

Sexual Dysfunction in Turkish Women During the Covid-19 Pandemic: Anxiety and Related Factors

Elif Dađlı¹(ID), Fatma Nilüfer Topkara²(ID)

¹Abdi Sütcü Vocational School of Health Services, Çukurova University, Adana, Turkey.

²Provincial Health Department, Eskişehir, Turkey

Received: 27 August 2022, Accepted: 18 October 2022, Published online: 30 November 2022

© Ordu University Institute of Health Sciences, Turkey, 2021

Abstract

Objective: During the pandemic process, the sexual domain may have been affected in women due to the change in the routine, the limitation of freedom, and the psychological destructiveness of helplessness. Since it is not known how long the pandemic will last, it is necessary to clarify the consequences of the strict control measures on women's sexual satisfaction and experiences. Therefore, the current study aimed to evaluate the relationships between the prevalence of Sexual dysfunction (SDF) in women and anxiety and some other factors during the COVID-19 pandemic in Turkey.

Methods: This cross-sectional and descriptive study consisted of 520 women of reproductive age (18-49) who were sexually active, were married, and volunteered to participate in the study were included in the sample. We reached the women included in the study via the online questionnaire link. Exclusion criteria were being diagnosed with COVID-19, having a chronic or psychiatric illness, being pregnant or puerperal, breastfeeding, and taking medicine that reduces libido during the previous three months.

Results: The mean age of the women was 35.16 ± 5.53 years, 48.3% of them had equal income and expenses, and 77.3% had economic concerns. It was determined that 60.6% of the women had SDF, 55.4% had high state anxiety, and that 67.5% had high trait anxiety. As the state and trait anxiety scores of women increased, the desire, arousal, lubrication, orgasm, and satisfaction scores of the female sexual function index decreased, while the pain score of the index increased. It was found that the risk for SDF was 4.899 times higher in women who did not have social security, 3.401 times higher in those who were dissatisfied with their marriage, and 2.764 times higher in women with less sexual intercourse due to the pandemic process (OR = 4.899; OR = 3.401; OR = 2.764, respectively).

Conclusions: The results of this study indicated that SDF increased, and the frequency of sexual intercourse decreased compared to the pre-pandemic period due to the fear of COVID-19 infection and the high anxiety level brought in by the process. Women who experience the impact of the pandemic more and more every day are especially at risk for poor mental health outcomes.

Key words: COVID-19 pandemic, female sexual dysfunction, anxiety, Turkish women

Suggested Citation: Dađlı E, Topkara FN. Sexual dysfunction in Turkish women during the covid-19 pandemic: anxiety and related factors Mid Blac Sea Journal of Health Sci, 2022;8(4):639-652.

Copyright@ Author(s) - Available online at <https://dergipark.org.tr/en/pub/mbsjohs>

The content of this journal is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License,



Address for correspondence/reprints:

Name and Surname:

Elif Dađlı

Telephone number:

+90 (322) 338 65 38

E-mail:

elifarik90@gmail.com

Note: This study was presented as an oral presentation at the 4th International 5th National Istanbul Midwifery Days Congress held on 24-26 September 2021

INTRODUCTION

The worldwide prevalence of COVID-19 has brought an unprecedented burden to all individuals with its high morbidity and mortality rates (1). Throughout the ongoing course of the disease, people have paid full attention to the course of the virus, and each state has taken various measures to effectively combat the pandemic. With the increase in cases in the country in which the study was conducted, some measures have been taken. Measures are taken to protect public health, such as recommendations to stay home, isolation, quarantine, and social distance are very important (2). However, in addition to the negative psychological effects caused by the pandemic itself, the measures taken, too, have negatively affected the psychology of individuals (3). Studies conducted in previous outbreaks reported psychological effects of the epidemic, such as anxiety, post-traumatic stress symptoms, and suicide (4). During the pandemic process, the sexual life of individuals may have been affected also by the change in routine, restriction of freedom, and despair (5). Staying away from sexual life may have stemmed from the implementation of social distance, compulsory homestay, working from home, distance education, constant stay of children at home, and avoiding contact, too (6). However, to have a healthy sexual life, there must be an intimate environment where the individual can live freely, happily, and without getting harmed (7).

Based on the available evidence, the coronavirus, which causes COVID-19 disease, does not spread through vaginal intercourse but is transmitted by kissing and physical touch (1, 7). Physical contact between couples may have decreased due to the fear of contamination. In addition, the difficulty of finding intimacy due to the constant presence of children at home and the obligation to share every moment with other family members because of compulsory stay at home and distance education can further aggravate discussions between couples and thus weaken the bonds between them. All these psychological factors and moods can inhibit sexual desire (5).

Most of the studies on the COVID-19 pandemic to date have evaluated its effects on physical health. This has led us to think that mental health and sexual health, which we consider important as physical health, should be addressed together. There are very few studies examining the effects of pandemics on sexual behaviors, and different opinions have been reported in these studies. In a study comparing sexual behaviors in Turkish women before and during the pandemic, it was reported that the frequency of sexual desire and intercourse increased significantly during the COVID-19 pandemic (8). On the other hand, in a study conducted in China, it was reported that the frequency of sexual activity and risky behaviors among women decreased significantly (9). Another study found that there was no significant

difference in the sexual activities of the participants (Bangladesh, India, and Nepal) (10).

Although the isolation process brought by COVID-19 seems to have allowed women to spend more time with their partners and thus to experience sexual activity more regularly, the quarantine measures taken during the epidemic may have reflected high anxiety in women and therefore their sexual relations negatively. The literature on how women's sexual life is affected by concerns about the risk of COVID-19 is scant. Given the importance of sexuality for health, there is a need to examine how the COVID-19 pandemic has changed women's sex lives and what factors are related to this change. For midwives, knowledge of the level of sexual problems of women and determining the factors affecting them during the pandemic is important in their planning and implementation of education and care. In addition, as the number of COVID-19 positive cases has increased, the number of women experiencing sexual problems may have increased because access to healthcare centers is now difficult. Therefore, the present study aimed to evaluate the correlation between the prevalence of sexual dysfunction (SDF) in women and anxiety and some other factors during the COVID-19 pandemic.

METHODS

Research design

This research is cross-sectional and descriptive.

Participants

The sample size consisted of 520 individuals. Data were collected between 05 December 2020 and 25 March 2021. Data was collected via an online survey link from Microsoft Office 365 Forms due to COVID-19 restrictions. The questionnaire was completed by any device with internet access, such as a mobile phone, tablet, or personal computer. Individuals were recruited through social media tools (e.g. Facebook, Instagram, Twitter, WhatsApp, etc.) and personal networks. The women who met the inclusion criteria were included in the study. Women of reproductive age (18-49) who were sexually active, married, and willing to participate in the study voluntarily were included in the sample. Exclusion criteria were being diagnosed with COVID-19, those with a history of menopause (hormonal/surgery) or gynecological surgery, having a chronic or psychiatric illness, being pregnant or puerperal, breastfeeding, and taking medicine that reduces libido during the previous three months. Exclusion criteria were asked in the questionnaire. According to the exclusion criteria, participants were excluded from the study, taking into account their own statements. Data were collected by random sampling method. The sample calculation was made as 520 with a 99% confidence interval and 5% margin of error, with an estimated 60% of the prevalence of SDF when the universe was known.

Measures

Three separate forms were used to collect the data. The data collection tools used in the study

included a descriptive information form questioning socio-demographic information, the Female Sexual Function Index, and the Spielberger State-Trait Anxiety Inventory.

The Descriptive Information Form: This questionnaire, designed by the researchers, included 18 questions to obtain participants' socio-demographic data, including age, educational status, marital status, family type, whether they had children, income level, and total work experience.

The Female Sexual Function Index (FSFI): This scale was developed by Rosen et al. to evaluate female sexual function. The validity and reliability study of the scale was conducted by Aygin and Aslan in Turkey. The scale consists of 19 items and evaluates sexual problems and function in the last 4 weeks. The scale comprises six sub-dimensions, namely, desire, arousal, lubrication, orgasm, satisfaction, and pain. Minimum and maximum scores range between 2 and 36. A total FSFI score of > 26.5 is interpreted as the absence of SDF, while a total FSFI score of ≤ 26.5 is interpreted as the presence of SDF (11, 12).

Spielberger State and Trait Anxiety Inventory (STAI-II): The Turkish validity and reliability study of this inventory, which was developed by Spielberger and a group of friends in 1970, was carried out by Öner and Le Compte in 1985. This inventory has two subscales. These are state and trait anxiety inventories consisting of 20 questions each. State anxiety domain of the scale

indicates how a person feels at a given moment and under present circumstances. The trait anxiety, on the other hand, indicates how the person feels except for the current situation and circumstances. The scale has a Likert-type rating system. The total score of the inventory varies between 20 and 80. A total score of 36 and less on the scale shows the absence of anxiety, scores between 37 and 42 indicate mild anxiety, and scores of 43 and greater indicate high levels of anxiety. According to the scale, individuals who score above 60 need expert help (13, 14).

Procedure

At the outset, the approval of the Ethics Committee Unit of Çukurova University was obtained (date: 04.12.2020 and issue: 106/23) to carry out the study. The online questionnaire included the study purpose, information regarding the confidentiality of the data collected, and informed consent for participation. The questionnaires were filled in approximately within 12 minutes.

Statistical analysis

Statistical analyses were performed on the SPSS (IBM SPSS Statistics 24) software package. Frequency tables and descriptive statistics were used in the interpretation of the findings. Continuity correction according to expected value levels and Pearson- χ^2 test statistics were used to examine the relationship between two qualitative variables. Spearman correlation coefficient was used to examine the relationship between measurement values that

did not have a normal distribution. The Backward LR model of the Binary Logistic Regression was used to determine the factors affecting SDF.

RESULTS

The mean age of the women was found to be 35.16 ± 5.53 (years), and 302 of them (58.1%) were in the 23-35 age group. The spouses of 324 women (62.3%) were in the age group ≥ 36 , 497 (95.6%) had secondary or higher education, 293 (56.3%) were married for more than 10 years, 497 (95.6%) had health insurance, 488 (93.8%) spouses were working, 251 (48.3%) had equal income-expenditure, 402 (77.3%) had economic concerns, 485 (93.3%) 3) nuclear family members, 339 (65.2%) were smokers, 444 (85.4%) did not drink alcohol, 501 (96.3%) had children, 456 (87.7%) were satisfied with marriage, 344 (66.2%) had sexual intercourse < 3 /week before the pandemic, 406 (78.1%) had sexual intercourse < 3 /week during the pandemic period, 333 (64.0%) had cesarean section and 312 (60.0%) had 4 or more people living in the house. It was determined that 288 women (55.4%) experienced high state anxiety, 351 (67.5%) experienced high trait anxiety, and that 315 (60.6%) had SDF (Table 1).

A statistically significant relationship was found between FSFI scores and age groups ($\chi^2 = 5.540$; $p = 0.019$). The participants in the 23-35 age group had a higher rate of SDF than those in the > 35 age group. There was no statistically significant relationship between FSFI groups and

the age groups of partners, education levels, the length of the marriage, the employment status of the partner, the level of income, economic concerns, family type, smoking, and alcohol consumption ($p > 0.05$). A statistically significant relationship was found between FSFI scores and health insurance ($\chi^2 = 8.216$; $p = 0.004$). It was determined that 294 people with SDF (93.3%) and 203 people without SDF (99.0%) had health insurance. The rate of having health insurance in women with SDF was lower than those without SDF (Table 2).

There was no statistically significant relationship between FSFI groups and having children, mode of delivery, and the number of households ($p > 0.05$). A statistically significant relationship was found between FSFI groups and satisfaction with the marriage ($\chi^2 = 17.308$; $p = 0.000$). It was determined that 54 individuals with SDF (17.1%) and 10 individuals without SDF (4.9%) were not satisfied with their marriage. The dissatisfaction rate of those with SDF was higher than those without SDF. A statistically significant relationship was found between FSFI groups and the frequency of pre-pandemic sexual intercourse (weekly) ($\chi^2 = 9.929$; $p = 0.042$). It was determined that 225 women with SDF (71.4%) and 119 without SDF (58.0%) had sexual intercourse < 3 times a week before the pandemic. The rate of having sexual intercourse < 3 times a week before the pandemic was higher in participants with SDF than those without SDF. A statistically significant

relationship was found between FSFI groups and the frequency of sexual intercourse (weekly) during the pandemic period ($\chi^2 = 27.228$; $p = 0.000$). It was determined that 270 women with SDF (85.7%) and 136 women without SDF (66.3%) had sexual intercourse <3 times a week during the pandemic period. The rate of having sexual intercourse <3 times a week during the pandemic period was higher in participants with SDF than those without SDF (Table 3).

Table 1 Distribution of findings about the women

Variable (N=520)	n	%	
Age groups			
[$\bar{X} \pm S.S. \rightarrow 35,16 \pm 5,53$ (year)]	23-35	302	58.1
	≥ 36	218	41.9
Age group of partners			
[$\bar{X} \pm S.S. \rightarrow 38,20 \pm 6,46$ (year)]	23-35	196	37.7
	≥ 36	324	62.3
Level of education	Primary school	23	4.4
	Secondary school and above	497	95.6
Length of marriage (year)	<10	293	56.3
	≥ 10	227	43.7
Health insurance	Yes	497	95.6
	No	23	4.4
Economic concerns	Yes	402	77.3
	No	118	22.7
State anxiety inventory	≤ 36 : No anxiety	141	27.1
	37-42: Mild	91	17.5
	≥ 43 : High	288	55.4
Trait anxiety inventory	≤ 36 : No anxiety	72	13.8
	37-42: Mild	97	18.7
	≥ 43 : High	351	67.5
Sexual dysfunction (FSFI)	Yes ($\leq 26,5$)	315	60.6
	No ($> 26,5$)	205	39.4

According to the table, the mean state anxiety scores of the women was 44.49 ± 11.67 , and the mean trait anxiety score was 46.82 ± 9.30 , indicating a high level of anxiety, and the FSFI total score was 22.59 ± 9.00 , indicating the presence of SDF (Table 4).

A negative, weak, and statistically significant correlation was found between the state anxiety inventory scores of the women and their scores from the desire, arousal, lubrication, orgasm, satisfaction sub-dimensions, and the total of the female sexual function index; however, the

relationship with the score of the pain sub-dimension was positive, weak, and statistically significant ($p < 0.05$). As the women's state anxiety inventory scores increased, the desire, arousal, lubrication, orgasm, satisfaction sub-dimension scores, and the total female sexual function index scores decreased, but the pain scores increased (Table 5).

A negative, weak, and statistically significant correlation was found between the trait anxiety inventory scores of the women and their scores from the desire, arousal, lubrication, orgasm,

Table 2. The relationships between FSFI scores and some parameters

The Female Sexual Dysfunction Index Variable	SDF (Yes) (n=315)		SDF (No) (n=205)		Statistical analysis* Probability
	n	%	n	%	
Age groups					
23-35	170	54.0	132	64.4	$\chi^2=5.540$ p=0.019**
>35	145	46.0	73	35.6	
Age groups of partners					
23-35	114	36.2	82	40.0	$\chi^2=0.767$ p=0.381
>35	201	63.8	123	60.0	
Level of education					
Primary school	12	3.8	11	5.4	$\chi^2=0.391$ p=0.532
Secondary school and above	303	96.2	194	94.6	
Length of marriage (year)					
<10	175	55.6	118	57.6	$\chi^2=0.203$ p=0.652
≥10	140	44.4	87	42.4	
Employment of the spouse					
Yes	295	93.7	193	94.1	$\chi^2=0.002$ p=0.966
No	20	6.3	12	5.9	
Health insurance					
Yes	294	93.3	203	99.0	$\chi^2=8.216$ p=0.004**
No	21	6.7	2	1.0	
Economic concerns					
Yes	251	79.7	151	73.7	$\chi^2=2.569$ p=0.109
No	64	20.3	54	26.3	
Family type					
Core	294	93.3	191	93.2	$\chi^2=0.005$ p=0.942
Extended	21	6.7	14	6.8	
Status of smoking					
Yes	105	33.3	76	37.1	$\chi^2=0.765$ p=0.382
No	210	66.7	129	62.9	
Alcohol consumption					
Yes	44	14.0	32	15.6	$\chi^2=0.268$ p=0.605
No	271	86.0	173	84.4	

*"Continuity correction" or "Pearson- χ^2 cross-tabulation" were used according to the expected value levels in the examination of the relationship between two qualitative variables. ** P <0.05 was accepted as the statistical significance value.

satisfaction, and total female sexual function index; but, the relationship with the score of the pain sub-dimension was positive and statistically significant (p <0.05).

As the trait anxiety inventory scores of women increased, the desire, arousal, lubrication, orgasm, satisfaction, pain sub-dimension scores, and total female sexual function index scores decreased, but the pain scores increased (Table 5). As a result of Backward: LR logistic regression analysis performed by using the

parameters found significant in univariate analysis, the optimal model is given in the table. In the current model, it was determined that health insurance was an important parameter affecting SDF (p <0.05). The women without health insurance were 4.899 times more likely to have SDF than those with health insurance (OR = 4.899). Satisfaction with the marriage was an important parameter affecting SDF (p <0.05). The women who were dissatisfied with their marriages were 3.401 times more likely to have

Table 3. The relationships between FSFI scores and some parameters

The Female Sexual Dysfunction Index	SDF (Yes) (n=315)		SDF (No) (n=205)		Statistical analysis* Probability	
	n	%	n	%		
Having children	Yes	305	96.8	196	95.6	$\chi^2=0.233$
	No	10	3.2	9	4.4	p=0.629
Satisfaction with the marriage	Yes	261	82.9	195	95.1	$\chi^2=17.308$
	No	54	17.1	10	4.9	p=0.000**
Pre-pandemic sexual activity/week	<3 times	225	71.4	119	58.0	$\chi^2=9.929$
	≥3 times	90	28.6	86	42.0	p=0.002**
During-pandemic sexual activity/week	<3 times	270	85.7	136	66.3	$\chi^2=27.228$
	≥3 times	45	14.3	69	33.7	p=0.000**
Mode of delivery	Nullipara	10	3.2	10	4.9	$\chi^2=1.867$ p=0.393
	Normal	97	30.8	70	34.1	
	C-section	208	66.0	125	61.0	
Number of households	2	13	4.1	17	8.3	$\chi^2=4.671$ p=0.198
	3	114	36.2	64	31.2	
	≥4	188	59.7	124	60.5	

*"Continuity correction" or "Pearson- χ^2 cross-tabulation" were used according to the expected value levels in the examination of the relationship between two qualitative variables. ** P <0.05 was accepted as the statistical significance value.

Table 4. Distribution of findings about the scales

The scales (N=520)	Mean	Standard Deviation	Median	Min.	Max.
The state anxiety inventory	44.49	11.67	44.0	20.0	80.0
The trait anxiety inventory	46.82	9.30	46.0	22.0	72.0
FSFI					
Desire	3.16	1.24	3.0	1.2	6.0
Arousal	3.48	1.63	3.6	0.0	6.0
Lubrication	4.02	1.65	4.2	0.0	6.0
Orgasm	3.75	1.84	4.0	0.0	6.0
Satisfaction	3.98	1.83	4.8	0.0	6.0
Pain	4.21	1.91	4.8	0.0	6.0
Total	22.59	9.00	24.6	1.2	36.0

Table 5. Examination of the relationship of the female sexual function index and its sub-dimensions with anxiety scores

The scales (N=520)		State anxiety inventory	Trait anxiety inventory
The female sexual function index			
Desire	r	-0.353	-0.287
	p	0.000	0.000
Arousal	r	-0.401	-0.350
	p	0.000	0.000
Lubrication	r	-0.380	-0.341
	p	0.000	0.000
Orgasm	r	-0.407	-0.369
	p	0.000	0.000
Satisfaction	r	-0.439	-0.363
	p	0.000	0.000
Pain	r	0.351	0.305
	p	0.000	0.000
Total	r	-0.457	-0.404
	p	0.000	0.000

*"The Spearman" correlation coefficient was used to examine the relationships of two quantitative data that did not have normal distribution.

Table 6. Logistic Regression model based on SDF

Variable	B	S.H.	Wald	sd	p	OR	95% Confidence Interval (OR)	
							Lower	Upper
Age group	-0.213	0.191	1.175	1	0.278	0.808	0.550	1.188
Health insurance ¹	1.589	0.771	4.249	1	0.039	4.899	1.081	22.197
Satisfaction with the marriage ²	1.224	0.371	10.905	1	0.001	3.401	1.645	7.032
Pre-pandemic sexuality	0.034	0.248	0.019	1	0.892	1.034	0.636	1.682
During-pandemic sexuality ³	1.017	0.280	13.170	1	0.000	2.764	1.596	4.786
Constant	-0.484	0.242	4.002	1	0.045	0.616		
Reference category 1-2:Yes, 3:≥3 times			CCR=76.4%		$\chi^2_{(8)}=1.494$; p=0.960			

SDF than those who were satisfied (OR = 3.401). Besides, the frequency of weekly sexual intercourse during the pandemic period was found as an important parameter affecting SDF (p <0.05). The women who had sexual intercourse <3 times a week during the pandemic period were at 2.764 times higher risk for SDF than those who had sexual intercourse ≥3 times a week (OR = 2.764) (Table 6).

DISCUSSION

Turkish women were adversely affected during the COVID-19 pandemic process in terms of sexual health, which is an aspect of general health. It was determined that more than half of the women had SDF and experienced high levels of state and trait anxiety. According to the data obtained from the study, as the severity of women's state and trait anxiety increased during the pandemic process, SDF was determined to increase. In addition, high

anxiety levels, lack of health insurance, dissatisfaction with the marriage, and decreased frequency of sexual intercourse were significantly correlated with SDF in our study.

Compared to a meta-analysis study conducted in country in which the study was conducted before the pandemic, the prevalence of SDF was found to be higher in our study. Similarly, it was reported to be high in a study conducted in Egypt during the pandemic (15, 16). In our study, the FSFI score of the women was found to be low. Similar results were reported by Omar et al., Fuchs et al., and Yüksel and Özgör (8, 16, 17). Most of our women had pain, decreased desire, orgasm, satisfaction, and lubrication, and difficulties in arousal during sexual intercourse. Our results undeniably demonstrated the impact of the pandemic on the deterioration of the quality of sexual life among Turkish women.

The frequency of sexual intercourse is one of the main factors that determine the sexual satisfaction of individuals (18). Different opinions have been reported in the literature regarding the frequency of sexual intercourse during the pandemic. In a study comparing sexual behaviors among Turkish women before and during the pandemic, it was reported that the frequency of sexual desire and intercourse increased significantly during the COVID-19 pandemic (8). It was determined that there was no significant difference in sexual activities in Asian countries (Bangladesh, India and Nepal) and Italy (10, 19). However, the frequency of sexual intercourse decreased in our study. In another similar study, it was reported that the frequency of sexual intercourse and overall sexual satisfaction levels decreased compared to the pre-pandemic period (20). In a study conducted in England, it was reported that women were not sexually active during self-isolation/social distancing (9). In two studies conducted in China, it was stated that there was a decrease in sexual desire and sexual satisfaction (9, 21). These studies in the literature support our study.

During the pandemic process, where people move away from each other due to the social distance rule, it was observed that the frequency of sexual activity decreased with decreased sexual desire. In addition, it is thought that the new normal brought in by the process, such as compulsory homestay, working from home, the

constant stay of children at home due to online education, and avoiding contact were also effective in decreased sexual activity.

Similar to the literature, as the level of anxiety increased, sexual desire, arousal, lubrication, orgasm, satisfaction, and total scores decreased, but pain scores increased in our study (17). In various studies, it has been stated that the psychological responses of the pandemic are mainly anxiety (22-24). Anxiety, in turn, has been associated with low levels of sexual desire (9). Sexuality, which is shaped by the interaction of psychological, social, and biological variables, is negatively affected by this process.

Our study also showed that women without health insurance were at risk for SDF. In our analyses, lack of women's health insurance was an independent risk factor for SDF, with 4.899 times increased risk. Similar to our study, Yılmaz et al. reported that lack of health insurance was associated with sexual dysfunction (25). It is thought that having health insurance allows women to meet their care needs appropriately, reduces their anxiety about care and treatment practices, and positively affects sexual function by increasing their well-being.

Finally, our findings indicated that being happy with the marriage was another important parameter affecting SDF. The women who were dissatisfied with their marriage were more

likely to have SDF than those who were satisfied.

Marital satisfaction has an important effect on an individual's general health, life satisfaction, and sexual pleasure (26). Frotan and Milany showed that 68.4% of women who applied for divorce in Iran were not satisfied with their sexual life (27). In another study, a significantly negative relationship was reported between SDF and satisfaction with the marriage (28). Sexual satisfaction plays a vital role in the stability of a marriage (29). SDF is an important health problem affecting marital life (25). This problem, which has a significant impact on the quality of life, is quite common in society and is often underestimated (30). Under unprecedented circumstances such as this pandemic, women who have problems in their marriage and whose sex life is also affected represent a potential area that must be addressed in terms of divorce issues.

The results of our study should be interpreted considering its limitations. Since sexual life was questioned, women may have given unrealistic answers. For this reason, the reliability of the data is limited to the accuracy of the information provided by the interviewees. In addition, women's sexual problems and anxiety were determined by self-report scales. These results may differ from the results determined by the clinical interview. Another limitation of our study was that the number of women with low educational level

was low, as internet use was more common among women with higher education. Illiterate women could not be reached, as data were collected with an online survey. In addition, when interpreting the results, it should be taken into account that there is not enough evidence to say that sexual dysfunction is directly related to the COVID-19 pandemic, since there is no data from the pre-COVID period, considering that there was no control group in the study, and that female sexual dysfunctions were underdiagnosed due to the low number of applications.

CONCLUSION

Our results show that SDF has increased in women of reproductive age and the frequency of sexual intercourse has decreased during the pandemic compared to the pre-pandemic period because of the fear of spread of COVID-19 and the high level of anxiety brought in by the process. Considering independent factors, such as health insurance, satisfaction with the marriage, and sexual intercourse count that were found in our study, targeted screening of women should be planned during routine health follow-ups for SDF. The results of our study, in which we investigated a wide variety of variables compared to other studies, may contribute to the accumulation of knowledge of changes in women's sexual function during the COVID-19 pandemic.

In line with these data, midwives/nurses and doctors should evaluate women in terms of SDF

and anxiety levels and take into account related factors while doing these evaluations. Sexual health is an important part of the quality of life. Knowledge of what kind of problems are experienced in the sexual life of women during this period and what factors are affected by these problems can enable midwives/nurses and doctors working in this field to approach this issue more sensitively and provide a higher quality service. Therefore, it is thought that the services provided by midwives/nurses and doctors during the pandemic period can contribute to increasing the quality of life of women and their family. Women who experience the impact of the pandemic more and more every day are especially at risk for poor mental health outcomes. Providing women with digital mental health screening and treatment to improve their mental health can be helpful. Separating health insurance and employment can ensure continued access to health care, including mental health, for those who lost their jobs during the pandemic.

Ethics Committee Approval: Ethics approval was obtained from the Çukurova University Medikal Faculty Ethics Committee (date: 04.12.2020 and issue: 106/23).

Peer-review: Externally peer-reviewed.

Author Contributions:

Concept, Design, Literature search, Data Collection and Processing, Analysis or Interpretation, Writing – ED, FND

Conflict of Interest: The authors have no interests to declare

Financial Disclosure: The authors received no financial support for the research, authorship, and publication of this article.

REFERENCES

- 1- World Health Organization (WHO) (2020). Sexual and reproductive health and research including the Special Programme HRP. Date of access:03.15.2021 Access: https://www.who.int/reproductivehealth/about_us/en/
- 2- Ministry of Health. Date of access: 03.15.2021 Access: <https://covid19bilgi.saglik.gov.tr/tr/haberler/turkiyedeki-gunluk-covid-19-vaka-sayilari.html>
- 3- Xiang YT, Yang Y, Li W, Zhang L, Zhang Q, Cheung T, Ng CH. Timely Mental Health Care for the 2019 Novel Coronavirus Outbreak is Urgently Needed. *The Lancet Psychiatry*. 2020;(7)3:228-229.
- 4- Wheaton MG, Abramowitz JS, Berman NC, Fabricant LE, Olatunji BO. Psychological Predictors of Anxiety in Response to the H1N1 Pandemic. *Cog. Therapy and Research*. 2012;36(3):210–218.
- 5- Guan W, Ni Z, Hu Y, Liang W, Ou C, He J, et al. Clinical Characteristics of Coronavirus Disease 2019 in China. *N Engl JMed*.2020;382(18):1708-1720. doi: 10.1056/NEJMoa2002032
- 6- Ibarra FP, Mehrad M, Mauro MD, Godoy MFP, Cruz EG, Nilforoushzadeh MA, Russo GI. Impact of the COVID-19 Pandemic on the Sexual Behavior of the Population the Vision of the East and the West. *Int Braz j Urol*. 2020;46(1):104-112.
- 7- Jacob L, Smith L, Butler L, Barnett Y, Grabovac I, McDermott D, et al. Challenges in the Practice of Sexual Medicine in the Time of COVID-19 in the United Kingdom. *J Sex Med*. 2020;17(7):1229-1236.doi: 10.1016/j.jsxm.2020.05.001.
- 8- Yuksel B, Ozgor F. Effect of the COVID-19 Pandemic on Female Sexual Behavior. *Int. J. Gynaecol. Obstet*. 2020;150:98–102.
- 9- Li W, Li G, Xin C, Wang Y, Yang S. Challenges in the Practice of Sexual Medicine in the Time of COVID-19 in China. *J Sex Med*. 2020;17:1225–1228.
- 10- Arafat SMY, Alradie-Mohamed A, Kar SK, Sharma P, Kabir R. Does COVID-19

- Pandemic Affect Sexual Behaviour? A Cross-Sectional, Cross-National Online Survey. *Psychiatry Res.* 2020;7:289,113050.doi: 10.1016/j.psychres.2020.113050.
- 11- Rosen R, Brown C, Heiman J, Leiblum S, Meston C, Shabsigh R, Dagostino R. The Female Sexual Function Index (FSFI): A Multidimensional Self-Report Instrument for the Assessment of Female Sexual Function. *Journal of Sex & Marital Therapy.* 2000;26(2):191-208.doi: 10.1080/009262300278597.
 - 12- Aygin D, Aslan FE. Adaptation of Female Sexual Function Scale to Turkish. *Turkiye Klinikleri Journal of Medical Sciences.* 2005;25(3):393-399.
 - 13- Spielberger CD. State-Trait Anxiety Inventory. In I. B. Weiner & W. E. Craighead (Eds.), *The Corsini Encyclopedia of Psychology.* John Wiley & Sons, Inc. 2010. <https://doi.org/10.1002/9780470479216.corpsy0943>
 - 14- Oner N, Le-Compte A. *Handbook of the Discontinuous State/Trait Anxiety Inventory (2nd Edition).* Istanbul: Bogazici University Publications; 1985.
 - 15- Karakas-Ugurlu G, Ugurlu M, Caykoylu A. Prevalence of Female Sexual Dysfunction and Associated Demographic Factors in Turkey: A Meta-analysis and Meta-regression Study. *International Journal of Sexual Health.* 2020;32(4):365-382.
 - 16- Omar SS, Dawood W, Eid N, Eldeeb D, Munir A, Arafat W. Psychological and Sexual Health during the COVID-19 Pandemic in Egypt are Women Suffering More. *Sex Med.* 2021; 9(1):100-295.doi: 0.1016/j.esxm.2020.100295.
 - 17- Fuchs A, Matonog A, Pilarska J, Sieradzka P, Szul M, Czuba B, Drosdzol-Cop A. Settings the Impact of COVID-19 on Female Sexual Health. *Int. J. Env. Res. Public Health.* 2020;17:19.
 - 18- Palha-Fernandes E, Alves P, Lourenço M. Sexual Satisfaction Determinants and Its Relationship with Perfectionism: A Cross-sectional Study in an Academic Community. *Sex Rel Ther.*2019;1-15. doi.org/10.1080/14681994.2019.1677884
 - 19- Micelli E, Cito G, Cocci A, Polloni G, Russo GI, Minervini A, et al. Desire for Parenthood at the Time of COVID-19 Pandemic: An Insight into the Italian Situation. *Journal of Psychosomatic Obstetrics&Gynecology.* 2020;41(3):183-190. doi: 10.1080/0167482X.2020.1759545.
 - 20- Karagoz MA, Gul A, Borg C, Erihan IB, Uslu M, Ezer M, Bagcioglu M. Influence of COVID-19 Pandemic on Sexuality: a Cross-sectional Study Among Couples in Turkey. *Int J Impot Res.* 2020;33:815-823. doi.org/10.1038/s41443-020-00378-4
 - 21- Grabovac I, Smith L, Yang L, Soysal P, Veronese N, Işık AT, et al. The Relationship between Chronic Diseases and Number of Sexual Partners: An Exploratory Analysis. *BMJ Sex Reprod Health.* 2020;46(2):100-107. doi: 10.1136/bmjsex-2019-200352.
 - 22- Lei L, Huang X, Zhang S, Yang J, Yang L, Xu M. Comparison of Prevalence and Associated Factors of Anxiety and Depression among People Affected by Versus People Unaffected by Quarantine during the COVID-19 Epidemic in Southwestern China. *Med Sci Monit.* 2020;26:e924609.
 - 23- Chew QH, Wei KC, Vasoo S, Chua HC, Sim K. Narrative Synthesis of Psychological and Coping Responses towards Emerging Infectious Disease Outbreaks in the General Population: Practical Considerations for the COVID-19 Pandemic. *Sin Med J.* 2020;61:350-356.
 - 24- Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N, Rubin, J. The Psychological Impact of Quarantine and How to Reduce it: rapid Review of the Evidence. *Lancet.* 2020;395:912-920.
 - 25- Yilmaz BA, Sonmez Y, Sezik M. Prevalence and Risk Factors for Sexual Dysfunction in Reproductive-Aged Married Women: A Cross-Sectional Epidemiological Study. *J. Obstet. Gynaecol. Res.* 2020;46:507-516.

- 26- Sotude M, Dindar R. Relationship Between Marital Satisfaction, Sexual Satisfaction and Social Security in Couples in Tehran. *Q Policing J Kn. Cap.Pol.* 2015;8:9-24.
- 27- Foroutan S, Jajid-Milany M. Prevalence of Sexual Dysfunction in Volunteers of Divorce Referred to Family Court. *Daneshvar Med.* 2008;78:39-41.
- 28- Karami J, Shalani B, Hoveyzi N. Relationship Between Sexual Self-Esteem and Sexual Dysfunction with Marital Satisfaction in Nurses Hopitals Kermanshah City. *Qom Univ Med Sci J.* 2017;11(9):86-93.
- 29- Mohammadzadeh-Moghaddam M, Moradi M, Mirzaii-Najmabadi K, Ramezani M, Shakeri M. Effect of Counseling on the Sexual Satisfaction Level of Women with Sexual Dysfunction Using PLISSIT Model Focused on Dysfunctional Sexual Beliefs. *Evi. Based Care.* 2019;9(3):49-57.
- 30- Masoomie R, Elsous A, Hussein H, Taghizadeh Z, Baloushah S. Female Sexual Dysfunction among Married Women in the Gaza Strip: an Internet-Based Survey. *Ann Saudi Med.* 2019;39(5):319-327.