.

Patient satisfaction was measured by analyzing various domains of KHQ scale (Table 4; Figure 21). As said earlier, drop in scores following surgery indicated improvement in that particular domain. All the domains showed significant improvement (<0.0001) in QoL except general health perception. However, this finding was not statistically significant ( $p = 0.69$ ).

In general, the extent of change in KHQ score was significantly large and indicated improvement in patient outlook toward herself and her environment. The median improvement in physical limitations and severity measures were above 50 points, incontinence impact and role limitations above 40, and emotions above 30. There was a significant improvement of 10 points in symptom severity scale too, considering the fact that it is a 30-point scale, whereas others are 100-point scales.

There were no complications such as vaginal hematoma, bladder perforation, and tape infection in the present series. One patient had slight voiding difficulty in the first week; however, she did not require catheterization. All the patients had significant improvement in their urinary diary.

## Discussion

From the last century, more than 200 surgical procedures have been invented for the management of female SUI.<sup>[6]</sup> Women were offered various operations, for example, suburethral (Kelly) plication, Stamey retropubic needle urethropexy, open or laparoscopic Burch colposuspension, and Aldridge fascial suburethral sling procedure. Since the year 2000, literally all of these operations have been replaced in urogynecological practice by transvaginal retropubic or TOT midurethral synthetic slings as these procedures can be done on day-care basis, have lesser chance of bladder injury, take shorter recovery time, and cause less postoperative voiding dysfunction.

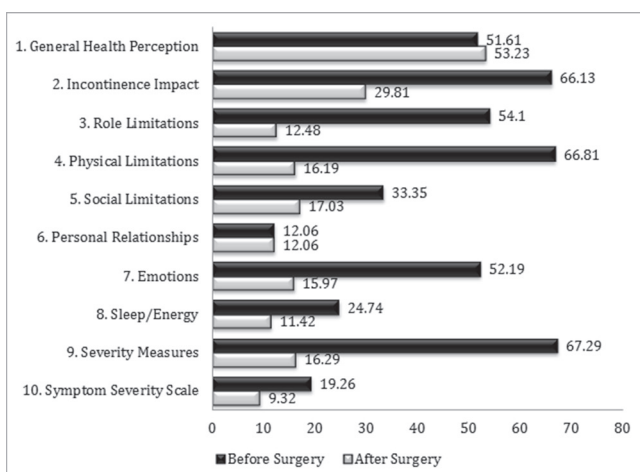
It was Nickel in 1998, a veterinary surgeon from Department of Clinical Sciences of Companion Animals, University of Utrecht, the Netherlands, who successfully performed sling procedure in female dogs by passing a synthetic ribbon on either side of urethra through obturator foramen.<sup>[15]</sup> The human implantation of midurethral tape was introduced in France in 2001 by Delorme, who used nonwoven polypropylene tape coated with silicon, which was suspended laterally through obturator fascia.<sup>[16]</sup> Since then, thousands of these procedures have been performed worldwide.

Traditionally, measurement of impact of any surgical intervention to cure female SUI requires good documentation and record-keeping of bladder diary, objective clinical indicators such as urinary leak after raised intra-abdominal pressure, and urodynamic findings. But what is seen as an improvement by the surgeon may not actually reflect on patient satisfaction. There are several other aspects of human psychology and sexuality beyond the surgical cure, hence ICS strongly insists on standardization of the outcome measures with respect to QoL in clinical trials involving urinary incontinence.<sup>[17]</sup>

The need for QoL assessment was felt by the scientific community long ago, and this led to invention of various assessment tools, for example, Urogenital Distress Inventory in 1994,<sup>[18]</sup> Bristol Female Lower Urinary Tract Symptoms (B-FLUTS) questionnaire in 1996,<sup>[19]</sup> Urinary Incontinence

**Table 4:** Descriptive statistics of various domains of King's Health Questionnaire

	Before surgery	After surgery	Change in points	p-Value
General health perception				
Mean±SD	51.6 ± 20.3	53.3 ± 22.1	1.7	0.69
Median	52	54	2	
Incontinence impact				
Mean±SD	66.1 ± 17.3	29.8 ± 17.8	36.3	<0.0001
Median	67	26	41	
Role limitations				
Mean±SD	54.1 ± 14.8	12.5 ± 11.3	41.6	<0.0001
Median	54	12	42	
Physical limitations				
Mean±SD	66.8 ± 19	16.2 ± 12.4	50.6	<0.0001
Median	67	16	51	
Social limitations				
Mean±SD	33.4 ± 26	17 ± 15.8	16.4	<0.0001
Median	33	17	16	
Personal relationships				
Mean±SD	12.1 ± 15.9	0	12.1	<0.0001
Median	12	0	12	
Emotions				
Mean±SD	52.2 ± 17.4	16 ± 9.4	36.2	<0.0001
Median	52	16	36	
Sleep/Energy				
Mean±SD	24.7 ± 13.4	11.4 ± 12.5	13.3	<0.0001
Median	24	11	13	
Severity measures				
Mean±SD	67.3 ± 11.4	16.3 ± 5.3	51	<0.0001
Median	67	16	51	
Symptom severity scale				
Mean±SD	19.3 ± 1.3	9.3 ± 1.7	10	<0.0001
Median	19	10	9	



**Figure 21:** Patient satisfaction in various domains before and after surgery.

Quality of Life (I-QoL) instrument in 1996,<sup>[20]</sup> KHQ in 1997,<sup>[21]</sup> and Pelvic Organ Prolapse/Urinary Incontinence Sexual Function Questionnaire (PISQ) in 2001,<sup>[22]</sup>. Among these

questionnaires, KHQ still enjoys wide popularity and has been extensively referenced in most of the studies (more than 500 publications indexed in PubMed database) involving assessment of improvement in urinary symptoms following either medical or surgical therapy.

Although this study focuses on the use of KHQ for assessment of genuine SUI, several researchers have opined that this tool can be used even for women with other forms of urinary difficulties such as overactive bladder and mixed urinary incontinence.

Tamanini *et al.*<sup>[23]</sup> from Brazil were one of the few researchers who evaluated concurrent validity, internal consistency, and responsiveness of KHQs before and after stress urinary incontinence surgery. They studied 68 patients who underwent pubovaginal synthetic mesh repair and were administered KHQ before and after the procedure. They checked the validity of this tool by comparing the scores of KHQ with Stamey incontinence grading. They observed significant improvement in various domains of KHQ following the surgery and also found a good correlation between KHQ and Stamey incontinence grading. We too observed similar findings, and we compared results of KHQ with SSF questionnaires and found good statistical correlations between the two tools.

In another study from Poland, the psychometric property of KHQ was cross-validated with the World Health Organization Quality of Life (WHOQOL-BREF) questionnaires.<sup>[24]</sup> It was found that there was significant correlation between two of these urinary severity scales. Juul *et al.*<sup>[25]</sup> from Department of Gynaecology, Tygerberg Hospital, Western Cape, South Africa, conducted validation study of KHQ in local South African English, Afrikaans, and isiXhosa women with urinary incontinence. The questionnaires were administered in all the three local languages and validated for all the domains in KHQ. The tool performed equally well in all three language versions and the authors were of the opinion that KHQ can be used both in clinical practice and research involving different ethnicity, religion, and communities.

Frohme *et al.*<sup>[26]</sup> from a university hospital from Germany conducted QoL outcome in 116 women who underwent TOT procedure using Monarc Subfascial Hammock (American Medical System, USA). They compared subjective and objective improvements in QoL using KHQ and ICIQ-SF (International Consultation on Incontinence Questionnaire—Short Form). They categorized these patients into three groups (normal weight,  $n = 31$ ; overweight,  $n = 56$ ; and obese,  $n = 29$ ), and their results indicated that there were no significant differences between these groups in terms of success, QoL scores, and postoperative complications. There was one case of postoperative bleeding, and temporary voiding difficulty was experienced by six women. The mean operation time was 40 min. The KHQ scale showed continual improvements in all domains irrespective of initial body mass index (BMI). The overall cure rate was 93% at the end of 3 years of follow-up. They opined that TOT is a safe procedure for urinary incontinence in women of all weight ranges, and the outcome measures can be easily assessed by KHQ system of scoring the severity of urinary incontinence. The results of our study are in strong agreement with their findings. However, we did not compare outcome measures according to BMI as very few of our patients were having BMI above 25 kg/m<sup>2</sup>.

## Conclusions

Our results indicate that KHQ can be effectively used for assessing QoL after surgical treatment. The tool is available online for use and may be incorporated in all scientific researches involving urinary incontinence procedures, not only conservative, but also interventional; the benefit of these interventions can be measured from the patient's perspective.

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## ANNEXURE 1

BRITISH SOCIETY OF UROGYNAECOLOGY					
King's Health Questionnaires (KHQ)					
Q1. GENERAL HEALTH PERCEPTION: How would you describe your health at present?	<input type="radio"/> Very good	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor	<input type="radio"/> Very poor
Q2. INCONTINENCE IMPACT: How much do you think your bladder problem affects your life?	<input type="radio"/> Not at all	<input type="radio"/> A little	<input type="radio"/> Moderately	<input type="radio"/> A lot	
Q3. ROLE LIMITATIONS: Does your bladder problem affect					
A. your house hold tasks e.g. cleaning, shopping etc?	<input type="radio"/> Not at all	<input type="radio"/> A little	<input type="radio"/> Moderately	<input type="radio"/> A lot	
B. your job or normal daily activities outside the home?	<input type="radio"/> Not at all	<input type="radio"/> A little	<input type="radio"/> Moderately	<input type="radio"/> A lot	
Q4. PHYSICAL LIMITATIONS: Does your bladder problem affect					
A. your physical activities (e.g., going for walk, run, sports, gym, etc.)?	<input type="radio"/> Not at all	<input type="radio"/> A little	<input type="radio"/> Moderately	<input type="radio"/> A lot	
B. your affect travel?	<input type="radio"/> Not at all	<input type="radio"/> A little	<input type="radio"/> Moderately	<input type="radio"/> A lot	
Q5. SOCIAL LIMITATIONS: Does your bladder problem limit					
A. your social life	<input type="radio"/> Not at all	<input type="radio"/> A little	<input type="radio"/> Moderately	<input type="radio"/> A lot	
B. your limit your ability to see / visit friends?	<input type="radio"/> Not at all	<input type="radio"/> A little	<input type="radio"/> Moderately	<input type="radio"/> A lot	
Q6. PERSONAL RELATIONSHIPS: Does your bladder problem affect					
A. your relationship with your partner?	<input type="radio"/> Not at all	<input type="radio"/> A little	<input type="radio"/> Moderately	<input type="radio"/> A lot	<input type="radio"/> Not applicable
B. your sex life?	<input type="radio"/> Not at all	<input type="radio"/> A little	<input type="radio"/> Moderately	<input type="radio"/> A lot	<input type="radio"/> Not applicable
C. your family life?	<input type="radio"/> Not at all	<input type="radio"/> A little	<input type="radio"/> Moderately	<input type="radio"/> A lot	<input type="radio"/> Not applicable
Q7. EMOTIONS: Does your bladder problem make					
A. you feel depressed?	<input type="radio"/> Not at all	<input type="radio"/> A little	<input type="radio"/> Moderately	<input type="radio"/> Very much	
B. you feel anxious and nervous?	<input type="radio"/> Not at all	<input type="radio"/> A little	<input type="radio"/> Moderately	<input type="radio"/> Very much	
C. you feel bad about yourself?	<input type="radio"/> Not at all	<input type="radio"/> A little	<input type="radio"/> Moderately	<input type="radio"/> Very much	
Q8. SLEEP / ENERGY : Does your bladder problem					
A. affect your sleep?	<input type="radio"/> Not at all	<input type="radio"/> A little	<input type="radio"/> Moderately	<input type="radio"/> A lot	
B. make you feel worn out and tired?	<input type="radio"/> Not at all	<input type="radio"/> A little	<input type="radio"/> Moderately	<input type="radio"/> A lot	
Q9. SEVERITY MEASURES:					
A: Wear pads to keep dry?	<input type="radio"/> Never	<input type="radio"/> Sometimes	<input type="radio"/> Often	<input type="radio"/> All the time	
B: Be careful how much fluid you drink?	<input type="radio"/> Never	<input type="radio"/> Sometimes	<input type="radio"/> Often	<input type="radio"/> All the time	
C: Change your underclothes because they get wet	<input type="radio"/> Never	<input type="radio"/> Sometimes	<input type="radio"/> Often	<input type="radio"/> All the time	
D: Worry in case you smell	<input type="radio"/> Never	<input type="radio"/> Sometimes	<input type="radio"/> Often	<input type="radio"/> All the time	
Q10. SYMPTOM SEVERITY SCALE					
A. Frequency of urination	<input type="radio"/> None	<input type="radio"/> Mild	<input type="radio"/> Moderate	<input type="radio"/> Severe	
B. Nocturia	<input type="radio"/> None	<input type="radio"/> Mild	<input type="radio"/> Moderate	<input type="radio"/> Severe	
C. Urgency	<input type="radio"/> None	<input type="radio"/> Mild	<input type="radio"/> Moderate	<input type="radio"/> Severe	
D. Urge Incontinence	<input type="radio"/> None	<input type="radio"/> Mild	<input type="radio"/> Moderate	<input type="radio"/> Severe	
E. Stress Incontinence	<input type="radio"/> None	<input type="radio"/> Mild	<input type="radio"/> Moderate	<input type="radio"/> Severe	
F. Nocturnal Enuresis	<input type="radio"/> None	<input type="radio"/> Mild	<input type="radio"/> Moderate	<input type="radio"/> Severe	
G. Intercourse Incontinence	<input type="radio"/> None	<input type="radio"/> Mild	<input type="radio"/> Moderate	<input type="radio"/> Severe	
H. Waterworks infection	<input type="radio"/> None	<input type="radio"/> Mild	<input type="radio"/> Moderate	<input type="radio"/> Severe	
I. Bladder pain	<input type="radio"/> None	<input type="radio"/> Mild	<input type="radio"/> Moderate	<input type="radio"/> Severe	
J. Postvoid dribble	<input type="radio"/> None	<input type="radio"/> Mild	<input type="radio"/> Moderate	<input type="radio"/> Severe	
Calculation of Scores					
Q1. Very good=1, Good=2, Fair=3, Poor=4, Very poor=5	Q1 Overall Score= ((Actual Score - 1) / 4) x 100				
Q2. Not at all=1, A little=2, Moderately=3, A lot=4	Q2 Overall Score= ((Actual Score - 1) / 3) x 100				
Q3. Not at all=1, A little=2, Moderately=3, A lot=4	Q3 Overall Score= ((Actual Total Score - 2) / 6) x 100				
Q4. Not at all=1, A little=2, Moderately=3, A lot=4	Q4 Overall Score= ((Actual Total Score - 2) / 6) x 100				
Q5. Not at all=1, A little=2, Moderately=3, A lot=4	Q5 Overall Score depends upon Q6C Score				
If Q6 C response is "Not Applicable"	Q5 Overall Score= ((Actual Total Score - 2) / 6) x 100				
If Q6 C response is other than "Not Applicable"	Q5 Overall Score= (Sum of scores to 5A, 5B, 6C)-3 / 9 X 100				
Q6. Not at all=1, A little=2, Moderately=3, A lot=4, Not applicable=0	Q6 Overall score is (Sum of scores to 6A, 6B)-2 / 6 X 100				
If (6A+6B) ≥ 2	Q6 Overall score is (Sum of scores to 6A, 6B)-1 / 3 X 100				
If (6A+6B) =1	Q6 Score should be treated as missing value				
If (6A+6B) =0	Q7 Overall Score= (Sum of scores to 7A, 7B, 7C)-3 / 9 X 100				
Q7. Not at all=1, A little=2, Moderately=3, Very much=4	Q8 Overall Score= ((Actual Total Score - 2) / 6) x 100				
Q8. Not at all=1, A little=2, Moderately=3, A lot=4	Q9 Overall Score: (Actual Total Score -4) / 12 X 100				
Q9. Never=1, Sometimes=2, Often=3, All the time=4	Q10 Overall Score is the total of responses to ten questions.				
Q10. None=0, Mild=1, Moderate=2, Severe=3 (for Responses A to J)					
<b>PART 1 SCORE = (Q1. OVERALL SCORE) + (Q2. OVERALL SCORE)</b>					
<b>PART 2 SCORE = OVERALL SCORE OF Q3 TO Q9</b>					
<b>PART 3 SCORE = OVERALL SCORE OF Q10</b>					

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