ABSTRACT

Introduction: The sexually related personal distress becomes an obligation for the diagnosis of female sexual dysfunction (FSD). The Female Sexual Distress Scale-Revised (FSDS-R) was developed, extensively validated, and is among the most widely used tools to measure distress associated with impaired sexual function.

Aim: This study aims to develop a Turkish version of the FSDS-R, to evaluate its psychometric reliability and validity, and to estimate the optimal cutoff score that corresponds best to the clinical diagnosis of sexual dysfunction.

Methods: Ninety-five participants were diagnosed with female sexual interest and arousal disorder (FSIAD), 25 participants were diagnosed with another FSD, and 128 participants were healthy. Alpha coefficients (α) were used as an indicator of internal consistency. Test–retest reliability over a 2-week period was estimated using intraclass correlation coefficients (ICCs). Correlation analysis conducted between the FSDS-R total score, the Female Sexual Function Index subscale, and total score was examined for convergent validity. Discriminant validity was assessed by comparing mean scores of the FSD and control groups in a between-groups analysis of variance. Receiver operating characteristic analysis was performed to determine optimal cutoff values of the Turkish version of Female Sexual Distress Scale-Revised (Tr-FSDS-R).

Main Outcomes Measures: Sexuality-related distress measured by the Turkish version of the FSDS-R.

Results: Internal consistencies of the FSDS-R across the two assessments point for the three groups of women ranged from α = 0.87 to α = 0.99. ICCs ranged from 0.92 to 0.94 for baseline and day 15 for FSIAD, other FSD, and no FSD groups. One-factor unidimensional model explained 85.7% of the total variance of the Tr-FSDS-R items. The optimal cutoff score was found to be >11.5 to provide optimal sensitivity (97.9%) and specificity (83.2%). Significant differences in the FSDS-R scores were found between healthy women, women with hypoactive sexual desire disorder, and women with other types of FSD.

Conclusion: The Turkish version of FSDS-R is a valid, reliable tool with well discriminative and psychometric validity for use in the Turkish female population and can be used as a screening questionnaire for females with sexual interest/arousal disorder. The score of ≥11.5 was proposed as a cutoff to detect the presence of sexually related personal distress in Turkish women with FSD.

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Key Words: Female Sexual Distress Scale-Revised; Turkish Version; Female Sexual Dysfunction; Validation; Development

INTRODUCTION

Female sexual dysfunction (FSD) is a term used to describe any problem that may be encountered in the interruption of normal sexual functioning, such as low desire or interest, diminished arousal, orgasmic difficulties, and dyspareunia. FSD is a complex and multidimensional problem resulting from physical, social, and psychological factors such as culture, religion, age, mental health, and interpersonal relations. Its incidence increases with age, and up to 75% prevalence has been
reported, with estimates differing across populations and cultures. The few studies in Turkey have reported that FSD may affect up to 46.9% of women. The FSD prevalence by age groups were 22% for those 20–29 years, 39.7% for those 30–39 years, 50.2% for those 40–49 years, 71.3% for those 50–59 years, 82.9% for those 60–64 years. Some form of sexual dysfunction is experienced by as many as 45% of women in their lifetime. Also, prevalence of this condition may vary depending on the adopted criteria.

Hypoactive sexual desire disorder (HSDD) is considered a sexual dysfunction and is characterized as a lack or absence of sexual fantasies and a desire for sexual activity, as judged by a clinician. Personal distress or interpersonal difficulties is an essential condition for diagnosis of sexual dysfunction according to the criteria of Diagnostic and Statistical Manual of Mental Disorders (DSM)-IV-TR and America Foundation of Urologic Disease (AFUD). The DSM-V, published in May of 2013, seeks to overcome the validity problems of a linear model of sexual response. Female hypoactive desire dysfunction and female arousal dysfunction were merged into a single syndrome called sexual interest/arousal disorder in DSM-V. Female sexual interest/arousal disorder (FSIAD) is defined as a “lack of, or significantly reduced, sexual interest/arousal,” manifesting as at least three of the following symptoms: no or little interest in sexual activity, no or few sexual thoughts, no or few attempts to initiate sexual activity or respond to partner’s initiation, no or little sexual pleasure/excitement in 75–100% of sexual experiences, no or little sexual interest in internal or external erotic stimuli, and no or few genital/nongenital sensations in 75–100% of sexual experiences.

Expert committee of the Third International Consultation on Sexual Medicine had emphasized the importance of measuring distress in FSD and HSDD. They recommended using a validated measure for sexual distress in clinical trials in FSD as a primary end point. This created the need for a validated measure of FSD. Validated patient reported outcome measures for the assessment of distress in FSD include the Sexual Satisfaction Scale for Women, the Sexual Desire and Relationship Distress Scale, the Female Sexual Distress Scale (FSDS), and the Female Sexual Distress Scale-Revised (FSDS-R). As the result of the efforts of AFUD to create a validated measure, the FSDS was developed. FSDS become the most extensively validated and widely used scale for assessing sexuality-related distress in women. In 2008, a revised version of the FSDS—the FSDS-R—was developed with the addition of a 13th item, offering an increased sensitivity—specificity profile of the tool. FSDS-R demonstrated good discriminant validity, high test—retest reliability, and a high degree of internal consistency in measuring sexually related personal distress in women with HSDD. Also the original FSDS and revised FSDS are widely accepted and translated into different languages and validated in various cultures and populations. Also, the translated forms are demonstrating strong internal consistency, reliability, and validity. There is a lack of and a need for a validated instrument for measuring sexuality-related distress in women in Turkey.

AIMS
The purposes of the study were to develop a Turkish version of the FSDS-R, to evaluate its psychometric reliability and validity, and to estimate the optimal cutoff score that corresponds best to the clinical diagnosis of sexual dysfunction. The secondary objective was to analyze correlation with commonly assessed domains of female sexual functioning.

METHODS
Study Population and Design
This 2-week prospective methodological study was carried out at the urogynecology unit of the Bezmialem Vakif University, Istanbul, Turkey, between January 2015 and May 2015. The study was approved by the institutional ethics committee. All subjects were invited to the clinic through direct face-to-face interview and telephone survey by medical students. They were asked to come to clinic and interview with a clinician for this study.

Eligibility criteria for inclusion into the study were to be 18 years or older, married, sexually active, and able to read, speak, and understand Turkish. Exclusion criteria were pregnancy or within 3 months postpartum, history of depression or other mental disorders, severe chronic diseases (diabetes mellitus, cardiovascular diseases, and liver and renal failure), psychoactive substance addiction, alcohol abuse, obesity (body mass index >30 kg/m²), history of major gynecological operations (hysterectomy, oophorectomy, or mastectomy), and use of medications affecting sexual function (antipsychotics, antihypertensives, antidepressants, antihistamines, benzodiazepines, or oral contraceptives). Of the 362 women invited to participate in the study, 66 women refused to participate, with refusal rates of 18.7%. Of the remaining 296, 48 (16.2%) women were excluded from the study according to exclusion criteria, resulting in a final sample of 248 women.

Study protocol was briefly explained to all women who agreed to participate. After the study protocol was explained and written informed consent was obtained, all eligible volunteers were asked to complete self-administered questionnaires in a private room. One of the authors was available when participants needed further explanation about the questions. After completion of the questionnaires, a standard medical evaluation form was used to assess participants, and the DSM-V criteria were used for diagnosing FSD by two gynecologist. Based on the evaluation of participants according to DSM-V criteria, women were assigned to either FSIAD, other FSD, or the healthy control group. A second survey was conducted with face-to-face interview after 2 weeks for test—retest reliability.
Linguistic Validation

The process to develop a Turkish version of the tool that was equivalent to the one used for the original English version was successfully completed. Linguistic validation was executed according to linguistic validation process guidelines of MAPI Institute. Validation process consisted of four steps including forward translation, backward translation, pilot testing, and cognitive debriefing field testing. One bilingual translator and the first author of the study independently translated the English FSDS into Turkish. Then, the two translated drafts were compared, and a first version of the FSDS-R was developed in a meeting with persons familiar with this issue. An independent native English-speaking translator who was blind to the original version of the scale translated the Turkish version back into English. Finally, a translation committee, which consisted of the first author of the study, two independent translators and other related authors, compared the backward-translated version with the original English version. In this way, a second Turkish version of the FSDS-R was created. The second version of the Turkish FSDS-R was administered to n = 20 nurses and to n = 10 women with known sexual distress to test the appropriateness, acceptability, clarity, comprehensibility, and cultural relevancy. No major problems were noted after pilot testing and face-to-face interview. In the end, the final version of the Turkish version of Female Sexual Distress Scale-Revised (Tr-FSDS-R) was administered to 248 women agreeing to participate in the field testing to ensure consistency of the translation and to enhance cross-cultural comparability.

FSDS-R

The FSDS-R is a patient-reported outcomes measure consisting of 13 items assessing different aspects of sexual activity-related distress in women. Items are scored on a five-point Likert-type scale as never (0), rarely (1), occasionally (2), frequently (3), or always (4). A total score, ranging from 0 to 52, can be computed by adding all 13 item scores. Higher scores indicate higher levels of sexual distress. The original version of the FSDS-R demonstrated acceptable scale reliability with Cronbach’s alpha values ranging from $\alpha = 0.87$ to $\alpha = 0.93$ and high test–retest reliability (intraclass correlation coefficient [ICC] ranging from $r = 0.74$ to $r = 0.86$). It was successfully cross-validated, and a diagnostic cutoff score of $>11$ was shown to be highly effective in discriminating between women with HSDD and other FSD and those without FSD. Unidimensional structure of the FSDS-R was confirmed by confirmatory factor analysis.

FSFI

The second questionnaire was the Female Sexual Function Index (FSFI), which enables the evaluation of the key dimensions of female sexual function through its six domain structures: desire, subjective arousal, lubrication, orgasm, satisfaction, and pain. Higher scores indicate better sexual function. A total FSFI score under 26.55 indicates low sexual function, with domain scores below 3.6 signifying abnormal function in the respective areas. Furthermore, it has been shown to be a reliable and validated measure of female sexual function when used among the Turkish population.

Statistical Analysis

Reliability of the Tr-FSDS-R was assessed by internal consistency and test–retest reliability. Alpha coefficients (\(\alpha\)) were used as an indicator of internal consistency. A Cronbach alpha coefficient of \(\geq 0.70\) was considered to indicate acceptable reliability. Test–retest reliability over a 2-week period was estimated using ICCs. ICC values of 0.21–0.40 representing poor to fair agreement, 0.41–0.60 moderate agreement, 0.61–0.80 good agreement, and \(>0.80\) excellent agreement between the two assessments.

Single unrotated principal component factor analysis was conducted for all 13 questionnaire items to evaluate the factor structure and construct validity of the Tr-FSDS-R. To determine the optimal cutoff values of the Tr-FSDS-R to discriminate between participants without sexual distress and with sexual distress due to low sexual interest/arousal or other sexual dysfunction, and healthy women without sexual distress, a receiver operating characteristic (ROC) curve was used. An area under curve (AUC) of 0.5 indicates the inability of the measure to discriminate between sub-groups of the participants, whereas an AUC of 1.0 represents perfect discriminant validity. Discriminant validity was assessed by comparing mean scores of the FSD and control groups in a between-groups analysis of variance (ANOVA). It was supposed that women with lower sexual functioning suffered from more sexual distress. Therefore, correlation analysis conducted between the FSDS-R total score, the FSFI subscale, and total score was examined for convergent validity.

All the statistical analyses in this study were performed by SPSS version 21.0 (IBM Corp, Armonk, NY, USA) statistical software. Distribution of data was assessed with histogram analysis and Kruskal–Wallis test. One-way ANOVA was used for comparisons of continuous variables. Chi-square test was used to compare the proportion of categorical variables. A $P$ value of \(<.05\) was considered significant for all tests.

RESULTS

Of the 248 participants, 95 women were included in the FSIAD group and 25 were included in the other FSD group. The final healthy control group comprised of 128 women. The mean age for women with FSIAD, women with other types of FSD, and healthy women was 35.8, 37.4, and 32.3 years, respectively. Women with FSD were significantly older than healthy controls. Also, the mean age of women with other FSD was significantly higher than women with low sexual interest or arousal. Sample characteristics, demographic data, and FSFI scores are presented in Table 1. Consistently, ages of women, marital length, and age
of partners were significantly different between groups. Most of the patients in FSIAD and other FSD had primary school education. In comparison, most of the women (68.8%) with no sexual dysfunction had a graduate degree of education. In our study, population women without FSD had higher educational levels, higher employee, and low parity compared with women with FSD.

Mean total scores for Tr-FSDS-R at days 0 and 15 for FSIAD, FSD, and normal sexual function groups are presented in Table 2. Tr-FSDS-R discriminated FSIAD and FSD subjects from healthy women irrespective of the recall time, which was confirmed by one-way ANOVA between groups. Subjects with FSIAD had the highest scores compared with the women with and without FSD. Otherwise, covariant analysis did not show any significant effects for age, duration of marriage, partner’s age, occupational status, and educational level across all three assessments.

Tr-FSDS-R demonstrated excellent internal consistencies, with Cronbach alpha of 0.98. Internal consistencies of the FSDS-R across the two assessments points for the three groups of women ranged from $\alpha = 0.87$ to $\alpha = 0.99$ (Table 3). For the assessment of test—retest reliability, the FSDS was administrated at baseline and 15 days after baseline. The ICC of stability over a 2-week period was 0.97. ICCs ranged from 0.92 to 0.94 for baseline and day 15 for FSIAD, other FSD and no FSD groups (Table 4).

Table 1. Baseline Characteristics, Female Sexual Function Index (FSFI) Total and Subdomain Scores of Sample with Sexual Dysfunction or with Normal Sexual Function

|                          | FSIAD        | Other FSD    | No FSD       | P      |
|--------------------------|--------------|--------------|--------------|--------|
| Age, years (mean ± SD)   | 35.8 ± 6.6   | 37.4 ± 6.5   | 32.3 ± 4.5   | <.0001 |
| Age of partner, years (mean ± SD) | 37.5 ± 6.9   | 39.4 ± 6.4   | 34 ± 5.8     | <.0001 |
| Marital length, years (mean ± SD) | 10.8 ± 6.4   | 12.4 ± 6.3   | 7.4 ± 4.9    | <.0001 |
| BMI (mean ± SD)          | 26.6 ± 4.5   | 26.3 ± 5.1   | 27.6 ± 4.4   |        |
| Family income monthly, N (%) |             |              |              |        |
| < $200                   | 7 (7.4)      | 3 (12)       | 5 (3.9)      | .8     |
| $200–$1,000              | 10 (10.5)    | 7 (28)       | 18 (14.1)    |        |
| > $1,000                 | 78 (82.1)    | 15 (60)      | 105 (82)     |        |
| Educational level, N (%) |             |              |              |        |
| Primary                  | 46 (48.4)    | 21 (84)      | 21 (16.4)    | .001   |
| High school              | 12 (12.6)    | -            | 19 (14.8)    |        |
| Graduate                 | 37 (38.9)    | 4 (16)       | 88 (68.8)    |        |
| Infertility, N (%)       | 9 (9.5)      | 3 (12)       | 12 (9.4)     | .9     |
| Nulliparity, N (%)       | 14 (14.7)    | 3 (12)       | 40 (31.3)    | .006   |
| Occupational status      |             |              |              |        |
| Housewife                | 48 (50.5)    | 20 (80)      | 28 (21.9)    | <.0001 |
| Employee                 | 47 (49.5)    | 5 (20)       | 100 (78.1)   |        |
| FSFI score (mean ± SD)   | 17.9 ± 3.4   | 22.7 ± 2.7   | 24.4 ± 6.0   | <.0001 |
| Desire                   | 2.2 ± 0.7    | 3.3 ± 0.8    | 3.5 ± 1.5    | <.0001 |
| Arousal                  | 2.4 ± 0.6    | 3.9 ± 0.5    | 3.9 ± 1.3    | <.0001 |
| Lubrication              | 3.2 ± 0.6    | 4.0 ± 0.7    | 3.9 ± 0.8    | <.0001 |
| Orgasm                   | 3.0 ± 0.7    | 3.7 ± 0.6    | 4.3 ± 1.0    | <.0001 |
| Satisfaction             | 2.6 ± 0.7    | 4.0 ± 0.9    | 4.1 ± 1.4    | <.0001 |
| Pain                     | 3.6 ± 1.2    | 4.3 ± 0.9    | 4.5 ± 1.1    | <.0001 |

Bolding indicates statistical significance.

BMI = body mass index; FSD = female sexual dysfunction; FSIAD = female sexual interest/arousal disorder; SD = standard deviation.

Table 2. Discriminant Capability of the Turkish Version of the Female Sexual Distress Scale-Revised (Tr-FSDS-R) at Cutoff Score 11.5 in Women with FSIAD Compared with Normal Sexual Function

|                   | FSIAD (mean ± SD) | Other FSD (mean ± SD) | No FSD (mean ± SD) | p     |
|-------------------|-------------------|-----------------------|--------------------|-------|
| N                 | 95                | 25                    | 138                |       |
| Day 0             | 31.3 ± 10.9       | 26.2 ± 6.9            | 7.5 ± 6.3          | <.0001*|
| Day 15            | 32.1 ± 11.8       | 28.2 ± 7.6            | 8.7 ± 7.5          | <.0001*|

ANOVA test with post hoc test; same superscript (*) means $P < .05$ for each other within the same row.

FSDS-R = Female Sexual Distress Scale-Revised; FSD = female sexual dysfunction; FSIAD = female sexual interest/arousal disorder; SD = standard deviation.
To evaluate the factor structure of the Turkish version of FSDS-R, single unrotated principal component analysis was conducted. Based on this analysis, a one-factor unidimensional model was established, which explained 85.7% of the total variance of the Tr-FSDS-R items (Table 5). All items clustered in a predicted fashion had relatively high factor loadings, supporting the factor validity of the Tr-FSDS-R.

Correlation analysis for convergent validity showed negative and statistically significant correlations between the FSDS-R and the arousal, orgasm, and satisfaction FSFI domains ($r = -0.21$, $r = -0.41$ and $r = -0.32$, respectively). Correlation with orgasm dimension of FSFI and FSDS-R was moderate ($P < .01$). In addition, correlation analysis of all 13 items of FSDS-R with total FSDS-R score demonstrated significantly good correlation, and Pearson correlation score ranges from 0.41 to 0.69 ($P < .01$) (Table 6).

Discriminant ROC analysis Tr-FSDS-R total score demonstrated that AUC for the total FSDS-R score was 0.92 (range 0.87–0.96) at baseline, confirming the good discriminant validity of the scale (Figure 1). The optimal cutoff score was found to be $>11.5$ to provide optimal sensitivity (97.9%) and specificity (83.2%). Sensitivity, specificity, false positive, and false negative values for the determination of FSIAD with the cutoff score $>11.5$ at day 0 and day 15 are presented in Table 7.

### DISCUSSION

The prevalence of FSIAD was 38.3% in our study population (collected by call), and prevalence of other FSD was 10.1%. Our prevalence was compatible with previous studies that reported the prevalence of FSD and was 47% in our Turkish female population. When we use a cutoff score of 11.5 according to the FSDS-R, the prevalence of female sexual distress were 12.5% ($n = 16$) for the healthy women (women with no FSD) in our study population. However, the prevalence of sexual distress in healthy women was reported as 22–24% in two U.S. national probability samples. Self-reported sexual problems, mainly HSDD, were identified in about 40% of the U.S. population.

Sexual problems associated with personal distress were much less common, although reported by approximately 12% of women in the same study population. The differences in prevalence can be explained with cultural, educational, and social differences. Socioeconomic and demographic variables such as age, race, marital status, partner status, employment, and level of education were independently and significantly associated with FSD. Sexual functional problems increased with age, but female sexual distress problems were more common in middle-aged women than in younger or older women.

Other possible explanations are still high rates of arranged marriages instead of love marriages in Turkish family structure, low knowledge about sexuality, and being ashamed of talking and discussing sexuality. Stephenson and Meston showed that low desire was associated with increased distress only in low-intimacy relationships.

In the original validation study, the authors suggested a cutoff score of 11 for the discrimination between HSDD patients and healthy individuals. In the Farsi version, the research population characteristics were similar to our population due to cultural proximity, reported the cutoff score of 10.5, whereas a Polish version proposed a cutoff score of 13. In the Farsi version, the research population characteristics were similar to our population due to cultural proximity, reported the cutoff score of 10.5, whereas a Polish version proposed a cutoff score of 13. In our study, the highest ICC being 0.94 at day 0 and 0.92 at day 15 are presented in Table 7.

The Tr-FSDS-R was also highly reproducible across the 2-week interval, with higher ICC values in FSD and healthy women. Reproducibility of this tool after a week and even after a 4-week interval had been reported in the original validation study and other linguistic validation studies. The highest ICC being found between day 7 to day 28 in original validation studies and linguistic validation studies of the FSDS-R (Polish and Farsi).

### Table 3. Internal Consistency (Cronbach alpha) of the Turkish Version of the Female Sexual Distress Scale-Revised (Tr-FSDS-R)

|           | FSIAD  | Other FSD | No FSD |
|-----------|--------|-----------|--------|
| Day 0     | 0.96   | 0.97      | 0.87   |
| Day 15    | 0.98   | 0.97      | 0.99   |

FSD = female sexual dysfunction; FSIAD = female sexual interest/arousal disorder.

### Table 4. Test–Retest Reliability of the Turkish Version of FSDS-R

|          | FSIAD | Other FSD | No FSD |
|----------|-------|-----------|--------|
| ICC (95% CI) | 0.94 (0.91–0.96) | 0.92 (0.84–0.96) | 0.92 (0.89–0.94) |

CI = confidence interval; ICC = intraclass correlation coefficient; FSDS-R = Female Sexual Distress Scale-Revised; FSD = female sexual dysfunction; FSIAD = female sexual interest/arousal disorder.
memory, practice, or mood more likely, whereas a longer interval increases the chances that a change in status could occur. According to this argument, we performed the test—retest reliability for the stability of the FSDS-R in a 2-week interval.

In our study population, women with female sexual interest/arousal disorder reported the highest levels of sexual distress compared with the other FSD types and healthy controls. Discriminant validity analysis of our results showed that Tr-FSDS-R was able to differentiate between female sexual interest/arousal disorder and other types of sexual dysfunction with normal sexual functions successfully. Also consistent with previous reports and linguistic validation studies, sexually healthy women reported significantly lower FSDS-R scores compared with women suffering from low sexual interest/arousal or from any other type of FSD.

Analysis of construct validity was carried out to test whether the Derogatis’s original one-factor model could be replicated in our present sample. Factor analysis stated the previously suggested one-factor model solution also produced a perfect fit in our Turkish sample. Similar results were presented in the Polish and Farsi validation study and showed one-factor solution to provide best fit to data. The 13 items of the scale loaded consistently on the same underlying factor with stable one-dimensional structure.

**LIMITATIONS**

Finally, this study had the following limitations. First, study sample was small and not fully representative of all Turkish women, although it was large enough to draw reasonable conclusions. Second, study sample was homogenous: mostly middle-aged, mostly premenopausal women who were not taking oral contraceptives or hormonal replacement and monogamic. The lack of use of the depression survey was another weak point of this study, but we excluded the women with known depression and anxiety or who use antidepressants. Data about sexual activity such as caressing, foreplay, vaginal intercourse, masturbation, vaginal, anal or oral intercourse, and frequency of sexual activity would contribute to the results. Recruitment of participants outside the hospital, not from admission to hospital, is the major strength of the study. After all these limitations, the

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**Table 5. Single Unrotated Principal Component Analysis of the Turkish Version of the Female Sexual Distress Scale-Revised (Tr-FSDS-R)**

| Item                                      | Factor 1 |
|-------------------------------------------|----------|
| Distressed about your sex life            | 0.91     |
| Unhappy about your sexual relationship    | 0.91     |
| Guilty about sexual difficulties         | 0.94     |
| Frustrated by your sexual problems        | 0.92     |
| Stressed about sex                       | 0.93     |
| Inferior because of sexual problems       | 0.93     |
| Worried about sex                        | 0.94     |
| Sexually inadequate                      | 0.92     |
| Regrets about your sexuality              | 0.94     |
| Embarrassed about sexual problems         | 0.91     |
| Dissatisfied with your sex life           | 0.92     |
| Angry about your sex life                 | 0.93     |
| Bothered by low sexual desire             | 0.90     |
| Eigenvalue                                | 11.1     |
| % of explained variance                   | 85.7%    |

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**Table 6. Pearson Correlation Coefficients Between FSDS-R Items and FSDS-R Total Scores, FSFI Total Scores, and FSFI Domain Scores**

| Item  | Total FSDS-R | Total FSFI | Desire | Arousal | Lubrication | Orgasm | Satisfaction | Pain |
|-------|--------------|------------|--------|---------|-------------|--------|--------------|------|
| Item 1| 0.58**       | 0.26**     | 0.30** | 0.40**  | 0.22*       | 0.19*  | 0.23**       | −0.07|
| Item 2| 0.50**       | 0.42**     | 0.42** | 0.50**  | 0.38**      | 0.36** | 0.30**       | 0.0  |
| Item 3| 0.55**       | 0.31**     | 0.28** | 0.40**  | 0.23**      | 0.24** | 0.21*        | −0.04|
| Item 4| 0.53**       | 0.30**     | 0.31** | 0.42**  | 0.29**      | 0.22*  | 0.21*        | −0.03|
| Item 5| 0.60**       | 0.30**     | 0.29** | 0.40**  | 0.26**      | 0.20*  | 0.26**       | −0.06|
| Item 6| 0.48**       | 0.30**     | 0.29** | 0.38**  | 0.26**      | 0.26** | 0.20*        | −0.03|
| Item 7| 0.50**       | 0.35**     | 0.30** | 0.46**  | 0.30**      | 0.26** | 0.22*        | 0.02 |
| Item 8| 0.51**       | 0.20*      | 0.22*  | 0.29**  | 0.14        | 0.16   | 0.08         | 0.02 |
| Item 9| 0.44**       | 0.22*      | 0.23** | 0.32**  | 0.20*       | 0.20*  | 0.11         | −0.02|
| Item 10| 0.60**      | 0.31**     | 0.33** | 0.35**  | 0.31**      | 0.21*  | 0.29**       | −0.03|
| Item 11| 0.69**      | 0.19*      | 0.23** | 0.28**  | 0.15        | 0.02   | 0.16         | 0.02 |
| Item 12| 0.65**      | 0.25**     | 0.25** | 0.30**  | 0.23**      | 0.15   | 0.21*        | −0.04|
| Item 13| 0.41**      | 0.28**     | 0.30** | 0.37**  | 0.24**      | 0.21*  | 0.13**       | 0.02 |
| Total FSDS-R | 1         | −0.19*     | 0.02   | −0.21*  | −0.09       | −0.41**| −0.32**      | −0.13|

*P < .05; **P < .01.*

FSDS-R = Female Sexual Distress Scale-Revised; FSFI = Female Sexual Function Index.
findings are in agreement with the validation study of the original FSDS-R.

CONCLUSIONS

The results of this study are that the Turkish version of FSDS-R is a valid, reliable tool with well-discriminative and psychometric validity for the use in Turkish female population and can be used as a screening questionnaire for females with sexual interest/arousal disorder. The score of ≥11.5 was proposed as a cutoff to detect the presence of sexually related personal distress in Turkish women with FSD. The development of the Turkish version of FSDS-R will allow us to measure sexual function related to sexual distress and affect on women’s quality of life in the Turkish speaking population. This will enhance our knowledge of how and to what extent cultural, social differences, family structure, and religious beliefs affect sexual distress that is considered as an obligation for the definition of sexual dysfunction.

Table 7. Discriminant Capability of the Turkish Version of the Female Sexual Distress Scale-Revised (Tr-FSDS-R) at Cutoff Score 11.5 in Women with FSIAD Compared with Normal Sexual Function

|             | Sensitivity (%) | Specificity (%) | False positives (%) | False negatives (%) |
|-------------|-----------------|-----------------|---------------------|---------------------|
| Day 0       | 98.3            | 87.5            | 0.8                 | 6.5                 |
| Day 15      | 97.5            | 77.3            | 1.2                 | 11.7                |

FSIAD = female sexual interest/arousal disorder.

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Category 3
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