Sexual dysfunction in Turkish women with dyspareunia and its impact on the quality of life

B. Artunc Ulkumen, M.M. Erkan, H.G. Pala, Y. Bulbul Baytur

Obstetrics and Gynecology Department, Celal Bayar University School of Medicine, Manisa (Turkey)

Summary

Purpose of Investigation: The authors aimed to determine the prevalence of female sexual dysfunction (FSD) among Turkish dyspareunic women and to establish the associated factors with FSD. Furthermore, they aimed to investigate if dyspareunia and possible associated sexual complaints were related to impaired quality of life (QoL). *Materials and Methods:* The study included 154 women admitted to the present gynecology department at a tertiary center in the west region of Turkey, 67 of which suffered from dyspareunia. The remaining 87 sexually healthy women were included in the control group. FSD was assessed with 19-item validated female sexual function index (FSFI). QoL was assessed using short form 36 (SF-36). The chi-squared test and t-test were used for analysing the group differences. Pearson's correlation test was used to determine the effect of the variables of FSFI on the SF-36. Multivariance analysis and logistic regression was used to determine independent risk factors for FSD and to estimate odds ratio (OR) with 95% confidence interval (CI). *Results:* The incidence of FSD in dyspareunic group and control group was 86.57% and 36.8%, respectively ($p < 0.001$). Dyspareunic women had lower scores with regards to sexual desire, arousal, lubrication, orgasm, satisfaction, and pain domains at significant level ($p < 0.001$). Education level, time period after the last delivery, duration of marriage, parity, and dyspareunia were significantly related to FSD. However, dyspareunia was an independent risk factor for FSD (OR 11.49; 95% CI 4.95-26.67). Regarding the impact on the QoL, dyspareunic women had lower scores with regards to the physical role, social function, bodily pain, and vitality domains. *Conclusion:* The present results show that dyspareunia has a major impact on women's sexual function and QoL. Clinicians have an important role for encouraging women to report their sexual complaints. Identifying dyspareunia and treating FSD may positively affect women's sexual function and overall QoL.

Key words: Dyspareunia; Female sexual dysfunction; FSD; FSFI; SF-36.

Introduction

Female sexual dysfunction (FSD) was classified according to the two main systems until 1998s: 1) Regarding the International Classification of Diseases-10 (ICD-10) of the World Health Organisation (WHO), FSD is the various ways in which a person is unable to participate in a sexual relationship as he or she would wish." [1]. 2) Regarding the classification of the mental disorders (DSM-4) of the American Psychiatric Association, FSD is comprised of the disorders in sexual desire and in the psycho-physiological changes that characterize the sexual response cycle and lead to marked distress and interpersonal difficulty [2]". In 1998, American Foundation of Urological Diseases (AFUD) proposed a classification including the criteria of both DSM-4 and ICD-10 and also including psychogenic and organic causes [3]. Accordingly, FSD is classified into four main categories: 1) sexual desire disorders; 2) sexual arousal disorders; 3) orgasmic disorders; 4) sexual pain disorders [3].

The estimated prevalence of female sexual dysfunction is approximately 40-50% [4]. However, the point is that all sexual plaints do not cause personal distress or interpersonal difficulty.

Revised manuscript accepted for publication October 8, 2013

Clin. Exp. Obst. & Gyn. - ISSN: 0390-6663
XLI, n. 5, 2014
doi: 10.12891/ceog17952014

The commonly used scales in order to evaluate female sexual function are brief index of sexual function (BISF), Index of female sexual function (IFSF), and female sexual function index (FSFI) questionnaires. The FSFI is useful for assessing specific domains of sexual function such as sexual arousal, desire, satisfaction, lubrication, orgasm, and pain [5].

Whether dyspareunia affects the other sexual functions like desire or arousal or whether lower sexual scores are associated with impaired quality of life (QoL) is assured very little.

The authors aimed to investigate the association of sexual complaints between women with dyspareunia and sexually healthy women. Furthermore, they aimed to investigate if dyspareunia and possible associated sexual complaints were related to impaired QoL. They hypothesize that women with dyspareunia have also other sexual complaints, including sexual desire or arousal decrease, which result in low QoL.

Materials and Methods

Study design, study setting, and participants

This is a cross-sectional case-control study comprising of sexually active, reproductive-aged women with a stable sexual partner, admitted to the present gynecology outpatient clinic between February 2013 and June 2013. The study was approved by the Institutional Ethics Committee. Two hundred women were asked to participate in the study. Sixty-seven women with dyspareunia and 87 sexually healthy women were included in the study and completed the questionnaires. Forty-six women rejected to complete the FSFI questionnaire.

Table 1. — *Demographic features of the dyspareunia and control group.*

	Dyspareunia n=67	Control group n=87	*p*
Age (mean±SD)	32.94 ± 9.50	32.29 ± 9.50	0.673
Parity (mean±SD)	1.58 ± 1.35	1.19 ± 0.96	*0.040**
Gravida (mean±SD)	2.22±1.55	1.82 ± 1.31	0.890
Abortus (mean±SD)	0.60 ± 0.85	0.62 ± 0.71	0.822
Education level			0.062
Primary school	36	34	
High school	27	43	
University	4	10	
Occupational status			0.275
Housewife	52	72	
Employed	15	15	
Level of income			*0.002**
Low	15	10	
Moderate	49	59	
Good	3	18	
Mode of delivery			0.459
No delivery	15	27	
SVL	31	33	
CS	17	23	
SVL, then CS	4	4	
Contraceptive use			0.275
Non-user	24	34	
Barrier use	13	17	
COC's	4	7	
RIA	8	15	
Traditional	12	13	
Tubal sterilisation	6	1	

*significant

Table 2. — *FSFI scores in dyspareunia and control groups.*

	Dyspareunia n=67	Control group n=87	*p*
Desire (mean±SD)	2.60 ± 1.12	3.25 ± 0.90	< 0.001
Arousal (mean±SD)	2.75 ± 1.22	3.60 ± 1.24	< 0.001
Lubrication (mean±SD)	3.11 ± 1.56	4.24 ± 1.48	< 0.001
Orgasm (mean±SD)	2.95 ± 1.70	4.41 ± 1.54	< 0.001
Satisfaction (mean±SD)	3.69 ± 1.55	5.14 ± 1.16	< 0.001
Pain (mean±SD)	2.48 ± 1.22	4.97 ± 2.90	< 0.001
Total score (mean±SD)	17.58 ±6.92	25.31 ± 5.80	< 0.001

Table 3. — *SF-36 scores in dyspareunia and control groups*

	Dyspareunia	Control group	*p*
Physical function (PF) (mean±SD)	63.34 ± 19.13	74.21 ± 21.98	0.09
Restriction of physical role (RP) (mean±SD)	51.36 ± 38.88	72.17 ± 34.80	0.05
Bodily pain (BP) (mean±SD)	47.20 ± 22.52	63.79 ± 26.12	*0.01*
General health (GH) (mean±SD)	47.40 ± 18.38	66.46 ± 58.54	0.30
Vitality (VT) (mean±SD)	41.13 ± 17.34	53.81 ± 20.91	*0.01*
Social function (SF) (mean±SD)	55.67 ± 23.92	69.71 ± 24.92	0.05
Restriction of emotional role (RE) (mean±SD)	49.90 ± 34.34	68.00 ± 34.23	0.09
Mental health (MH) (mean±SD)	51.76 ± 15.88	60.08 ± 18.10	0.15

Women with neurologic diseases such as history of stroke, spinal cord injury, parkinson disease, multiple sclerosis; women with genital atrophy, previous genital surgery; women with endocrinopathies such as thyroid disease, diabetes, hyperprolactinoma; women with peripheric vascular disease; women taking some medications like antihistamines, antiandrogens, sedatives, antidepressants, and hypnotics, were excluded from the study. Women who were not sexually active, or women having pregnancy or being in puerperium, were also excluded from the study. Women who could not complete questionnaires were also excluded. All the participants signed informed consent at the time of the visit at outpatient clinic, completed the study questionnaire during the same day, and returned it to the doctor at the outpatient clinic.

Outcome measures and instruments

The primary outcome in this study is sexual function assessment of the women with dyspareunia compared to the sexually healthy women. The assessment was made with the 19-item validated FSFI [5]. The Turkish version of the FSFI was validated by Oksuz and Malhan [6]. The FSFI determines sexual function status and complaints during the last four weeks. The questionnaire consists of six main domains of sexual function: sexual desire, arousal, lubrication, orgasm, satisfaction, and pain. For each domain, a score is computed. Total score is the sum of the all domains. The minimum total score is 2.0, and the maximum total score is 36.0. A total score of more than 25.0 is mentioned as 'normal sexual function'; whereas a total score less than 25.0 is defined as FSD [6].

The secondary outcome in this study was the assessment of the quality of life in patients with dyspareunia. This assessment was made with the Turkish version of the short form-36 (SF-36) which was validated by Pinar [7]. SF-36 is a 36-item questionnaire comprising of eight main domains: physical functioning (PF), role limitations due to physical problems (RP), bodily pain (BP), general health perceptions (GH), vitality (VT), social functioning (SF), role limitations due to emotional problems (RE), and mental health (MH). Each domain is scored between 0.0 and 100.0 and evaluated separately, namely there is no total score ranging. Lower scores are associated with the impairment of that function.

Statistical analysis

The FSFI and SF-36 questionnaire scores of the women suffering from dyspareunia were compared to that of the control group. SPSS software version 20 was used for statistical analysis. The group differences were analysed with Chi-squared test and t-test. Pearson's correlation test was used to determine the effect of the variables of the FSFI on the SF-36. Multi variance analysis and logistic regression was used to determine independent risk factors for FSD. A two-tailed p value < 0.05 was considered to be statistically significant.

Results

The demographic features of the dyspareunia and control groups are shown in Table 1. Dyspareunic women had significantly higher parity and significantly lower level of income (p = 0.040 and p = 0.002 respectively). In multivariate analysis, parity and level of income were not found to be independent predictors for dyspareunia.

Table 4. — *Pearson correlation coefficients to determine of FSFI on the SF-36 scores.*

FSFI/SF-36	PF	RP	BP	GH	VT	SF	RE	MH
Total score	0.377*	0.367*	0.505*	0.162	0.305*	0.334*	0.227*	0.53
Desire	0.297*	0.249*	0.372*	0.135	0.182	0.272*	0.076	0.014
Arousal	0.245*	0.322*	0.399*	0.102	0.208*	0.268*	0.155	0.014
Lubrication	0.318*	0.230*	0.435*	0.060	0.206*	0.280*	0.150	-0.001
Orgasm	0.288*	0.326*	0.417*	0.173	0.300*	0.269*	0.223*	0.112
Satisfaction	0.367*	0.402*	0.443*	0.160	0.331*	0.311*	0.210*	0.107
Pain	0.299*	0.222*	0.316*	0.132	0.206*	0.215*	0.065	0.011

*Correlation is significant at the 0.05 level (2-tailed).

Table 5. — *Comparison of demographic variables between women with FSD and normal sexual function (NSF).*

	FSD n=90	NFS n=87	*p*
Age (mean±SD)	33.79 ± 9.73	30.86 ± 8.9	0.058
Parity	1.58 ± 1.28	1.06 ± 0.89	*0.006*
Education level			*0.035*
Primary school	49	21	
High school	34	36	
University	7	7	
Occupational status			0.527
Housewife	74	50	
Employed	16	14	
Level of income			0.098
Low	17	8	
Moderate	65	43	
Good	8	13	
Mode of delivery			0.334
No delivery	20	22	
SVL	40	24	
CS	24	16	
SVL,then CS	6	2	
Time after the last delivery (year) (mean±SD)	7.98 ± 8.60	4.99 ± 6.81	*0.022*
Contraceptive use			0.528
Non-user	31	27	
Barrier use	19	11	
COC's	5	6	
RIA	13	10	
Traditional	16	9	
Tubal sterilisation	6	1	
Duration of marriage (year) (mean±SD)	12.58 ± 10.66	9.12 ± 8.76	*0.035*
Dyspareunia *<0.001*			
(+)	58	9	
(-)	32	55	

Table 6. — *Comparison of SF-36 scores between women with FSD and NSF women.*

	FSD	NFS	*p*
Physical function (PF) (mean±SD)	65.85 ± 20.66	74.68 ± 31.58	*0.046*
Restriction of physical role (RP) (mean±SD)	54.0 ± 39.03	77.23 ± 31.58	*0.030*
Bodily pain (BP) (mean±SD)	47.53 ± 23.18	71.23 ± 23.18	*<0.001*
General health (GH) (mean±SD)	54.96 ± 52.98	61.25 ± 20.62	0.500
Vitality (VT) (mean±SD)	43.68 ± 18.46	55.09 ± 21.45	*0.006*
Social function (SF) (mean±SD)	59.45 ± 25.35	69.28 ± 24.31	0.062
Restriction of emotional role (RE) (mean±SD)	58.13 ± 34.39	61.03 ± 37.42	0.696
Mental health (MH) (mean±SD)	55.04 ± 16.65	57.83 ± 19.07	0.447

The incidence of FSD in dyspareunia group and control group was 86.57% (58 of 67 women) and 36.8% (32 of 87 women) respectively ($p < 0.001$). FSFI scores in both groups are shown in Table 2. The women with dyspareunia had lower total scores and lower scores in each of the six domains at the statistically significant level ($p < 0.001$).

Table 3 shows SF-36 scores in dyspareunia and control groups. Women with dyspareunia had lower RP and SF scores at *p 0*.05 level; lower BP and VT scores at *p* 0.01 level.

The correlations between FSFI scores and SF-36 domains are shown in Table 4. Total FSFI scores showed positive correlations with PF, RP, BP, VT, SF, and RE at significant level. Furthermore, total FSFI scores were highly correlated to BP (r 0.505).

The demographic features of the FSD and NSF groups are shown in Table 5. Parity, duration of the marriage, time period after the last delivery, education level, and dyspareunia were significantly related to FSD. Dyspareunia was independent risk factor for developing FSD (OR 11.49; CI 4.95-26.67).

Table 6 shows SF-36 scores in FSD and NSF groups. Women with FSD had lower PF, RP, BP, and VT scores at significant level ($p < 0.05$).

Discussion

FSD is a common problem accounting for 40% to 50% of all women [4, 8, 9]. Recent Turkish studies estimated similar rates of FSD such as 48.3% [6], 46.9% [10], and 50%

[11]. İn a recent study from Iran, FSD rate was reported as 56% among infertile women [12]. Dyspareunia is a very common and probably under-estimated clinical condition which deteriorates women's sexual life. FSD was as high as 86.57% in the present dyspareunia group. Whether dyspareunia itself is a sexual dysfunction or whether it should be handled as a part of generalized pain syndrome is still controversial. Due to interfering with sexual intercourse, it has been classically thought as a sexual dysfunction [13]. However, the typical pain of dyspareunia can be created also by non-sexual stimuli such as gynecologic examination or tampon insertion. In the recent classification of DSM, dyspareunia was classified as genital pain disorders [4,13]. The present authors hypothesized that dyspareunia affects a woman's sexual life at multidimensional aspects. In a Turkish study by Dogan comprising of 54 women admitted to a psychiatry department with sexual complaints, the most common FSD was vaginismus which was highly correlated with dyspareunia. In vaginismic women, there was also a high frequency of hypoactive desire and orgasm disorders [14]. Similarly in the present study, beside the pain domain, dysparonic women had significantly lower scores in sexual desire, arousal, lubrication, orgasm, and satisfaction domains. Vaginismus and dyspareunia are classified together as pain disorders and they cannot truly be differentiated from each other [13]. Furukawa *et al.* evaluated dyspareunia and sexual function in infertile women. The rate of dyspareunia was 37.6% in controls and 30.7% in infertile group. The rate of FSD was not significantly different in both groups [15].

In this study, the authors also evaluated the associated factors affecting FSD. Low education level, time period after the last delivery, duration of marriage, and presence of dyspareunia were main predictors for FSD ($p < 0.05$). Furthermore, dyspareunia was independent risk factor for FSD. Women suffering from dyspareunia were 11 times more vulnerable for developing FSD. In contrast to the present study, age was the main risk factor for some other studies [12, 16].

Healthy sexual life is one of the major components of well-being and quality of life. In the present study, dyspareunic women had significantly lower scores in RP, BP, VT, and SF domains. Total FSFI scores showed positive correlations with PF, RP, BP, VT, SF, and RE at significant level. Dyspareunia clearly has significant impact on women's sexual life and quality of life. Similarly, Knoepp *et al.* showed that dyspareunic women had clinically significant levels of sexual stress [17]. In this aspect, it is very important to evaluate dyspareunic women to improve their overall QoL .

As dyspareunic women had lower scores for vitality and bodily pain, they are more vulnerable to depression. The main limitation of this present study was that the authors excluded only women self-reporting depressive symptoms or using medications affecting sexual function such as SSRI's. However, women who may have concomitant depression without reporting symptoms were included in the study. The second limitation was that the possible concomitant factors, such as partner compatibility, was not assessed in this study. However, recent studies showed no significant relation between FSD and partner's sexual performance difficulties [17]. The third limitation was the population sample. The present study population consisted of women living at the west region in Turkey, where the generality of the population was conservative. Therefore, the present results cannot be generalized to the whole population in Turkey.

On the other hand, the present study is unique as it assessed the associated factors to FSD in dyspareunic women and as it assessed the association of dyspareunia to both FSD and QoL. The results showed that dyspareunia had strong association to FSD (OR 11.49). The authors additionally found that the greater the time period after the last delivery and the greater the duration of the marriage, the greater was the FSD. Besides, the lower the women's education level, the greater was the FSD. However, these features were not found to be independent predictors of FSD in the present multivariate statistical model. Dyspareunia was the only independent predictor for FSD in the present multivariate model. Furthermore, the authors found no association between the mode of contraception, the mode of delivery, woman's occupational status, socio-economic status, and FSD. However, the present study population may have not been large enough to establish this association.

FSD with longer duration of marriage may be due to decreased interest of the partners to each other, financial problems, or it simply may be a physiologic result of normal sexual behavior. In a study from Germany comprising of 1,865 students aged 19–32 who reported to be heterosexual and to live in a steady partnership, the association of duration of relationship and sexual motivation was evaluated. Similarly to the present results, they proposed that sexual activity decreased as the duration of partnership increased. Besides, sexual desire declined only in women as the duration of partnership increased [18].

FSD in women with longer duration after the last delivery was not assessed before. The present authors suppose that FSD may be due to increased responsibilities of the partners to their growing children and parents may face with some different problems of their children as they grow up (childrens's needs, financial need for school, problems during adolescence period etc.).

Regarding the contraceptive methods, Li *et al*. evaluated the impact of the commonly used contraceptive methods on the QoL and sexual function among 361 Hong Kong Chinese women. They suggested that the combined oral contraceptives (COC), intrauterine devices, and female sterilization do not have significantly adverse effect on women's sexual life and QoL [19].

Regarding the mode of delivery, similarly to the present results, Baytur *et al.* suggested that there was no significant

relation between long-term sexual function and mode of delivery [20]. However, in early postpartum period, women with vaginal delivery had better sexual scores [21].

Conclusion

The present authors suggest that FSD is very common among dyspareunic woman. Dyspareunia is the only independent predictor for FSD. Additionally, dyspareunia and FSD have negative impact on QoL at multidimensional aspects. Clinicians have an important role for encouraging women to report their sexual complaints. İdentifying dyspareunia and treating FSD may positively affect on women's sexual function and overall QoL.

References

[1] World Health Organization: "ICD-10: International statistical classification of diseases and related health problems". Geneva: World Health Organization, 1992.

[2] American Psychiatric Association: "Diagnostic and statistical manual of mental disorders". 4th ed. Washington, DC: American Psychiatric Association, 1994, 493.

[3] Basson R., Berman J., Burnett A., Derogatis L., Ferguson D., Fourcroy, *et al.*: "Report of the international consensus development conference on female sexual dysfunction: definitions and classifications". *J. Urol.*, 2000, *163*, 888.

[4] American College of Obstetricians and Gynecologists Committee on Practice Bulletins-Gynecology: "ACOG Practice Bulletin No. 119: Female sexual dysfunction". Obstet. Gynecol., 2011, *117*, 996. doi: 10.1097/AOG.0b013e31821921ce.

[5] Rosen R., Brown C., Heiman J., Leiblum S., Meston C., Shabsigh R., *et al.*: "The Female Sexual Function Index (FSFI): a multidimensional self-report instrument for the assessment of fenale sexual function". *J. Sex. Marital Ther.*, 2000, *26*, 191.

[6] Oksuz E., Malhan S.: "Prevalence and risk factors for female sexual dysfunction in Turkish women." *J. Urol.*, 2006, *175*, 654.

[7] Pinar R.: "Reliability and construct validity of the SF-36 in Turkish cancer patients." *Qual. Life Res.*, 2005, *14*, 259.

[8] Nazareth I., Boynton P., King M.: "Problems with sexual function in people attending London general practitioners: cross sectional study". *BMJ*, 2003, *327*, 423

[9] Geiss I.M., Umek W.H., Dungl A., Sam C., Riss P., Hanzal E.: "Prevalence of female sexual dysfunction in gynecologic and urogynecologic patients according to the international consensus classification". *Urology*, 2003, *62*, 514.

[10] Cayan S., Akbay E., Bozlu M., Canpolat B., Acar D., Ulusoy E.: "The prevalence of female sexual dysfunction and potential risk factors that may impair sexual function in Turkish women". *Urol. Int.*, 2004, *72*, 52.

[11] Basok E.K., Atsu N., Rifaioglu M.M., Kantarci G., Yildirim A., Tokuc R.: "Assessment of female sexual function and quality of life in predialysis, hemodialysis, and renal transplant patients". *Int. Urol. Nephrol.*, 2009, *41*, 473. doi: 10.1007/s11255-008-9475-z. Epub 2008 Oct 14.

[12] Pakpour A.H., Yekaninejad M.S., Zeidi I.M., Burri A.: "prevalence and risk factors of the female sexual deysfunction ina sample of infertile Iranian women". *Arch. Gynecol. Obstet.*, 2012, *286*, 1589.

[13] Binik Y.M.: "The DSM Diagnostic criteria for dyspareunia". *Arch. Sex. Behav.*, 2010, *39*, 292.

[14] Dogan S.: "Vaginismus and accompanying sexual dysfunctions in a Turkish clinical sample". *J. Sex. Med.*, 2009, *6*, 184. doi: 10.1111/j.1743-6109.2008.01048.x.

[15] Furukawa A.P., Patton P.E., Amato P., Li H., Leclair C.M.: "Dyspareunia and sexual dysfunction in women seeking fertility treatment". *Fertil. Steril.*, 2012, *98*, 1544.e2. doi: 10.1016/j. fertnstert. 2012.08.011. Epub 2012 Sep 6.

[16] Hayes R., Dennerstein L.: "The impact of aging on sexual function and sexual dysfunction in women: a review of population-based studies". *J. Sexual. Med.*, 2005, *2*, 317.

[17] Knoepp L.R., Shippey S.H., Chen C.C., Cundiff G.W., Derogatis L.R., Handa V.L.: "Sexual complaints, pelvic floor symptoms and sexual distress in women over forty". *J. Sex. Med.*, 2010, *7*, 3675.

[18] Klusmann D.: "Sexual motivation and the duration of partnership". *Arch. Sex. Behav.*, 2002, *31*, 275.

[19] Li R.H., Lo S.S., Teh D.K., Tong N.C., Tsui M.H., Cheung K.B., Chung T.K.: "Impact of common contraceptive methods on quality of life and sexual function in Hong Kong Chinese women". *Contraception*, 2004, *70*, 474.

[20] Baytur Y.B., Deveci A., Uyar Y., Ozcakir H.T., Kizilkaya S., Caglar H.: "Mode of delivery and pelvic floor muscle strength and sexual function after childbirth". *Int. J. Gynaecol. Obstet.*, 2005, *88*, 276. Epub 2005 Jan 20.

[21] Lyndon-Rochelle M.T., Holt V.L., Martin D.P.: "Delivery method and self-reported postpartum general health status among primiparous women". *Paediatr. Perinat. Epidemiol.*, 2001, *15*, 232.

Address reprint requests to:
H.G. PALA, M.D.
Obstetrics and Gynecology, Celal Bayar University School of Medicine Obstetrics and Gynecology Department, Manisa, Turkey Celal Bayar University Hafsa Sultan Hospital Uncubozkoy, Manisa, 45210 (Turkey)
e-mail: gursoypala@yahoo.com