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Sexual functioning in hemodialysis patients and their spouses: results of a prospective study from Turkey

Aims: This study aimed to evaluate sexual functioning among hemodialysis patients and their spouses.

Materials and Methods: The study was conducted by the Consultation Liaison Psychiatry Division at the Hemodialysis Unit of the Department of Nephrology, Ankara University, School of Medicine as well as 3 private dialysis centers in Ankara. The study group consisted of 45 hemodialysis patients and their spouses. All couples filled out a socio-demographic and occupational data form and a validated Turkish version of the Arizona Sexual Experiences Scale. The couples were also evaluated by a psychiatrist using the Hamilton Depression Scale, Hamilton Anxiety Scale, and Mini Mental State Examination.

Results: Forty-five patients undergoing hemodialysis treatment and their spouses participated in the study. The mean age of the patients was 47.15 ± 10.25 years and the mean age of the spouses was 45.20 ± 10.34 years. The Structured Clinical Interview for DSM Disorders-Clinical Version revealed that among 45 couples, 30 patients and 13 spouses fulfilled the diagnostic criteria for a psychiatric diagnosis ($P = 0.001$), commonly for depression. Comparisons of the Arizona Sexual Experiences Scale items (drive, arousal, penile erection/vaginal lubrication, ability to reach orgasm, and satisfaction with orgasm) revealed higher scores for arousal, erection/lubrication, satisfaction subscales, and the total Arizona Sexual Experiences Scale ($P < 0.05$) in the patient group than in the spouse group, and sexual problems were significantly more common in female spouses ($P < 0.05$).

Conclusions: Sexual function disorders were mostly seen in male hemodialysis patients, but in the spouse group, the incidence of sexual disorders was higher in female spouses. We suggest that sexual assessment of these patients should be integrated into routine examination, and cooperation of nephrology and psychiatric team is essential for the therapy of hemodialysis patients and their spouses.

Key Words: Hemodialysis, spouses, sexuality

Hemodiyaliz hastaları ve eşlerinde cinsel işlev: Türkiye’den prospektif bir çalışmanın sonuçları

Amaç: Bu çalışma hemodiyaliz hastaları ve eşlerinde cinsel işlevi değerlendirmeyi amaçlamaktadır.

Yöntemler: Çalışma, Ankara Üniversitesi Tıp Fakültesi Konsültasyon Liyezon Psikiyatrisi Bilim Dalı tarafından Ankara Üniversitesi Tıp Fakültesi Nefroloji Anabilim Dalı Hemodiyaliz Ünitesi ve Ankara’da bulunan 3 özel diyaliz merkezinde gerçekleştirilmiştir. Örneklem 45 hemodiyaliz hastası ve eşlerinden oluşmaktadır. Çalışmaya katılan bütün çiftler sosyo demografik veri formu ve Arizona Cinsel Yaşantılar Ölçeğini (ACYÖ) doldurmuşlardır. Daha sonra çiftler bir psikiyatrist tarafından Hamilton Depresyon Ölçeği (HDÖ), Hamilton Anksiyete Ölçeği (HAÖ) ve Mini Mental Durum Değerlendirme (MMDE) testi uygulanarak değerlendirilmişlerdir.

Bulgular: Çalışmaya 45 hemodiyaliz hastası ve eşi katılmıştır. Hastaların ortalama yaşı $47,15 \pm 10,25$ yıl, eşlerinin ortalama yaşı ise $45,2 \pm 10,34$ yıldır. DSM Bozuklukları için Yapılandırılmış

Received: November 12, 2008
Accepted: January 22, 2009

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Klinik Görüşme-Klinik Versiyon ile 45 çiftten 30 hasta ve 13 eş psikiyatrik bir hastalık için tanı kriterlerini karşılamışlardır (P = 0,001), en sık konulan tanı ise depresyondur. ACYÖ maddelerinin karşılaştırılmasında (istek, uyarılma, sertleşme/vajinal kayganlık, orgazm yaşama, memnuniyet) hastalar ve eşler arasında uyarılma, sertleşme/kayganlık, memnuniyet maddelerinde ve toplam ACYÖ puanında hastalar aleyhine fark olduğu görülmüştür (P < 0,05).

Sonuç: Cinsel işlev bozuklukları en sık erkek hemodiyaliz hastalarında görülmektedir, eşlerde ise, cinsel işlev bozuklukları daha sık kadınlardadır. Bu konunun gözden kaçmaması için, hemodiyaliz hastaları ve eşlerinin cinsel açıdan değerlendirilmesinin günlük rutin tanı-tedavi pratiğine girmesini ve nefroloji ve psikiyatri tedavi ekiplerinin işbirliği içerisinde çalışmasını önermekteyiz.

Anahtar Sözcükler: Hemodiyaliz, eşler, cinsellik

Introduction

Sexual function is a major factor affecting the quality of life. Although it has been reported as the most important life stressor by dialysis patients, sexual dysfunction receives very limited attention in the follow-up of these patients (1). Despite the importance of sexuality in every human's life, only 25% of patients discuss sexual dysfunction with their physicians. Moreover, it has been noted that the lack of knowledge about and conservative attitudes toward sexuality, and anxiety when discussing sexual concerns are widespread among health care providers, which further decreases the detection rate of sexual problems (2).

Successful dialysis improves most symptoms of end-stage renal disease (ESRD). However, many patients continue to experience many forms of sexual dysfunction during dialysis treatment (2,3). The incidence rate of sexual dysfunction has been reported to be 9% before the initiation of hemodialysis (HD). It increases up to 60%-70% during HD treatment due to increased stress, depression and anxiety, drugs, diet, anemia, insomnia, insufficient HD, uremia, and hormonal changes and becomes a serious stressor in patients' life (4,5). Additionally, as in many chronic illnesses, in the case of an ESRD patient, the spouse, who is expected to be the main health care provider, must accommodate to an intrusive illness with its treatment demands and is frequently called on to contend with a series of crises that may at times be unpredictable and burdensome. Although a preliminary report suggests that married HD patients have improved survival rates compared with single patients, marriage can also be a source of solace and support, or may provide an arena for conflict, anger, depression, and dissatisfaction (6,7).

Among other factors, strains on the partner may include communication problems, perceptions of decreased intimacy, and changes in the sexual relationship (8). Clinical case reports suggest that changes in sexual functioning of couples may be associated with problems in patient self-esteem and reduced physical and emotional intimacy in couples (6). Nevertheless, sexuality is known to be the best and natural way of demonstration and comprehension of emotional support between couples (9).

Although some aspects of sexual dysfunction among HD patients have been reported in the literature, literature reveals limited information on how the spouses are influenced. To the best of our knowledge, this is the first study investigating sexual functioning in HD patients as well as in their spouses with a structured clinical interview.

Materials and Methods

The study was conducted by the consultation liaison psychiatry department in the outpatient HD treatment unit at the İbni Sina Hospital of Ankara University, School of Medicine as well as 3 private HD centers where the patients were undergoing HD regularly twice a week. The study protocol was approved by the Ethics Committee of Ankara University, School of Medicine, in December 2006. All the subjects were informed on the study protocol and their informed consent for the study and permission to access medical records were obtained. The data were collected between January 2007 and April 2008.

Eligible patients and spouses were informed about the study protocol, and 45 patients and their spouses agreed to participate. Eligibility criteria

included for both were age between 18 and 65 years, medically stable condition except ESRD, and no history of hospitalization or acute illness in the preceding 3 months. Couples, one of whom had signs of dementia (failed to pass a Mini Mental Status Examination) or psychosis, were excluded from the study. In addition, presence of some practical difficulties, such as refusing participation due to religious or cultural reasons and probability of moving to another city, were the exclusion criteria.

The psychiatric status of 45 couples were assessed by a psychiatrist through a structured clinical interview (SCID-CV), which gathers information in a systematic way to make a psychiatric diagnosis according to Axis I of DSM-IV criteria.

Five categories of variables thought to effect sexual functioning examined in this study were socio-demographic features (age, HD duration, etc.), biochemical parameters, level of depression and anxiety, and cognitive impairment. Biochemical parameters including the patients' latest test results, such as calcium, phosphorus, sodium, potassium, urea, creatinine, hemoglobin, and albumin, which indicate the adequacy of dialysis, were obtained from their medical records. All the HD patients and their spouses filled out socio-demographic and occupational data form and Arizona Sexual Experiences Scale, validated Turkish version of Hamilton Depression Scale, Hamilton Anxiety Scale, and Mini Mental State Examination were applied by a psychiatrist.

The patients were informed about their psychiatric assessment results and, if necessary, about the medication they would receive.

Assessment Tools

SCID-CV is a measurement method that collects information in a systematic way to make a psychiatric diagnosis according to Axis I of DSM-IV criteria. The reliability of the Turkish translation of SCID-CV (Ozkurkcugil, et al., 1997) was evaluated by means of inter-rater reliability (10,11).

Hamilton Depression Rating Scale: The 17-item version of HDRS has become the most widely used depression severity rating scale. The total score of 17-item HDRS can range from 0 to 53. Considering the reliability and validity of the Turkish version of

HDRS, Akdemir et al (2001) reported the test-retest reliability as 0.85, the internal consistency as 0.75, and the inter-rater reliability coefficients ranging between 0.87 and 0.98 (12,13).

Hamilton Anxiety Rating Scale: HARS is used to assess severity of anxiety symptomatology. It consists of 14 items covering a series of anxiety symptoms. Each item is rated on a 5-point scale, ranging from 0 (not present) to 4 (severe). Psychometric properties of the Turkish version of the scale were evaluated by Yazıcı, et al. (1998), and sufficient outcomes were obtained (14,15).

Mini Mental State Exam: MMSE is used for the assessment of cognitive impairment. The Turkish version of MMSE indicated good reliability and validity outcomes. In our study, the patients exhibiting high levels of cognitive impairment (i.e., MMSE score lower than 24) were excluded from the study (16,17).

Sexual functioning was assessed using the validated Turkish version of *Arizona Sexual Experiences Scale (ASEX)*. ASEX is a brief 5-item scale designed to assess the core elements of sexual functioning: drive, arousal, penile erection/vaginal lubrication, ability to reach orgasm, and satisfaction with orgasm. Each item is rated with a 6-point Likert system, with lower scores reflecting enhanced sexual function and higher scores reflecting impaired sexual function. An ASEX total score of 19 or greater, any one item with an individual score of either 5 (very difficult) or 6 (never), or 3 or more items with individual scores of 4 have all been found to be highly correlated with the clinician-diagnosed sexual dysfunction (18,19).

Statistical analysis

The data from the survey responses were coded and analyzed using descriptive statistics. The results were reported as the mean and standard error (quantitative variables) or as the number and percentage (qualitative variables). Student's *t*-test was used to compare HD patients' and their spouses' depression and anxiety scale levels. Whereas ASEX totals of these 2 groups were compared with Student's *t*-test, Mann-Whitney U test was preferred in the comparisons of ASEX subscales between HD patients and spouses and biochemical parameters, depression and anxiety levels of the patients with or

without a psychiatric diagnosis. Spearman rank correlation method was used to determine the correlation of ASEX total and other parameters, and Pearson correlation method was used to determine the inter-correlations of the other parameters. $P < 0.05$ was considered statistically significant, and all the statistical tests were 2-tailed.

Results

The study involved 45 ESRD patients undergoing HD treatment and their spouses.

Demographic variables

The mean age of the patients was 47.15 ± 10.25 ranging from 20 to 65 years, and the mean age of their spouses was 45.2 ± 10.34 ranging from 24 to 64 years. Table 1 presents the data on the demographic variables of the patients and spouses.

Thirty-one of the HD patients were male and 14 were female ($P < 0.01$). The intra-group and intergroup comparisons showed no statistically significant differences for the other parameters, such as age, education, occupation, stressor, and having

Table 1. Demographic variables.

	Patients (n: 45, %)	Spouses (n: 45, %)		Patients (n: 45, %)	Spouses (n: 45, %)
Sex			Previous RT*		
Female	14 (31.1%)	31 (68.9%)	Yes	6 (13.3%)	-
Male	31 (68.9%)	14 (31.1%)	No	39 (86.7%)	-
Education			Previous PD**		
No education	3 (6.6%)	10 (22.2%)	Yes	13 (28.9%)	8 (17.8%)
Elementary	25 (55.6%)	22 (48.9%)	No	32 (71.1%)	37 (82.2%)
High school	10 (22.2%)	8 (17.8%)			
University	6 (13.3%)	5 (11.1%)			
Occupation			Sexuality after HD		
None	3 (6.7%)	1 (2.2%)	Worse	29 (64.4%)	18 (40%)
Have a job	9 (20%)	14 (31.1%)	No change	16 (35.6%)	27 (60%)
Housewife	10 (22.2%)	22 (48.9%)	Better	0 (0%)	0 (0%)
Retired	23 (51.1%)	8 (17.8%)			
Physical disorders (except ESRD)****			Causes of changes		
Yes	31 (68.9%)	21 (46.7%)	Drugs	1 (3.4%)	0 (0%)
No	14 (31.1%)	24 (53.3%)	Physical appearance	1 (3.4%)	0 (0%)
			Fear of giving harm	0 (0%)	3 (16.7%)
			Reluctance	15 (51.7%)	6 (33.3%)
			Others	12 (41.4%)	9 (50%)
Menopause					
Yes	6 (42.9%)	10 (32.3%)			
No	8 (57.1%)	21 (67.7%)			
HD duration			SCID Diagnosis		
Less than 6 months	1 (2.2%)	-	None	15 (33.3%)	32 (71.1%)
6 months-2 years	9 (20%)	-	Depression	17 (37.8%)	9 (20%)
More than 2 years	35 (77.8%)	-	Anxiety disorder	6 (13.3%)	3 (6.7%)
			AD sec. GMC***	3 (6.7%)	0 (0%)
			Other	1 (2.2%)	0 (0%)
			>1 diagnosis	3 (6.7%)	1 (2.2%)

*Previous RT; renal transplantation, ** Previous PD; psychiatric disorders, *** AD sec. GMC; Affective disorder secondary to general medical conditions, ESRD; End stage renal disease

physical problems ($P > 0.05$). SCID-CV revealed that, among 45 patients, 30 fulfilled the DSM-IV diagnostic criteria for a psychiatric diagnosis; more specifically, 17 patients had a major depressive disorder. Thirteen spouses met DSM-IV diagnostic criteria for a psychiatric diagnosis. Thus, the patients had a significantly higher rate of psychiatric diagnosis than the spouses ($P < 0.05$).

Compared to the spouses, a higher rate of HD patients reported that their sexual functioning was worse after HD ($P < 0.05$).

No significant correlation was found between the biochemical parameters of the patients, such as

calcium, phosphorus, sodium, potassium, urea, creatinine, hemoglobin, and albumin, and having a psychiatric diagnosis ($P > 0.05$).

Mean values of HDRS, HARS, and ASEX levels of the patients and spouses are listed in Table 2.

Although the comparisons of HDRS, HARS, and ASEX total scores for gender in the patient group did not reveal any significant differences ($P > 0.05$), for female spouses, HDRS, HARS, and ASEX total scores ($P < 0.05$) were significantly higher. Furthermore, these scores were significantly higher in the patient group than in the spouse group ($P < 0.05$) (Table 3). However, it must be kept in mind

Table 2. HDRS, HARS, and ASEX (1-5, total) levels.

	Patients		Spouses	
	Mean	Std. Deviation	Mean	Std. Deviation
HDRS	12.5111	7.77415	4.9778	5.62256
HARS	12.4000	7.28760	6.2889	6.37688
ASEX 1	3.7111	1.48664	3.3333	1.41421
ASEX 2	3.8667	1.47093	3.1556	1.29607
ASEX 3	3.9778	1.40598	2.9556	1.29607
ASEX 4	3.7556	1.49477	3.4000	1.37179
ASEX 5	3.8667	1.45540	2.7556	1.58337
ASEX total	18.6000	6.15482	14.0444	5.99983

HDRS; Hamilton depression rating scale, HARS; Hamilton anxiety rating scale, ASEX total; Arizona sexual experiences scale, ASEX 1; drive, ASEX 2; arousal, ASEX 3; penile erection/vaginal lubrication, ASEX 4; orgasm, ASEX 5; satisfaction

Table 3. HDRS, HARS, and ASEX total levels by gender.

	Patients			Spouses		
	Female (n:14)	Male (n:31)	P	Female (n:31)	Male (n:14)	P
HDRS	12.64 ± 6.92	12.45 ± 2.3	0.940	6.51 ± 5.99	1.57 ± 2.44	0.05*
HARS	12.50 ± 7.94	12.35 ± 7.10	0.952	8.12 ± 6.83	2.21 ± 1.92	0.03*
ASEX total	19.42 ± 6.65	18.22 ± 5.99	0.665	18.77 ± 5.11	10.00 ± 2.11	0.000*

HDRS; Hamilton depression rating scale, HARS; Hamilton anxiety rating scale, ASEX total; Arizona sexual experiences scale
* $P < 0.05$ significant

that the numbers were not controlled by a statistical evaluation method, and the number of female and male spouses were 31 and 14, respectively.

In the evaluation of whether HDRS or gender had a greater effect on ASEX total with adjusted R squared analysis, it was noticed that HDRS no longer affected ASEX total, while gender had an effect on ASEX total.

The duration of HD was shorter than 6 months only in 1 patient, whereas it was 6 months to 2 years in 9 and longer than 2 years in 35 patients. The mean of HD duration was 2.76 ± 0.48 years. One of the patients with a HD period shorter than 6 months was added to 6 month to 2 years group during the statistical analysis. Although the values of ASEX total increased with HD duration, the correlation was not significant ($P > 0.05$).

In addition, no correlation was determined between menopause and ASEX total in each group ($P > 0.05$).

In the evaluation of the ASEX total, a value of ≥ 19 was considered as sexual dysfunction (SD) (+); the comparisons of groups are presented in Table 4.

In item-by-item comparisons of the ASEX parameters (drive, arousal, penile erection/vaginal lubrication, ability to reach orgasm, and satisfaction with orgasm), the patient group had higher scores for arousal ($P = 0.017$), lubrication ($P = 0.000$), satisfaction ($P = 0.001$) subscales and ASEX total ($P = 0.043$) than the spouse group. Difference between genders in terms of ASEX parameters is presented in the Figure. Sexual problems were found to be relatively more common in females, and thus, the gender difference was significant ($P < 0.05$). Difficulties with drive and reaching orgasm were the

most frequent complaints in females in each group, whereas maintenance of erection and arousal were the most common complaints of the males. Male hemodialysis patients are most likely (Figure) to have problems of maintaining erection and arousal that are important for the initiation of a sexual intercourse. Thus, it can be hypothesized that the sexual life of his spouse will also be negatively affected. Nevertheless, the hypothesis that in case female HD patients have sexual dysfunctions, their spouses will also have sexual dysfunctions is not inferred from the Figure.

Discussion

Sexual problems are common in HD patients. Patients report alterations related to drive, arousal, penile erection/vaginal lubrication, ability to reach orgasm, and satisfaction with orgasm; all are affected by ESRD (20,21). A questionnaire administered to dialysis patients revealed that 65% were dissatisfied with their sexual life since starting dialysis, 40% had stopped having sex, 27% had no desire for sex, and 23% reported they could not achieve orgasm (22). Complaints of reduction in libido and marked reduction in the frequency of sexual relations have been reported in more than 50% of male ESRD patients, and the rate of erectile dysfunction is as high as 60% (22). There is no known single cause for these changes, but several physical and psychological factors have been proposed. The factors that are thought to cause sexual dysfunction in male dialysis patients are uremia, decreased penile blood supply, hormonal disturbances, low hematocrit level, drugs, such as beta blockers, fatigue, psychological problems, such as depression and anxiety, and difficulties with partner. A study comparing sexual function of female

Table 4. Sexual dysfunction among patients and spouses.

	Patients		P	Spouses		P
	Female (n: 14,%)	Male (n: 31,%)		Female (n: 31,%)	Male (n: 14,%)	
SD (+)	8 (17.7%)	15 (33.3%)	0.052	13 (28.8%)	0 (0%)	0.000*
SD (-)	6 (13.3%)	16 (35.5%)		18 (40%)	14 (31.1%)	

SD: Sexual dysfunction

* $P < 0.05$ significant

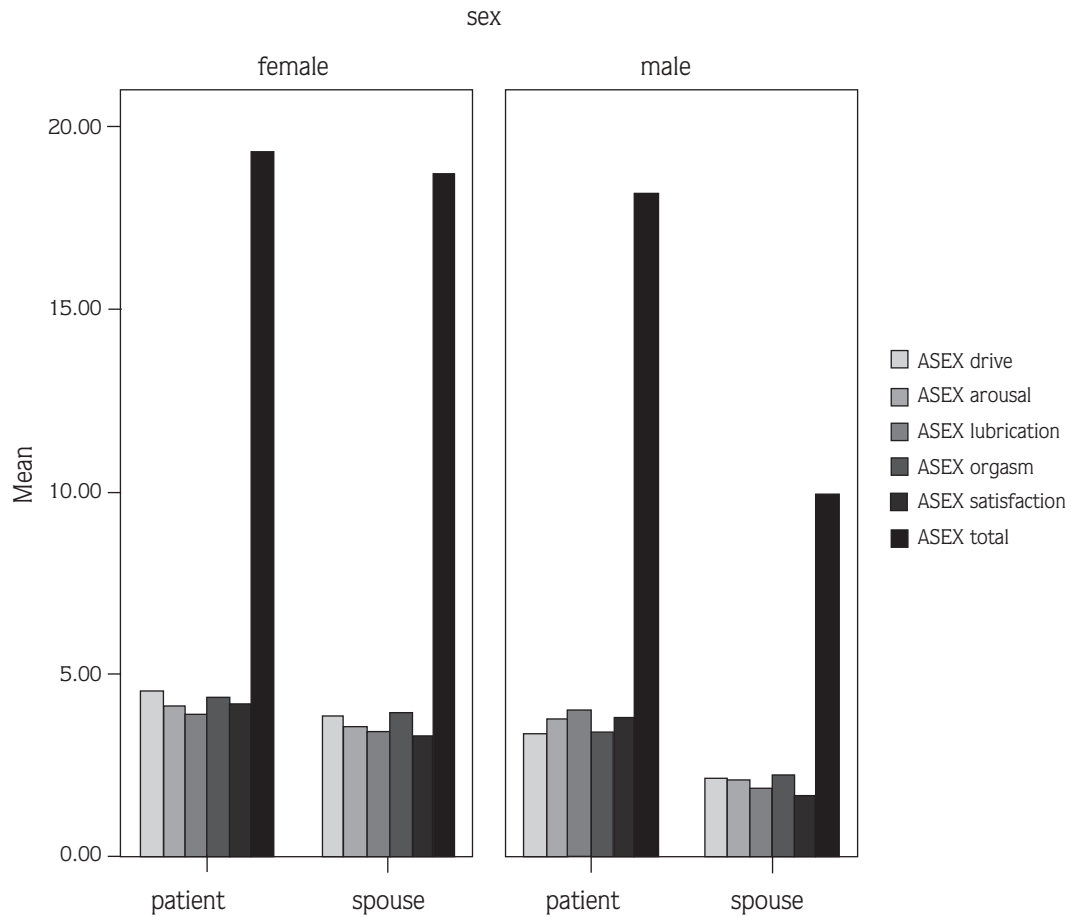


Figure 1. Item-by-item comparison of ASEX subscales among patients and spouses by gender. ASEX 1; drive, ASEX 2; arousal, ASEX 3; penile erection/vaginal lubrication, ASEX 4; orgasm, ASEX 5; satisfaction

patients before and after renal insufficiency found that the percentage of females who completely abstained from sexual intercourse increased from 9% to 40%. Among females on dialysis who continued to have sexual activities, the rate of anorgasmia increased from 9% to 31%. In earlier studies, 60%-100% of the women on HD reported a lack of desire for sexual activity and lack of sexual fantasy (2,23-25). In Korean female patients, difficulties with arousal and reaching orgasm were the most frequent reports (26). Numerous hypotheses have been put forward as to the origin of the sexual dysfunction in female dialysis patients, including uremia, hyperprolactinemia, gonadal dysfunction, depression, changes in appearance, hyperparathyroidism, and zinc-deficiency (2,4,23-25).

Despite the high prevalence of sexual dysfunction, only 25% of ESRD patients discuss the issue with their physicians (1). Moreover, it has been noted that conservative attitudes, lack of knowledge and anxiety when discussing sexual concerns are widespread. Therefore, a previous study suggested a brief and simple self-administered scale with good coverage of the symptoms of SD in screening and follow-up of SD in ESRD patients undergoing HD. The findings of this study indicated that the ASEX scale had excellent split-half reliability, internal consistency for a self-report assessment tool, and excellent test-retest reliability. It was also adequately sensitive, specific, and accurate in discriminating patients with 'no SD' and 'with SD' (3). Despite its usefulness and practicality, literature reveals no

studies screening SD among both patients and their spouses, and limited information is available on the effects of sexual dysfunctions on the spouses of the patients. In our study, we investigated the prevalence of SD in HD patients and their spouses using the demographic data, biochemical parameters, and the levels of depression and anxiety. The incidence of SD among the participants was determined through Arizona Sexual Experiences Scale (ASEX). To our knowledge, no studies to date have used Structured Clinical Interview for DSM Disorders-Clinical Version (SCID-CV) to assess psychiatric disorders in HD patients and spouses. However, there are some studies with limited number of cases evaluating sexuality for both HD patients and spouses (27-28).

The study was performed on 45 HD couples. Of HD patients, 31 were male and 14 were female; of the spouses, 31 were female and 14 were male.

SCID-CV revealed that among 45 patients, 30 (66.6%) fulfilled the DSM-IV diagnostic criteria for a psychiatric diagnosis; more specifically, 17 patients had a major depressive disorder. Thirteen spouses (28.8%) met DSM-IV diagnostic criteria for a psychiatric diagnosis. Thus, the patients had a significantly higher rate of a psychiatric diagnosis than the spouses did ($P = 0.001$).

In earlier studies, the incidence rate of psychopathology in HD patients was 20%-30% (29-34). In our study, this rate was 66.6%, which is compatible with the rate (54.3%) reported in an earlier study by Bahar, et al. (35). In the literature, there is a study affirming frequencies of psychopathology ranging from 0% to 100% (36). In our study, the rate of psychopathology among the spouses was 28.8%, which is similar to the rates reported by Chohanec, et al. (20%) (37) and Lowry, et al. (30%) (38).

In the present study, as is the case in other studies, SD was not associated with biochemical parameters. In previous studies, anemia, urea level, and predialysis creatinine levels were found to be related with SD (36,39,40); however, no such relation was determined in our study.

Although comparisons of HDRS, HARS, and ASEX total scores for gender in the patient group did not reveal any significant differences ($P > 0.05$),

for female spouses HDRS, HARS, and ASEX total scores ($P < 0.05$) were significantly higher. The scores of the patient group were significantly higher than those of the spouse group ($P < 0.05$).

A value of ≥ 19 on ASEX scale was considered to be the sign of SD. Accordingly, of 45 patients, 23 (51.1%; 15 male, 8 female) had SD, while 22 (48.9%; 16 male, 6 female) did not have any SD. Of 45 spouses, 13 (28.8%; 0 male, 13 female) had SD, and 32 (71.1%; 14 male, 18 female) did not have any SD ($P < 0.001$). In comparison to the males, sexual dysfunction was more common in the healthy females as well as in the females on dialysis ($P < 0.05$). In item-by-item comparisons of the ASEX parameters (drive, arousal, penile erection/vaginal lubrication, ability to reach orgasm and satisfaction with orgasm), the patient group had higher scores for arousal ($P = 0.017$), lubrication ($P = 0.000$), and satisfaction ($P = 0.001$) subscales and ASEX total ($P = 0.043$) than the spouse group. Difficulties with drive and in reaching orgasm were the most common complaints of the females in each group, while maintenance of erection and arousal were the most common complaints of the males. Because maintaining erection and arousal are important for initiation of a sexual intercourse, it can be argued that the sexual life of his spouse will also be negatively affected. However, the contrary does not seem to be true for male spouses. In female hemodialysis patients, the problems of sexual drive and reaching orgasm are frequent, which does not seem to constitute a problem for their healthy spouses since the issue of orgasm in the female partner is often disregarded even in healthy couples. Thus, an important finding of this study is in the evaluation of HD patients, particularly male ones; a group of patients considered otherwise healthy at home may constitute a hidden patient population due to the presence of a psychopathology, such as sexual dysfunctions. This should be kept in mind by both nephrologists and psychiatrists.

The study has some limitations. Our data were obtained from self-reports on sexual life. Although SD could be measured accurately by physiological methods, the data were obtained from self-reports on sexual life with ASEX, which had been validated and used widely. Moreover, lack of a healthy control group is another limitation of our study. As a power

of this study, it can be declared that, to our knowledge, no studies have used Structured Clinical Interview for DSM Disorders-Clinical Version (SCID-CV) to assess psychiatric disorders in both HD patients and spouses.

Conclusion

The results of this study suggest that sexual dysfunction is more common in Turkish healthy females as well as in females on dialysis. This may be associated with sociocultural conditions of the country. Lack of knowledge and conservative attitudes toward sexuality (difficulty in talking about sex), religious beliefs (e.g. refusing husband's sexual demands is a sin), anxiety when discussing sexual concerns, and husbands' tendency to ignore their wives' wish and needs during intercourse are widespread in Turkey (41). Therefore, using a self-rating scale, it was determined that females reported

their rigor easily. Consequently, paying more attention to the sexual functioning of HD couples even with a self-report scale might help diagnosing SD, and as a standard part of treatment, evaluation of the relationship and sexual concerns early in the process of the disease should be integrated into nephrologists' and psychiatrists' routine examination and management of HD process (42). In addition, other studies should be planned considering sociocultural factors and attitudes towards sexuality to further detail this subject.

Acknowledgement

The researchers appreciate for contribution of Hemodialysis Unit, Department of Nephrology of Ankara University, in this study. The study would not have been possible without the data provided by them. This research was not supported financially.

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