

WOMEN'S SEXUAL HEALTH

The Effects of Transobturator Tape Surgery on Sexual Functions in Women With Stress Urinary Incontinence



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ABSTRACT

Introduction: Stress urinary incontinence (SUI) can adversely affect the patient's sexual function.

Aim: To evaluate the sexual functions in women who underwent transobturator tape (TOT) surgery because of stress urinary incontinence and factors affecting the treatment results.

Methods: The study was conducted in 2 tertiary level clinics between 2013 and 2019 and included sexually active patients with a diagnosis of SUI who underwent TOT operation. The preoperative and postoperative (6 months after surgery) Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire short form (PISQ-12) scores of the patients were evaluated. The patients were evaluated according to the score changes of an increased score (benefited) and the same or lower score (did not benefit). The PISQ-12 questionnaire has 3 subdomains of behavioral-emotive (Q: 1–4), physical (Q: 5–9), and partner-related (Q: 10–12). Each question is scored from 0 to 4, giving a total ranging from 0 to 48. A higher PISQ-12 score indicates better sexual function.

Main Outcome Measure: PISQ-12.

Results: The study included 117 patients with a median age of 52 years (range, 32–67 years), and 51.3% of the patients were postmenopausal. When the preoperative and postoperative PISQ-12 scores were evaluated in the whole group, there was a statistically significant improvement (from 24.66 to 26.52, $P = .001$). In the analysis of domains, there was a statistically significant improvement in physical score (from 11.68 to 13.53, $P < .001$), whereas behavioral-emotive and partner-related scores did not significantly change. In the multivariate analysis of menopausal status, parity and presence of diabetes mellitus were all independently and significantly associated with poor PISQ-12 outcome (OR: 2.60, 95% CI: 1.41–4.81, $P = .002$; OR: 1.59, 95% CI: 1.03–2.47, $P = .034$; and OR: 2.42, 95% CI: 1.28–4.58, $P = .007$, respectively).

Conclusion: Both physical and psychological statuses should be taken into consideration when planning treatment in patients with urinary incontinence, and it should be noted that postsurgical sexual function status may not be positively affected in postmenopausal, multiparous, and diabetic patients. **Kizilkan Y, Tohma YA, Senel S, et al. The Effects of Transobturator Tape Surgery on Sexual Functions in Women With Stress Urinary Incontinence. Sex Med 2020;8:777–782.**

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Key Words: Sexual Function; Transobturator Tape; Urinary Incontinence; Menopause

INTRODUCTION

Stress urinary incontinence (SUI) is a common health problem especially among middle-aged and older women.¹ It is

characterized by urethral urinary leakage with increased abdominal pressure as a result of coughing, sneezing, or running.² This problem can adversely affect the patient's social and professional life, physical condition, and sexual function.³

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Table 1. General characteristics of patients

	N	%
Age, median (range)	52 (32–67)	
Menopausal status		
Premenopausal	57	48.7
Postmenopausal	60	51.3
Diabetes mellitus		
Present	22	18.8
Absent	95	81.2
Hypertension/coronary heart disease		
Present	51	43.6
Absent	66	56.4
Prior pelvic surgery		
Present	17	14.5
Absent	100	85.5
Cystocele concomitant with transobturator tape		
Present	23	19.7
Absent	94	80.3

Sexual dysfunction rates in women in the presence and absence of urinary incontinence have been reported to be 43.5% and 59.6%, respectively.⁴ Urinary incontinence during coitus or orgasm is observed in 28–70% of SUI cases, and this is the main underlying reason for the high frequency of sexual dysfunction in these patients.^{5,6} Sexual dysfunction may have various presentations including sexual unwillingness, dyspareunia, or partner-related symptoms. It also affects the patients' quality of life, and this may manifest physically, emotionally, socially, or in familial relationships. Therefore, one of the targets of SUI treatment is to correct sexual functions.

The main aim of incontinence surgery is to restructure the anatomy, regain normal functions, and prevent urinary incontinence.⁷ Tension-free vaginal tape and transobturator tape (TOT) are mid-urethral sling surgeries, which are globally well-accepted in SUI treatment.⁸ TOT is a minimally invasive surgical method with a success rate over 90%.⁹ It is frequently used in incontinence treatment, and the fact that it can be used in outpatient settings, is easy to apply, and has good outcomes constitute advantages of this approach.

The success of SUI treatment is generally evaluated with the change in the patient's symptoms. As this depends on patient comments, it is a subjective evaluation, and a substantial rate of women may be hesitant to talk about some of their symptoms. Therefore, questionnaires have been developed for the evaluation of treatment success to avoid subjectivity and a lack of information. There are some well-accepted questionnaires, and the Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire short form (PISQ) was used for this study.^{10–13}

The aim of this study was to evaluate the sexual functions in women who underwent TOT surgery because of SUI and factors affecting the treatment results.

MATERIALS AND METHODS

The study was conducted in 2 tertiary level clinics (Ankara Numune Training and Research Hospital Department of Urology and Başkent University Faculty of Medicine, Department of Obstetrics and Gynecology and Urology) between 2013 and 2019. The study was approved by the Institutional Review Board of Ankara City Hospital (April 30, 2020/E1-20-427).

Table 2. Comparison of preoperative and postoperative PISQ-12 scores

	Preoperative score	Postoperative score	P
Total PISQ-12 score	24.66 ± 5.27	26.52 ± 8.31	.001
Behavioral-emotive score	6.97 ± 3.28	6.90 ± 3.68	.681
Physical score	11.68 ± 3.32	13.53 ± 3.64	<.001
Partner-related score	6.03 ± 2.19	6.13 ± 2.72	.457
Q1	2.09 ± 1.02	2.09 ± 1.12	.899
Q2	1.81 ± 1.09	1.75 ± 1.23	.516
Q3	1.75 ± 1.23	1.99 ± 0.89	.247
Q4	1.08 ± 0.92	0.98 ± 1.01	.041
Q5	2.32 ± 1.14	2.29 ± 1.18	.837
Q6	1.94 ± 1.12	2.69 ± 1.19	<.001
Q7	1.95 ± 1.05	2.56 ± 1.19	<.001
Q8	2.68 ± 1.04	3.07 ± 0.96	<.001
Q9	2.79 ± 0.84	2.93 ± 0.92	.026
Q10	2.03 ± 1.20	2.01 ± 1.24	.515
Q11	2.05 ± 1.02	2.20 ± 1.08	.029
Q12	1.95 ± 0.41	1.93 ± 1.01	.839

Total, domain, and item-based analysis in the whole group.

Bold values indicate $P < .05$.

PISQ-12 = Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire short form.

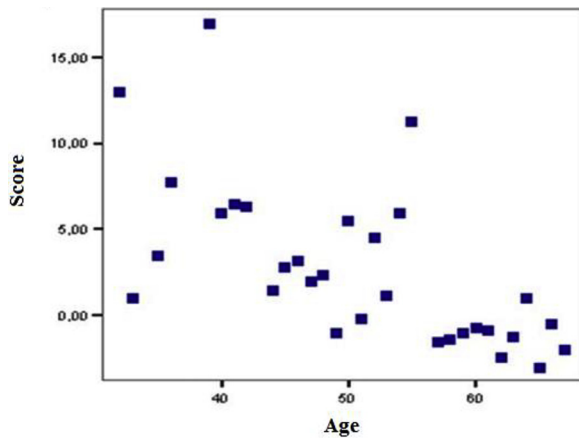


Figure 1. The association between age and changes in Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire short form (PISQ-12) scores.

The study included sexually active patients with a diagnosis of SUI who underwent TOT operation. Patient age and medical, surgical, and obstetric history were obtained from patient records. The Turkish translated version of the Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire short form (PISQ-12) questionnaire¹⁴ was used preoperatively and postoperatively to determine the impact of SUI operation on sexual functions in both clinics. The preoperative and postoperative (6 months after surgery) PISQ-12 scores of the patients were evaluated with the other factors. The patients were evaluated according to the score changes of an increased score (benefited)

and the same or lower score (did not benefit). The PISQ-12 questionnaire has 3 subdomains of behavioral-emotive (Q: 1–4), physical (Q: 5–9), and partner-related (Q: 10–12). Each question is scored from 0 to 4, giving a total ranging from 0 to 48. A higher PISQ-12 score indicates better sexual function.

Women who were not sexually active, did not come to the controls, and whose retrospective information was not available from the hospital database were excluded from the study.

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Statistical Analysis

Data were analyzed using SPSS for Windows v.15.0 software (SPSS, Inc., Chicago, IL). Descriptive and frequency analyses were performed. Categorical variables were compared using the Chi-square test or Fisher’s exact test, as appropriate. Logistic regression analysis was used to evaluate independent samples affecting the score change. A receiver operating characteristic curve was used to assess the discriminative role of the age and parity between patients who benefited and did not benefit from the treatment. Cutoff points for age and parity were determined as 56 and 3.5 years, respectively. The Independent Samples *t*-test was used to compare preoperative and postoperative PISQ-12 scores. The level of statistical significance was set at *P* < .05.

Table 3. Evaluation of the patients according to the change in the scores

	Benefited		Did not benefit		<i>P</i> value	Multivariate analysis		
	Univariate analysis					OR	95% CI	<i>P</i> value
	N	%	N	%				
Age (years)								
<56	54	76.1	17	23.9	<.001			
>56	12	26.1	34	73.9				
Parity								
<4	48	68.6	22	31.4	.001	1.59	1.03–2.47	.034
≥4	18	38.3	29	61.7				
Menopausal status								
Premenopausal	43	75.4	14	24.6	<.001	2.60	1.41–4.81	.002
Postmenopausal	23	38.3	37	61.7				
Diabetes mellitus								
Present	4	18.2	18	81.8	<.001	2.42	1.28–4.58	.007
Absent	62	65.3	33	34.7				
Prior pelvic surgery								
Present	9	52.9	8	47.1	.755			
Absent	57	57.0	43	43.0				
Cystocele concomitant with transobturator tape								
Present	10	43.5	13	56.5	.163			
Absent	56	59.6	38	40.4				

Bold values indicate *P* < .05.

Table 4. Comparison of preoperative and postoperative PISQ-12 scores

	Preoperative score	Postoperative score	<i>P</i>
Total PISQ-12 score	23.20 ± 5.39	23.27 ± 7.51	.920
Behavioral-emotive score	5.52 ± 2.96	5.22 ± 3.22	.135
Physical score	12.18 ± 3.34	12.85 ± 3.34	.108
Partner-related score	5.43 ± 2.17	5.18 ± 2.67	.209

Analysis of total and domain scores in postmenopausal patients (*n* = 60).
PISQ-12 = Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire short form.

RESULTS

17 of 134 patients whose retrospective data were not available and did not come for control were excluded from the study. The study included 117 patients with a median age of 52 years (range, 32–67 years), and 51.3% of the patients were postmenopausal. A history of prior pelvic surgery was recorded for 17 (14.5%) patients. The general characteristics of the patients are shown in [Table 1](#).

When the preoperative and postoperative PISQ-12 scores were evaluated in the whole group, there was a statistically significant improvement (from 24.66 to 26.52, *P* = .001). In the analysis of domains, there was a statistically significant improvement in physical score (from 11.68 to 13.53, *P* < .001), whereas behavioral-emotive and partner-related scores did not significantly change. In the separate analysis of the items, Q4 score significantly decreased, and Q6, 7, 8, 9, and 11 significantly improved. The preoperative and postoperative PISQ-2 scores of the whole group are summarized in [Table 2](#).

In the univariate analysis evaluation of treatment benefit, age, postmenopausal status, parity ≥4, and presence of diabetes mellitus were associated with no benefit in the scores. The benefit in scores decreased with increasing age ([Figure 1](#)). The preoperative and postoperative total PISQ-12 scores changed from 23.7 to 20.7 in patients with diabetes mellitus and 24.9 to 27.9 in those without diabetes mellitus. Besides these, score changes were 22.7 to 22.3 in patients with equal or more than 4 parities and 25.9 to 29.4 in patients with less than 4 parities. In the multivariate analysis of menopausal status, parity and presence of diabetes mellitus were all independently and significantly associated with poor PISQ-12 outcome (OR: 2.60, 95% CI:

1.41–4.81, *P* = .002; OR: 1.59, 95% CI: 1.03–2.47, *P* = .034; and OR: 2.42, 95% CI: 1.28–4.58, *P* = .007, respectively). The score change analysis is shown in [Table 3](#).

As the postmenopausal status was found to be an independent prognostic factor, the patients were evaluated separately according to the menopausal status. [Tables 4](#) and [5](#) summarize the preoperative and postoperative PISQ-12 scores in a total and domain basis. There were significant improvements in total score (from 26.19 to 29.95, *P* < .001) and physical score (from 11.14 to 14.26, *P* < .001) in premenopausal women, whereas there were no significant changes in any of the scores in postmenopausal patients.

DISCUSSION

In this study, the preoperative and postoperative sexual function statuses were investigated of patients who had undergone TOT surgery due to SUI and whether there were any factors that could affect it and important findings emerged. First, TOT surgery applied to patients suffering from SUI was seen to significantly improve sexual function according to the preoperative and postoperative PISQ-12 scores, which was consistent with the literature.⁸ The important point here is that although there was a statistical improvement in physical score, behavioral-emotional and partner-related scores did not change significantly as had been expected. Secondly and importantly, multivariate analysis showed that menopausal status, parity, and presence of diabetes mellitus were all independently and significantly associated with poor PISQ-12 outcomes.

Sexual dysfunction is one of the important problems in diabetic patients.^{15,16} Among the causes of sexual dysfunction in women, there may be many physical causes: vascular insufficiency due to

Table 5. Comparison of preoperative and postoperative PISQ-12 scores

	Preoperative score	Postoperative score	<i>P</i>
Total PISQ-12 Score	26.19 ± 4.72	29.95 ± 7.77	<.001
Behavioral-emotive score	8.51 ± 2.89	8.67 ± 3.32	.624
Physical score	11.14 ± 3.35	14.26 ± 3.82	<.001
Partner-related score	6.67 ± 2.04	7.14 ± 2.43	.011

Analysis of total and domain scores in premenopausal patients (*n* = 57).
Bold values indicate *P* < .05.
PISQ-12 = Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire short form.

atherosclerosis, hormonal abnormalities, and autonomic neuropathies.¹⁷ In addition, in this group of patients, more pain is felt during sexual intercourse, and as a result, decreased sexual desire and problems with orgasm are more common.¹⁸ It is obvious that this etiological relationship between diabetes and sexual dysfunction will not be eliminated with TOT surgery. In the present study, findings were determined to support this, and no adequate improvement could be detected in postoperative sexual dysfunctions in the patient group with diabetes. It was speculated that although the negative effects of urinary incontinence disappeared in this group of patients, there was no sufficient improvement as the negative effect of diabetes was still present. Therefore, if TOT surgery is performed in this patient group, it should be noted that there may not be sufficient improvement in these complaints for patients with sexual dysfunction before surgery.

Delivery is another important factor affecting sexual function. Pregnancy and delivery can affect sexual function as a result of hormonal changes during pregnancy and the mechanical stress that the fetus places on the pelvic floor muscles during pregnancy and delivery.¹⁹ The relationship between multiparity and sexual dysfunction has been shown in many studies in literature.²⁰ In a study by Cayan et al.,²¹ sexual dysfunction was observed to be significantly higher in the presence of multiparity (OR: 1.55; 95% CI: 1.16–2.07; $P = .0027$). In the present study, multiparity was found to be independently and significantly associated with a poor PISQ-12 outcome. It was speculated that one of the important causes of sexual dysfunction in this patient group is vaginal loosening, and if no treatment options for vaginal loosening are applied during the TOT surgery, it is normal that sexual dysfunction will not fully recover in this patient group. Therefore, if TOT surgery is performed in this patient group, it should be noted that vaginal tightening procedures should also be applied to the surgical protocol.

Age was an independent factor in the present study, although the main reason affecting the results was menopause. All the patients older than 56 years were postmenopausal, thus only menopausal status was used in the multivariate analysis, which showed that menopausal status was significantly associated with a poor PISQ-12 outcome. Considering the effects of menopause on sexual function, this result is not surprising. While there may be many etiological reasons for sexual dysfunction during menopause, one of the causes most commonly held responsible is vulvovaginal atrophy caused by hypoestrogenemia.^{22,23} Therefore, it would be helpful to add estrogen-containing creams to the follow-up protocol after surgery in this group of patients.

The present study has some limitations including the retrospective design and that operations were performed by different surgeons. Despite these limitations, this study can be considered to make a significant contribution to the understanding of for which subgroups of patients TOT surgery may not have a positive effect on sexual functions.

CONCLUSIONS

The sexual function of women with SUI can be changed after TOT operation—improved, unchanged, or worsened—and the basis for this change may be emotional improvement as a result of the disappearance of urinary incontinence or a change in the woman's genital health perception due to the surgical improvement of the genital organs. Therefore, both physical and psychological statuses should be taken into consideration when planning treatment in patients with urinary incontinence, and it should be noted that postsurgical sexual function status may not be positively affected in postmenopausal, multiparous, and diabetic patients.

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