Original article / *Araştırma*

The validity and reliability of the Turkish version of the Quality of Sexual Experience Scale

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ABSTRACT

Objective: *Quality of Sexual Experience Scale (QSES) that evaluates the quality of the last any sexual relationship stands out amongst other questionnaires with its event-level design. It was aimed to cross-culturally adapt, validate the QSE scale for use in Turkish population and strengthen the construct validity of the original scale.* ***Methods:*** *After cross-cultural adaptation procedure, the Turkish version of QSE and Female Sexual Function Index (FSFI) were administered. The content/face validity, exploratory factor analysis, floor and ceiling effects, internal consistency, reliability and criterion validity were appropriately assessed. Predefined and specific two hypotheses were formulated for the construct validity. The QSE, FSFI, and Hospital Anxiety and Depression Scale (HADS) were administered to women with and without diabetes mellitus for between-subjects comparisons. Finally, the QSE, Golombok Rust Inventory of Sexual Satisfaction and HADS were administered to couples with vaginismus before and after one comprehensive session of sexual counseling.* ***Results:*** *Our findings indicated excellent content/face validity, internal consistency (Cronbach's alpha: 0.940), test-retest reliability (ICC: 0.992), sufficient criterion (r=0.731) and construct validity by proving the two hypotheses. Analyses formed one factor structure and no floor and ceiling effects.* ***Discussion:*** *This tool enables between-subject comparisons and within-subject comparisons across sexual events. The QSES was successfully adapted and validated for the Turkish population use in the assessment of quality of sexual experience. Its event-level design and simple structure contribute to be liberally used as a practical instrument in the gynecology, sexual medicine and psychiatry settings, as well as in clinical studies.* ***(Anatolian Journal of Psychiatry 2020; 21(Suppl.1):48-55)***

Keywords: *diabetes mellitus, quality, reliability, sexual experience, sexual health, vaginismus, validity*

Cinsel Deneyim Kalitesi Ölçeğinin Türkçe sürümünün geçerlilik ve güvenilirlik çalışması

ÖZ

Amaç: *Cinsel Deneyim Kalitesi Ölçeği (CDKÖ) eşleniklerinden olay-bazlı deseni ile öne çıkmaktadır. Bu çalışmada, CDKÖ'nün Türk popülasyonunda kullanılmak üzere kültürlerarası uyarlaması, geçerliliği ve özgün ölçeğin yapısal geçerliliğinin güçlendirilmesi amaçlandı.* ***Yöntem:*** *Katılımcılara CDKÖ ve Kadın Cinsel Fonksiyon İndeksi (KCFI)*

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uygulandı. İçerik/yüz yüze geçerlilik, araştırıcı faktör analizi, tavan-taban etkisi, iç tutarlılık, güvenilirlik ve ölçüt güvenilirliği 70 kadında değerlendirildi. Yapısal geçerlilik amacıyla bağımsız ve özgül iki hipotez kuruldu. CDKÖ, KCFI ve Hastane Anksiyete ve Depresyon Skalası (HADS) diyabetes mellitus olan ve olmayan 60 hastaya uygulandı. CDKÖ, Golombok Rust Cinsel Deneyim Envanteri ve HADS vajinismus olan 10 çifte cinsel eğitim terapisi öncesi ve sonrasında uygulandı. ***Bulgular:*** *Analiz sonuçları çok iyi düzeyde içerik geçerliliği, iç tutarlılık (Cronbach alfa: 0.940), test-tekrar test güvenilirliği (ICC: 0.992), yeterli düzeyde kriterion (r=0.731) ve iki hipotezin başarılı şekilde doğrulanması ile yeterli yapısal geçerlilik sundu. Analiz tek faktör yapısı ve taban-tavan etkisi olmadığını gösterdi.* ***Sonuç:*** *CDKÖ'nün Türk popülasyonunda başarılı şekilde kullanılmak üzere kültürlerarası uyarlaması ve geçerliliği gösterildi. Bu araç, kadınlar arasında ve aynı kadında farklı cinsel olaylar arasında karşılaştırmalar yapabilmeye olanak sağlamaktadır. Olay-bazlı deseni ve basit yapısı jinekoloji, cinsel tıp ve psikiyatri klinik uygulama ve klinik araştırma alanlarında yaygın şekilde kullanılmasını kolaylaştırmaktadır.* ***(Anadolu Psikiyatri Derg 2020; 21(Ek sayı.1):48-55)***

Anahtar sözcükler: *Cinsel deneyim, cinsel sağlık, diyabetes mellitus, geçerlilik, güvenilirlik, kalite, vajinismus*

INTRODUCTION

Sexuality is one of the most important aspects of health and quality of life, and is vital to the overall well-being of women.[1] Female sexual dysfunction correspond to various biological, physical, psychological, and interpersonal etiologies.[2,3] It is often underdiagnosed and undertreated, as clinicians are frequently limited by a poor understanding of its multifactorial nature.[3] Female sexual dysfunction may actually be a symptom or side effect, rather than a primary pathology.[4] Female sexual dysfunction represents a more complicated issue; therefore a comprehensive approach addressing both the physiological and psychological factors is required to address women's sexual difficulties.[1]

The screening and diagnosis of female sexual dysfunction can be made in the office setting using questionnaires, although most of the self-report or interview questionnaires are primarily used in the research settings.[3,5] Among those, the Female Sexual Function Index (FSFI) is distinguished than others with scrutinizing sexual function in six separate dimensions (desire, arousal, lubrication, orgasm, satisfaction, and pain).[6] Women are supposed to assess their sexual functioning over the previous four weeks. However, the assessment of sexual life over a period of time may restrict the understanding of how the quality of an individual's sexual experience that can be affected by relational, interpersonal, situational, mood, hormonal and habitual factors.[7] Taking an event-level approach became particularly important in the context of findings from event-level prospective studies, which have indicated that sexual experiences vary within-person and across events with the same partner, and are shaped by situational, relational, and interpersonal factors.[8-10]

The Quality of Sexual Experience Scale (QSES) is a promising scale that was constructed to measure sexual quality on an event-specific basis.[7] QSES measures the quality of each sexual event and can be used regardless of the age, gender, sexual orientation, and relationship status of the individual and across sexual activity types.[7] The scale is increasingly used in sexual researches that focus on event-specific perceptions of sexuality.[8,11]

In this study, it was aimed to adapt, validate, and strengthen the validation of the QSES for use in Turkish women. Besides, two specific hypotheses were formulated for enabling use of QSES across sexual events in either between-subjects comparisons or within-subject comparisons. Discriminability of the scale was explored in couples seeking for treatment of vaginismus for within-subject comparisons and women with known diabetes mellitus for between-subjects comparisons.

METHODS

Cross-cultural adaptation procedure

The recommendations of the translation and cultural adaptation (TCA) group were followed for the validation and cross-cultural adaptation of the Turkish version of the QSES.[12-14] Permission to translate the QSES into Turkish and then validate this instrument was obtained from the developers of the original scale. The sequence of steps used was as follows: forward-translation, synthesis, back-translation, expert committee review, pretesting and cognitive debriefing, finalization, proofreading, and final report. No revision was required, and a final Turkish version of the QSES was produced.

A total of native-speaker 10 individuals who were believed to represent the target population were involved in the pretesting and cognitive debriefing stage to check the understandability, interpretation, and cultural relevance.[13,14] Less

than two minutes were required for self-administration of the questionnaire. The content validity was graded by the expert committee (three gynecologists, two psychiatrists working in the field of sexuality, one postgraduate nurse working in the gynecology setting, and one language professional), with an analysis of the relevance of each item of the QSE. Face validity measured the researchers' and patients' comprehension and acceptance of items of the pretest sample.[12,13]

Study design and population

The study was conducted at a tertiary training and research hospital between August 2015 and February 2016. The QSES and Turkish version of FSFI were administered to 70 women aged 18-60 years who have applied to the outpatient clinic of gynecology for routine gynecological examinations.[15] Women who reported that their most recent sexual activity had occurred in the past four weeks were included into the study. Women who took part in the pre-test and post-test stages were asked to return to the hospital after one experience of sexual intercourse and at an interval of at least one week for re-administration of the QSE. Reproducibility was assessed in 20 individuals.[12-14]

In addition, the QSES, FSFI, and Hospital Anxiety and Depression Score (HADS) were administered to 30 women with diabetes and 30 women without diabetes for between-subjects 2comparisons with similar participant characteristics, such as age, marital status, sexual orientation, education, and body mass index. Finally, the QSES, Golombok Rust Inventory of Sexual Satisfaction (GRISS), and HADS were administered to 10 couples for within-subject comparisons, once before one comprehensive session of sexual counseling and once after the first post-counseling sexual event. Sexual counseling was provided by psychiatrists' expertise in sexual medicine. Sexual counseling included detailed sexual, anatomical, and physiological education, behavioral suggestions, a ban on intercourse attempts, encouragement for sexual experience, apart from vaginal coitus, active sensate focus exercises, and a homework assignment.

The institutional Ethics Committee approved the study and written informed consent was obtained from all individual participants.

Psychometric properties

The content/face validity was assessed through expert committee decision, via analysis of the content validity ratio (CVR) and content validity index (CVI) before and after the changes. Exploratory factor analysis was conducted to investigate the factor structures/distribution of the QSES items. Internal consistency was assessed by Cronbach's alpha, and a value of between 0.70 and 0.95 was considered to reflect good internal consistency. The testing reliability was calculated with the intraclass correlation coefficient (ICC) and was considered acceptable when the ICC was over 0.70.[16] Interpretability is defined as the degree to which one can assign qualitative meaning to quantitative scores. It is suggested that investigators provide mean and SD scores of at least four relevant subgroups of patients with regard to obtaining information about what change would be considered clinically meaningful.[16]

Construct and criterion validity

The construct validity is the extent to the scale is consistent with theoretically derived hypotheses concerning the concepts that are being measured.[16] Predefined and specific hypotheses were formulated between known groups. We hypothesized that there should be strong correlations between the QSES and FSFI scores, and relatively higher QSES and FSFI scores in the non-diabetic group compared to the women with diabetes mellitus. In addition, it was hypothesized that there would be higher QSE scores and lower GRISS scores among couples with vaginismus after comprehensive sexual counseling. The FSFI was used as the gold standard to use for criterion validity in the present study, because of its widespread use in several previous studies.[16]

Instruments

The 7-item QSES has demonstrated strong psychometric properties with a Cronbach's alpha of 0.96. The QSES score is the mean of the seven items. The items were reversely recorded in the current study that a more positive anchored score of 7 have been placed on the right. Thus, more positive responses received higher scores, as indicated by the original authors for future studies using the QSES.[7]

The FSFI is a multiple-trait scoring, self-report document that is used to assess female sexual function during the previous four weeks.[6] It consists of 19 items that encompass six separate domains. Validated into the Turkish language-version of FSFI was used in this study.[15]

The HADS is a brief, self-report, screening scale that focuses on the anxiety and depression

status of individuals at general medical outpatient clinics.[17] It contains 14 items, and patients rate how they have felt over the last week. The scale contains two subscales for anxiety and depression, and each consists of seven items (range, 0-21). Turkish version of HADS scale was used in this study.[18]

The GRISS is a 28-item questionnaire that is used for assessing the existence and severity of sexual problems.[19] A higher score indicates greater sexual dysfunction. The validity and reliability of the GRISS were tested for Turkish samples by Tugrul et al.[20]

Data analysis

All clinical parameters were summarized by descriptive statistics. Data quality was assessed by means, standard deviation, ranges, and percentages of patients scoring minimum (floor) and maximum (ceiling) possible QSES scores. The sample size was prospectively evaluated using G-POWER v3.1.9 software (Universitat Kiel, Germany). When it was assumed that one unit of the QSES score would make clinically significant difference, at least 10 patients had to be included in paired comparisons with α error protection of 0.05 and power of 0.80. Number Cruncher Statistical System 2007 (Kaysville, Utah, USA) software was used for statistical analyses.

RESULTS

The demographic characteristics of the participants are shown in Table 1.

Table 1. Demographic characteristics of the participants

	Validation group (n=70)		Hypothesis-1 (n=60)		Hypothesis-2 (n=20)	
	n	%	n	%	n	%
Age (years) (Mean±SD)	35.93±5.79		38.30±5.80		26.05±3.28	
Gender						
Female	70	100	60	100	10	50.0
Male	0	0	0	0	10	50.0
Body-Mass Index (kg/m^2) (Mean±SD)	25.57±3.22		27.93±4.41		25.05±3.38	
Educational status						
Primary	16	22.9	14	23.3		
Secondary	28	40.0	24	40.0		
Tertiary	26	37.1	22	36.7		
Birth						
None	9	12.7	8	13.3		
Cesarean section	42	60.0	37	61.7		
Vaginal delivery	19	27.1	15	25.0		
Diabetes mellitus						
Absent					30	50.0
Present					30	50.0

Study group: Test-retest reliability, internal consistency, exploratory factor analysis
Hypothesis-1: Diabetic and non-diabetic group to test the hypothesis for between-subjects comparisons
Hypothesis-2: 10 couples with vaginismus to test the hypothesis for within-subject comparisons

Psychometric properties

The CVI and CVR were both found as 1.00 based on the ratings of item clarity and relevance provided by the expert committee indicating sufficient content validity. Below than 15% of the respondents (7.14%) had scores of 0 (floor) or 7 (ceiling), indicating no floor and ceiling effects. Internal consistency was assessed using Cronbach's alpha. It was 0.940 for the total QSES score, indicating excellent internal consistency.

The Kaiser-Meyer-Olkin value was high at 0.900, and the Bartlett's test of sphericity was signifycant ($p<0.001$), confirming the suitability of using exploratory factor analysis. The analysis formed one factor. The factor loadings were 0.961, 0.958, 0.953, 0.949, 0.946, 0.938, and 0.914, respectively, as shown in Table 2. The mean level of commonality was found as 0.894±0.03, which was higher than the recommended threshold of 0.70 that indicates adequate sample size

Table 2. Exploratory factor analysis and communalities

	Factor 1	Communalities Initial	Extraction
#1	0.961	1.00	0.895
#2	0.958	1.00	0.900
#3	0.953	1.00	0.880
#4	0.949	1.00	0.924
#5	0.946	1.00	0.909
#6	0.938	1.00	0.836
#7	0.914	1.00	0.917

#1-7: Items of Quality of Sexual Experience Scale

for factor analysis.[21]

Testing reliability

The test-retest reliability coefficient (ICC-agreement, two-way random effects model) was 0.992, indicating excellent reliability of the scores. The QSES scores were correlated with the FSFI scores (r=0.731, p<0.001), indicating sufficient criterion validity.

Construct validity

Significantly higher QSES scores were observed in non-diabetic women compared to women with diabetes mellitus (with a mean difference of 0.99 and a standard error of 0.29, p=0.001). Similarly, significantly higher FSFI scores were observed in non-diabetic women (26.19±2.81), compared to women with diabetes mellitus (23.83±3.54), with a mean difference of 2.36 and a standard error of 0.82 (p=0.006), indicating sufficient construct validity for use between-subjects. QSE scores were found as 4.94±0.83 and 3.96±1.33 in women without DM and without DM, respecttively. FSFI scores were found as 26.19±2.81 and 23.83±3.54 in women without DM and without DM, respectively.

As secondarily hypothesized, significant increase in scores of QSES was observed in couples with vaginismus after sexual counseling (1.78±1.17, p<0.001), as shown in Table 3. Similarly, significant decrease in GRISS scores were observed in couples with vaginismus after sexual counseling (18.55±9.00, p<0.001), indicating sufficient construct validity for to use in within-subjects. There was not statistically significant difference in anxiety and depression scores before and after sexual counseling (p>0.05).

Table 3. Comparison of QSES, GRISS, anxiety and depression scores regarding sexual counseling

	Before SC	After SC	Change	p
QSES	3.66±1.30	5.43±0.90	1.78±1.17	**<0.001**
GRISS	39.50±10.62	20.95±6.89	-18.55±9.00	**<0.001**
Anxiety	10.05±4.19	9.70±4.34	-0.35±2.08	0.462
Depression	5.40±2.91	5.75±2.88	0.35±1.81	0.399

Paired samples t test; SC: Sexual counseling; QSE: Quality of Sexual Experience Scale; GRISS: Golombok Rust Inventory of Sexual Satisfaction

The alteration between the QSE and GRISS scores were determined as significantly consistent (r=-0.808, p<0.001; Table 4). The confirmation of two hypotheses indicates sufficient overall construct validity of the QSES. Significant alteration between anxiety scores with QSE (r=0.541, p=0.014) and GRISS (r=0.628, p=0.003) scores were observed. However, depression scores did not differ in relation with QSES and GRISS scores (p>0.05). The change in QSES, GRISS, anxiety and depression scores did not differ after vaginal counseling with regard to age, sex and BMI (p>0.05).

Interpretability

No significant difference was found between the age and education subgroups (Table 5). A statistically significant difference in QSES scores was obtained regarding type of delivery (p=0.037). The Bonferroni post hoc test indicated that women who had experienced a cesarean delivery had statistically significantly lower QSES scores compared to nulliparous women (with a mean difference of 1.339 and a standard error of 0.575, p=0.032). There was a significant difference in QSES scores between women who had experienced vaginal or cesarean delivery and nulliparous women (p>0.05).

A successfully adapted and validated Turkish

Table 4. The alteration between QSES, GRISS, anxiety and depression scores

	Changes in before and after sexual counseling							
	QSES		GRISS		Anxiety		Depression	
	r	p	r	p	r	p	r	p
QSES			-0.808	**<0.001**	0.541	**0.014**	-0.008	0.974
GRISS	-0.808	**<0.001**			-0.628	**0.003**	0.225	0.340
Anxiety	0.541	**0.014**	-0.628	**0.003**			-0.105	0.659
Depression	-0.008	0.974	0.225	0.340	-0.105	0.659		
‡ Gender								
Female	1.98±0.92		-19.10±7.50		0.30±1.89		0.70±1.77	
Male	1.57±1.39		-18.00±10.68		-1.00±2.16		0.00±1.89	
p	0.445	0.793	0.169	0.403				
Age	-0.268	0.253	-0.051	0.832	0.010	0.965	0.076	0.749
BMI	-0.009	0.971	0.042	0.859	-0.169	0.476	0.143	0.548

r: Pearson correlation coefficient; ‡ Independent samples t test; QSES: Quality of Sexual Experience Scale; GRISS: Golombok Rust Inventory of Sexual Satisfaction; BMI: Body-Mass Index

Table 5. Interpretability (n=70)

	QSES scores (Mean±SD)	p
Age (years)		0.576[a]
21-30	4.86±0.52	
31-40	4.47±1.31	
41-49	4.31±1.23	
Educational status		0.847[a]
Primary	4.54±1.17	
Secondary	4.34±1.27	
Tertiary	4.51±1.21	
Birth		**0.037**[a]
None	5.34±0.85	
Vaginal delivery	4.44±1.06	
Cesarean section	4.00±1.49	
Diabetes mellitus		**0.001**[b]
Absent	4.94±0.83	
Present	3.96±1.33	
Total	4.45±1.21	

QSES: Quality of Sexual Experience Scale;
[a]: One-way ANOVA; [b]: Independent samples t test

version of the QSES is shown in Supplements.

DISCUSSION

The present study provided an improved validation of the QSES with a design permitting within-subject comparisons across sexual events and between-subjects comparisons. The Turkish version of the QSES showed excellent internal consistency, with alpha at 0.940, and excellent reliability at 0.992, with correct loading on the original factor structure in exploratory factor analysis.

Examination of sexual quality on an event-level provides a valuable way to gain a better understanding of individuals and couples' sexual problems from a perspective of sexual satisfaction, sexual desire, and desire discrepancy.[22] Sanders et al. remarked that clinical diagnoses should not be based on single-event assessments.[7] Consistently, Ridley et al. observed an ebb and flow in sexual desire, rather than a decline over time suggesting that examination of expectancies and exploration of how sexual processes differ should be studied at the daily level.[23] Mark discouraged the examination of a whole or over a period of a specified time with implying that event-level characteristics are crucial when examining sexual behavior.[11] It was implied that event-level data collection by longitudinal studies provide more contextual information with a more dynamic understanding of individual sexual discrepancies and their effect on relational outcomes.[24] A growing number of studies have shown that analysis of sexual experiences on a daily and event-level basis offers a logical approach to obtaining data regarding a specific event by minimizing recall bias.[1,11,23-25]

The original authors have suggested to strengthen the validation of the QSES by designing within-subject comparisons for future studies. In the current study, a specific hypothesis including expected differences between known groups was tested in couples with vaginismus to be used in a within-subjects evaluation. Sexual counseling, sexual education, and sexual therapy should be the first-line non-medical management for women with sexual problems.[26-29] Con-

sistently, significantly higher QSES and GRISS scores were found in the couples with vaginismus after one comprehensive session of sexual counseling and education. We believe that the confirmation of the hypothesis of 'differences within-subject' strengthens the construct of the QSE scale for further use and studies.

Second hypothesis was formed to assess the construct validity to substantiate the use of QSES in 'between-subjects' evaluations as suggested by original authors. In the current study, it was speculated that QSES should differ between women with and without diabetes mellitus. A recent meta-analysis showed that female sexual dysfunction is associated with poor sexual health in women with diabetes compared to those without diabetes.[30] Consequently, significantly lower QSES and FSFI scores were found in women with diabetes mellitus compared to women without diabetes in the present study. This finding indicates that QSES can identify the differences in sexual quality between specific clinical situations.

As frontline providers of women's healthcare, gynecologists are in a unique position to address and effectively diagnose these concerns.[31] Sex education, sexual counseling, medications and medical interventions are applicable options in appropriate candidates, while difficult cases require a referral to specialists in sexual health and medicine.[28,31] We believe that QSES might be useful to evaluate the performance of every session of sexual behavioral therapies on an event-specific basis rather than being a fully comprehensive tool for clinical diagnostic purposes. In addition, combining the QSE scale with other detailed scales might provide crucial data to gain an understanding in specific causes underlying the sexual problems.

Conclusion

The QSES was successfully adapted and validated for the Turkish population in the current study. The QSES was found as a reliable, consistent, and valid instrument for use in the assessment of quality of sexual experience. Its event-level design and simple structure contribute to be liberally used as a practical instrument that is available for utilization in the psychiatry, gynecology and sexual medicine settings, as well as in clinical studies.

Authors' contributions: *M.Y.: design, literature review, writing manuscript, critical analysis, supervision; M.A.S.: design, literature review, statistics, critical analysis, supervision; N.D.: data gathering, clinical assessment; Y.O.O.: data gathering, clinical assessment; G.A.: data gathering, clinical assessment; T.G.: data gathering, clinical assessment; N.T.: Critical analysis, supervision.*

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SUPPLEMENT
CİNSEL DENEYİM KALİTESİ ÖLÇEĞİ (QUALITY OF SEXUAL EXPERIENCE SCALE)

Son cinsel ilişkinizi düşündüğünüzde, aşağıdakilerden hangisini söylersiniz?
(Lütfen her satırda bir seçim yapacak şekilde 1'den 7'ye kadar işaretleyiniz)

1	2	3	4	5	6	7	
Çok kötüydü							Çok iyiydi
Hiç istediğim gibi değildi							Tam istediğim gibiydi
Beklentilerimi karşılamadı							Beklentilerimin üzerindeydi
Hiç zevkli değildi							Çok zevkliydi
Hiç hoşuma gitmeyen bir cinsel ilişki oldu							Çok hoşuma giden bir cinsel ilişki oldu
Bedensel olarak çok kötüydü							Bedensel olarak çok iyiydi
Duygusal olarak çok kötüydü							Duygusal olarak çok iyiydi