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Evaluation of sexual dysfunction in Parkinson's disease between two different regions of Turkey

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ABSTRACT

Objective: In this study, we aimed to evaluate sexual dysfunction (SD) between two different regions of Turkey in patients with Parkinson's Disease (PD).
Patients and methods: Forty-three PD patients in Ordu and 71 patients in Istanbul were included. The Unified PD Rating Scale and Hoehn and Yahr Stage (HYS) scale were used to assess disease severity. Cognitive function was assessed by the Mini-Mental State Examination (MMSE). The sexual functions of the patients were evaluated with applying the Turkish version of the Arizona Sexual Experiences Scale (ASEX).
Results: Mean age of patients in Istanbul was 67.25 ± 8.34 years and mean age of patients in Ordu was 67.98 ± 8.93 ($p = 0.66$). There was 87.33% SD in Istanbul group and 95.35% in Ordu group ($p = 0.20$) respectively. In terms of ASEX score, no difference was found between the Istanbul and Ordu groups. ASEX scores were significantly higher in females in both groups.
Conclusion: In this study, we have found that living in the different regions of our country does not have an impact on sexual function in PD patients.

1. Introduction

Sexual functioning is a complex process that requires the body's autonomic, sensory and motor systems to function normally, depending on the neurological, vascular and endocrine systems that provide sufficient blood supply to and from genital organs, a balanced hormonal system and a healthy emotional state [1]. Sexual dysfunction (SD) is common among the public (43% in women, 31% in men) [2]. Aging, life experiences, a number of diseases and drugs may alter sexuality [3]. Neurological diseases are often a risk factor for SD because normal neural control is essential for sexual function [4].

Parkinson's Disease (PD) is one of the progressive neurodegenerative diseases that mainly affects motor and autonomic systems; it is often associated with psychological problems. Therefore, SD is common in PD patients and contributes to the poor quality of life of patients and their partners [5].

Sexual functioning is also influenced by numerous psychosocial factors, including family, religious background, the sexual partner, and individual factors [1]. In our country, the upbringing, sociocultural status, views of life, and form of self-expression may differ significantly between people who live in large and small cities. Ordu is a city located on the coast of the Black Sea with a population of 700,000. Istanbul is the most crowded city in Turkey with a population of 14,000,000 and embodies culturally diverse communities.

From this point of view, we decided to examine the differences between SD in male and female PD patients living in two different cities of Turkey.

2. Materials and methods

Forty-three patients in Ordu and 71 patients in Istanbul with idiopathic PD who attended to our movement disorders outpatient clinics between August 2011 and June 2014 were included in the study. Patients with cognitive impairment, stroke, head trauma, features of atypical PD, and those under treatment with neuroleptics were excluded. The diagnosis of PD was confirmed by a movement disorders specialist (F.O.), according to the United Kingdom Parkinson's Disease Society Brain Bank Criteria [6]. The Unified PD Rating Scale (UPDRS)

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and Hoehn and Yahr Stage (HYS) scale were used to establish disease severity. Cognitive function was assessed by the Mini-Mental State Examination (MMSE). The sexual functions of the patients were assessed by applying the Turkish version of the Arizona Sexual Experiences Scale (ASEX) [7,8]. According to the ASEX scale, a total score of 5–30 was obtained from 5 subscales (sexual desire, arousal, erection/lubrication, ability to reach orgasm, satisfaction from orgasm) each was rated between 1–6 points. Lower scores indicate a strong, easy, and satisfying sexual response, whereas higher scores reflect the presence of SD.

2.1. Statistical analyses

Statistical analyses were performed using the SPSS Version 16.0. While evaluating the data descriptive statistical methods (frequency, percentage, average, standard deviation, minimum, maximum, median, range) were used. Cronbach's Alpha coefficient was used to assess survey reliability. Differences were analyzed using Chi-square test, *t*-test, Mann-Whitney *U* test and linear regression analysis. The findings obtained were evaluated at 95% confidence interval and 5% significance. The level of statistical significance was accepted at $p < 0.05$.

3. Results

The PD patients were from two different cities of Turkey (total number 114). There was no significant difference when we compared the two groups according to the age, education status, marital status, age at onset, HYS, UPDRS, MMSE and ASEX scores. The number of patients were more and the disease duration was higher in Istanbul group (Tables 1 and 2).

When we compared the PD characteristics of the two genders, the disease duration was higher, but the UPDRS scores were lower in female group of Istanbul. The number of male PD patients with HYS 1 and 2 were significantly higher while HYS 3 were lower in Istanbul group. The MMSE scores of male patients were higher in Ordu (Table 3). The ASEX scores were significantly higher in the female patients in both cities (Table 4). Education and age at disease onset were found to be predictors of SD in Istanbul, but not in Ordu group (Table 5).

The mean dosage of dopamine equivalent was 533 ± 337 mg (0–1700 mg). Eighty-nine patients were taking dopamine agonists (71.9% men, 29.1% women). There was no significant difference between the two genders ($p = 0.481$).

Table 1
Comparison of demographics and PD characteristics between Istanbul and Ordu groups.

	Istanbul Group n = 71	Ordu Group n = 43	*p*
Age (year)	67.25 ± 8.34	67.98 ± 8.93	0.660
Gender n (%) Male	37 (52.77)	27 (62.5)	**0.030**
Female	34 (47.23)	16 (37.5)	
Education status (year)	4.88 ± 4.17	5.03 ± 4.99	0.800
Disease duration (year)	6.79 ± 4.56	4.81 ± 3.80	**0.030**
Age at onset (year)	60.46 ± 8.58	63.59 ± 8.60	0.090
HYS n (%)			
1	21(29.57)	13 (33.07)	**0.730**
2	39 (54.92)	20 (44.62)	
3	11 (15,51)	9 (20.94)	
4	0	0	
UPDRS-motor	17.05 ± 9.15	16.11 ± 9.40	0.610
UPDRS-activities of daily living	7.64 ± 4.56	6.72 ± 5.95	0.370
MMSE	26.59 ± 2.22	27.23 ± 2.61	0.230

n: Number, HYS: Hoehn and Yahr Stage, UPDRS: Unified Parkinson's Disease Rating Scale, MMSE: Mini Mental State Examination.

Table 2
Comparison of ASEX scores between Istanbul and Ordu groups.

	Istanbul Group n = 71	Ordu Group n = 43	*P*
Total	19.85 ± 7.79	18.42 ± 5.83	0.300
Sexual desire	3.80 ± 1.78	3.28 ± 1.57	0.110
Stimulation	3.86 ± 1.74	3.53 ± 1.43	0.300
Erection/lubrication	4.08 ± 1.63	4,09 ± 1,01	0.970
Orgasm	3.99 ± 1.69	3,63 ± 1,64	0.270
Orgasm satisfaction	4.03 ± 1.73	3,98 ± 1,58	0.870
Sexual dysfunction n (%)			
none	9 (12.67)	2 (4.65)	
present	62 (87.33)	41 (95.35)	0.200

n: Number.

4. Discussion

In this study, SD was 90.40% in PD patients (87.33% in Istanbul, 95.35% in Ordu). A study conducted in Mexico reported the rate of SD as 30% [9], while this rate is 66.6% in Egypt [10], it rises as high as 81.6% in Thailand [11]. Our study yielded higher SD rates. Unlike other studies, the ASEX score was used to examine SD, and the survey questions were asked to patients by neurologists during face-to-face interviews. The different rates may be explained by different methodologies used by other studies (interviews conducted by interviewers, phone or email interviews) and sociocultural differences. Although the rate of SD was higher in Ordu, there was no statistical difference between the two groups.

In studies that examined non-motor functional impairments in PD across genders, it has been reported that SD is more common in men [12–14]. Picillo et al. studied on drug-naïve PD patients and found that male patients complained more about SD [15]. Hu et al. identified the prevalence of SD in male PD patients as 41.43% [16]. Only one study has reported that non-motor functional impairment is more common in women and that there is no difference with respect to SD across gender [17]. The sex lives of women with PD were found to be significantly affected by depression, anxiety, inhibition, dissatisfaction with physical appearance and medical problems, such as vaginal tightness and urinary incontinence. While hypersexuality, erectile dysfunction, and ejaculation problems were more prominent in men, loss of lubrication and urinary incontinence during intercourse were more common in women [1]. In a study conducted in women, women with PD reported they were unsatisfied with their sexual life, and this was associated with anxiety, depression, being dissatisfied with their appearance [18]. In a study including healthy controls, it was shown that women with PD had less sexual desire and did not get adequate satisfaction from orgasms, and in males, it was easier to reach orgasm when compared to controls [19].

In our study that compared male and female patients in the Istanbul and Ordu groups, the ASEX scores; sex drive, arousal, erection/lubrication (only in the Istanbul group), ability to reach orgasm, satisfaction from orgasm were significantly higher in the female patients. As a result, the rate of SD was higher in the female PD patients in both groups. This condition may be explained by a few reasons: 1) Male patients refrained from expressing their condition due to sociocultural concerns (the educational levels of the males are higher than that of the women in both groups). The questionnaire was filled by face to face method by doctors and they might be fainthearted, 2) The HYS of the women in Istanbul was significantly higher, and their disease duration was longer. Although this difference did not make any difference in the Ordu group, it may have led to higher SD rates among women in the Istanbul group (HYS 3 significantly higher), 3) Previous studies indicated that early onset young male PD patients taking high dosage of dopamine agonists tended to have hypersexuality [20]. Although we found no significant difference between the two genders, dopamin