

Investigation of Changes in Female Sexual Function in COVID-19 Pandemic with Male Partners

COVID-19 Pandemisinde Kadın Cinsel İşlevindeki Değişikliklerin Erkek Partnerlerle Araştırılması

Orhan Sahin¹, Mehmet Gokhan Culha²

¹Department of Gynecology and Obstetrics, University of Health Sciences, Prof. Dr. Cemil Tascioglu City Hospital, Istanbul, Türkiye

²Department of Urology, University of Health Sciences, Prof. Dr. Cemil Tascioglu City Hospital, Istanbul, Türkiye

Yazışma Adresi/Address for Correspondence: Orhan Şahin, Prof. Dr. Cemil Tascioglu City Hospital, 34098 Istanbul / Turkey
e-posta: drorhansahin@gmail.com

Orcid No: SO¹: 0000-0002-7216-3816
CGM²: 0000-0003-4059-2293

Atf/Cite As: Sahin O, Culha GM. Investigation of Changes in Female Sexual Function in COVID-19 Pandemic with Male Partners. Hitit Med J 2023;5(2): 75-79. <https://doi.org/10.52827/hititmedj.1126567>

Abstract

Objective: This study aimed to assess the effects of the coronavirus disease 2019 (COVID-19) pandemic on the sexual behaviors of females in Turkey by also evaluating their male partners.

Material and Method: This study included females (>18 years of age) who were married or had a regular sexual life in the last 6 months and had documented sexual functional status based on the Female Sexual Function Index (FSFI) before the COVID-19 pandemic. The study was performed in May-July 2020. The participants were interviewed via telephone call or e-mail. The sexual functions of the females were evaluated using the FSFI, and the erectile functions of their male partners were evaluated using the International Index of Erectile Function-5 (IIEF-5). The scores obtained before and during the COVID-19 pandemic were compared.

Results: The study included 116 females with a mean age of 39.83±9.38 years. The total FSFI score of the females during the pandemic was 20.98±7.53. A significant improvement was observed in all subscale scores and the total score of FSFI compared with the pre-pandemic period ($p<0.001$ for each). A significant improvement was also observed in the IIEF-5 scores of male partners during the pandemic period compared with the pre-pandemic period (12.57±3.67 vs 22.57±5.43; $p<0.001$). Pearson's correlation analysis revealed a significant positive correlation between the FSFI scores (subscale and total scores) of the participants and the IIEF-5 scores of their male partners ($r=0.276-0.413$, $p<0.001$).

Conclusion: Female sexual functions improved significantly during the COVID-19 pandemic compared with the pre-pandemic period and were positively correlated with the sexual functions of their male partners

Keywords: COVID-19; Female sexual function; Sexuality; Partner

Özet

Amaç: Bu çalışma, koronavirüs-2019 hastalığı (COVID-19) pandemisinin Türkiye'deki kadınların cinsel davranışları üzerindeki etkilerini erkek partnerlerini de değerlendirerek incelemeyi amaçlamıştır.

Gereç ve Yöntem: Bu çalışmaya COVID-19 pandemiden önce evli veya son 6 ay içinde düzenli cinsel yaşamı olan ve Kadın Cinsel İşlev İndeksi (FSFI)ne göre cinsel fonksiyonel durumu belgelenmiş kadın (>18 yaş) dahil edildi. Çalışma Mayıs-Temmuz 2020 tarihlerinde gerçekleştirilmiştir. Katılımcılarla telefon veya e-posta yoluyla görüşme yapılmıştır. Kadınların cinsel işlevleri FSFI kullanılarak, erkek eşlerinin erektil işlevleri Uluslararası Eretil İşlev İndeksi-5 (IIEF-5) kullanılarak değerlendirildi. COVID-19 pandemisi öncesi ve sırasında alınan puanlar karşılaştırıldı.

Bulgular: Çalışmaya yaş ortalaması 39.83±9.38 yıl olan 116 kadın alındı. Kadınların pandemi süresince toplam FSFI skoru 20.98±7.53 idi. Pandemi öncesi döneme kıyasla tüm alt ölçek puanlarında ve FSFI toplam puanında anlamlı bir iyileşme gözlemlendi (her biri için $p<0,001$). Pandemi döneminde erkek partnerlerin IIEF-5 puanlarında pandemi öncesi döneme kıyasla (12.57±3.67'ye karşı 22.57±5.43; $p<0.001$) önemli bir iyileşme gözlemlendi. Pearson korelasyon analizi, katılımcıların FSFI puanları (alt ölçek ve toplam puanlar) ile erkek partnerlerinin IIEF-5 puanları arasında ($r=0.276-0.413$, $p<0.001$) anlamlı bir pozitif korelasyon olduğunu ortaya koydu.

Sonuç: Kadın cinsel işlevleri, COVID-19 pandemisi sırasında pandemi öncesi döneme kıyasla önemli ölçüde iyileşti ve erkek partnerlerinin cinsel işlevleriyle pozitif korelasyon gösterdi.

Anahtar Sözcükler: Covid 19; Kadın cinsel işlevi; Cinsellik, Eş

Geliş Tarihi/Date of Submission: 06.06.2022

Kabul Tarihi/Date of Acceptance: 26.05.2023

Yayın Tarihi/Date of Publication: 30.06.2023

Peer Review: Evaluated by independent reviewers working in the at least two different institutions appointed by the field editor.

Ethical Statement: Prof. Dr. Cemil Tascioglu City Hospital, Clinical Research Ethics Committee (Approval Number: 204/2020)

Plagiarism Checks: Yes - iThenticate

Conflict of Interest: No conflict of interest was declared by the authors.

Complaints: hmj@hitit.edu.tr

Authorship Contribution: Idea/Hypothesis: OS, MGC Design: OS, MGC Data collection/Data processing: OS, MGC Data Analysis: OS, MGC Preparation of the article: OS, MGC

Informed Consent: Consents were obtained from the patients.

Financial Disclosure: No financial support.

Copyright & License: Authors publishing with the journal retain the copyright to their work licensed under the CC BY-NC 4.0

Introduction

The outbreak caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was named the coronavirus disease 2019 (COVID-19) by the World Health Organization (WHO)(1, 2). The WHO then announced the disease as a pandemic on March 11, 2020, due to its rapid spread and related deaths.

Sexuality is an essential part of female life and is one of the factors critically responsible for mental health (3). Sexuality has a substantial impact on maintaining interpersonal communication and determines human well-being. The benefits of a good sexual life include having pleasure, reducing sexual tension, and expressing emotional intimacy(4). Human sexuality is controlled by numerous internal and external factors such as anatomy, hormones, and emotions.

Contagious diseases that are previously unknown or underestimated, particularly those spreading rapidly, may impact the human soul. The isolation and monotony of daily life considerably differentiate time. Furthermore, accompanying stress and anxiety may lead to mood alterations and depression or may reduce sexual desire(3).

Studies evaluating the effects of COVID-19 on sexual life have been recently published(5-9); the results from these studies are inconsistent. For example, while Yuksel and Ozgor reported increased sexual desire and frequency of sexual intercourse in their study(5), Fuchs et al.(6) observed a decrease in the scores of all subscales of the Female Sexual Function Index (FSFI). Furthermore, to the best of our knowledge, no study in the literature evaluates the sexual attitudes of partners during the COVID-19 pandemic. Thus, the present study aimed to evaluate the sexual functions of females in Turkey during the COVID-19 pandemic compared with the pre-pandemic period by also evaluating their male partners.

Methods

The females included in the present study were selected from those previously included in an unpublished study (2018-2019) in the Urology Outpatient Clinic of Istanbul and completed the FSFI. These patients constituted the control group of an overactive bladder study. Accordingly, the present study included females (>18 years of age) who were married or had a regular sexual life in the last 6 months and had documented sexual functional status before the COVID-19 pandemic. In addition, females who underwent pelvic surgery or received radiotherapy had urinary incontinence or any psychiatric or neurological disorder or were positive for COVID-19 were excluded. The present study was carried out between May 2020 and July 2020 (during the COVID-19 pandemic) and was approved by the Ethics Committee of Prof. Dr Cemil Tascioglu City Hospital (approval number: 204/2020). Written informed consent of each participant was also obtained.

The females included in the study were interviewed via phone call or e-mail. Participants clicked a link on the form sent in the e-mail, which included confirmation of their participation in the study. Those who participated via telephone declared that they participated in the study with the SMS verification code sent to their phones. Their demographics included

age, body mass index (BMI), educational and income levels, comorbidities, and the number of previous births. In addition, all females were asked to complete the FSFI, and their male partners were asked to complete the International Index of Erectile Function-5 (IIEF-5).

The Turkish version of the FSFI, developed in 2000 by Rosen et al.(10) to assess female sexual function, was validated in 2005 by Aygin and Aslan(11). The FSFI is a five-point Likert-type scale with six sub-scales: desire, arousal, lubrication, orgasm, satisfaction, and pain. The scale consists of 19 items with scores ranging from 2.0 to 36.0. A total score of <26.55 indicates sexual dysfunction(12). In addition, the validated Turkish version of the IIEF-5 was used for assessing male sexual function(13). The IIEF-5 was used in this study as it is a highly reliable and validated scoring system to evaluate the severity of erectile dysfunction(14).

All data were prospectively recorded in the electronic data system. The scores obtained before and during the COVID-19 pandemic were compared.

Statistical Analysis

All data were analyzed using the IBM SPSS Statistics for Windows version 25.0 (IBM Corp.; Armonk, NY, USA). The Kolmogorov-Smirnov test assessed the normality distribution of data. Dependent variables were analyzed using the dependent sample t-test and the Wilcoxon test. Pearson's correlation analysis was used to evaluate the relationship between the sexual functions of the females and their male partners. A *p*-value of <0.05 was considered significant.

Results

The study included 116 participants with a mean age of 39.83±9.38 years (range 27-55 years). 81 of the participants answered the questionnaire via telephone. The mean BMI of the participants was 29.44±5.78 kg/m² (range 18-40.2 kg/m²). The mean age of the male partners was 42.25±12.65. The demographic characteristics of the participants are demonstrated in Table 1.

Table 1. Demographic characteristics of the participants (n=116)

Demographic Characteristics(n=116)		Female Patients Mean±SD	Male Partners Mean±SD
Age		39.83±9.38	42.25±12.65
BMI		29.44±5.78	32.25±6.12
Education Level	Primary School	71(61.21%)	67(57.76%)
	High School	35(30.17%)	40(34.48%)
	University	10(8.62%)	9(7.76%)
Socioeconomic Status	Low	40(34.48%)	
	Middle	58(50%)	
	High	18(15.52%)	
Parity (Median (IQR))		2 (0-5)	

BMI, body mass index; SD, standard deviation.

Evaluation of the FSFI scores of the participants before and after the COVID-19 pandemic revealed a significant improvement in all subscale scores and in the total score of the FSFI during the pandemic period compared with the pre-pandemic period (*p*<0.001 for all, Table 2). In addition, a significant improvement was also observed in the IIEF-5

Table II. Comparisons of the sexual function scale scores before and during the coronavirus disease 2019 (COVID-19) pandemic for the participants and their partners

	Before COVID-19 Mean±SD	During COVID-19 Mean±SD	<i>p</i>
FSFI subscale scores			
FSFI-Desire	1.56±1.03	3.88±1.38	<0.001
FSFI-Arousal	1.38±1.16	3.31±1.63	<0.001
FSFI-Lubrication	1.81±1.63	3.55±1.55	<0.001
FSFI-Orgasm	1.69±1.51	3.07±1.37	<0.001
FSFI-Satisfaction	1.85±1.60	3.43±1.76	<0.001
FSFI-Pain	2.03±1.95	3.67±1.71	<0.001
FSFI-Total score	10.57±7.36	20.98±7.53	<0.001
IIEF-5 score	12.57±3.67	22.57±5.43	<0.001

COVID-19, coronavirus disease 2019; SD, standard deviation; FSFI, Female Sexual Function Index; IIEF-5, International Index of Erectile Function-5.

scores of male partners during the pandemic period compared with the pre-pandemic period (12.57±3.67 vs 22.57±5.43; $p<0.001$).

Evaluation of the correlation between the sexual functions of female participants and their male partners revealed that all subscale scores and total scores of the FSFI showed a significant positive correlation with the IIEF-5 score ($r=0.276-0.433$, $p<0.001$ for all, Table-3).

Table III. Results of Pearson's correlation analysis between the sexual functions of female participants and their male partners

FSFI Subscale scores		IIEF-5
FSFI-Desire	<i>r</i>	0.393
	<i>p</i>	<0.001
FSFI-Arousal	<i>r</i>	0.373
	<i>p</i>	<0.001
FSFI-Lubrication	<i>r</i>	0.341
	<i>p</i>	<0.001
FSFI-Orgasm	<i>r</i>	0.276
	<i>p</i>	<0.001
FSFI-Satisfaction	<i>r</i>	0.433
	<i>p</i>	<0.001
FSFI-Pain	<i>r</i>	0.393
	<i>p</i>	<0.001
FSFI-Total score	<i>r</i>	0.413
	<i>p</i>	<0.001

IIEF-5, International Index of Erectile Function-5; FSFI, Female Sexual Function Index.

Discussion

The present study revealed that the sexual functions of females improved during the COVID-19 pandemic period as compared with the pre-pandemic period and were correlated with the sexual functions of their male partners.

The term "sexual behavior" comprises a wide range of actions. Previous reports have analyzed the effects of mass disasters on the sexual behaviors of females. For example, Kissinger et al.(15) reported decreased birth control and genital hygiene following Hurricane Katrina. Likewise, Liu et

al.(16) investigated the effects of the Wenchuan earthquake on female reproductive health. They reported decreases in the frequency of sexual intercourse, degree of satisfaction with sexual life, and desire to have a baby. In addition, Hannoun et al.(17) investigated the effects of a short period of war on the menstrual cycle of women and determined menstrual abnormalities at a rate ranging from 10% to 35% in women living in the exposed zones. Studies show that anxiety and depression increased during the Covid-19 outbreak. Yeen Huang et al. Showed that the prevalence of generalized anxiety disorder and depressive symptoms during the pandemic period was 35.1% and 20.1%, respectively(18). The majority of studies on COVID-19 that have been conducted to date aimed to assess the impact of the pandemic on physical health. This has led us to investigate the effects of the COVID-19 pandemic on mental health and sexual health.

Earlier studies have demonstrated that the COVID-19 pandemic affects sexual functions by reducing sexual desire and frequency of sexual intercourse(19). The COVID-19 pandemic has caused substantial increases in stress and anxiety levels and led to remarkable decreases in the frequency of sexual intercourse due to lack of desire(20, 21). On the other hand, another study found increased sexual desire and increased frequency of sexual intercourse in females(5). In addition, it was reported that the use of contraception decreased and menstrual disorders increased(5). In the present study, the sexual function scores of the females significantly improved during the COVID-19 pandemic compared with the pre-pandemic period. This finding could be attributed to the couples' getting more intimate due to spending more time at home due to the lockdown.

As it is known that COVID-19 is transmitted through direct person-to-person contact, partners may avoid sexual intercourse to avoid close contact. Although SARS-CoV-2 is known to spread through bodily fluids, there is yet no evidence of the isolation of the virus in semen or vaginal fluid(22). Close contact between the partners due to sexual intercourse may affect the transmission between partners. In a study carried out by healthcare professionals, decreases in the number of sexual intercourse, duration of intercourse, and duration of foreplay were observed, and 59.4% of the participants were reported to be concerned about transmitting the disease to their partners(20). Contrary to the other studies, the results of the present study revealed increased sexual desires in male partners. This increment showed a correlation with the increased sexual functions of females.

Studies are showing that the negativity in the sexual function of individuals increases in natural disasters or wars. One study concluded that 30% of 1093 participants suffered post-tsunami sexual dysfunction(23). In the study evaluating female sexual function during the COVID-19 pandemic, although higher FSFI scores were found before the pandemic, no statistical difference was revealed(24). Male partners of female individuals were not evaluated in the study.

In studies conducted during the Covid-19 period, Karagoz et al. stated that the sexual functions of couples who can spend time together increase(21). In the study conducted with a total of 245 volunteers, they found that the sexual functions of the participants decreased compared to the

pre-pandemic period. In another study examining the sexual attitudes of health workers, a decrease was found in the sexual functions of both men and women compared to the pre-pandemic period(25). This decrease was associated with female individuals, those with children, and increasing age. In the study conducted in Italy at the beginning of the pandemic, it was reported that the sexual functions of the couples increased with the increase in the length of time they were together(26). It was also supported in a recent study that the effect of female sexual functions is also effective in the male partner(27). In our study, we thought that the increase in women's sexual functions is related to the fact that couples spend time together due to their low socioeconomic level.

The present study has some limitations. Firstly, the stress and anxiety levels of the participants were not evaluated. However, it should be taken into consideration that the number of COVID-19 cases when the present study was conducted was in a decreasing trend, which could have eliminated the stress factor. Not evaluating other sexual functions (ejaculation, orgasm, etc.) of male partners is another limitation. Secondly, another limitation could be interviewing the participants via phone call or e-mail instead of a face-to-face interview.

Conclusion

In the present study, an improvement was observed in the sexual functions of females during the COVID-19 pandemic. An increase was also observed in male partners' sexual functions, and a significant positive correlation was found between the sexual functions of females and their male partners. Considering the effects of COVID-19 on mental, psychological and sexual functions, further studies on this issue are warranted.

References

1. Wang C, Horby PW, Hayden FG, Gao GF. A novel coronavirus outbreak of global health concern. *Lancet*. 2020;395(10223):470-473.
2. Park SE. Epidemiology, virology, and clinical features of severe acute respiratory syndrome -coronavirus-2 (SARS-CoV-2; Coronavirus Disease-19). *Clin Exp Pediatr*. 2020;63:119-124.
3. Hamilton LD, Meston CM. Chronic stress and sexual function in women. *The journal of sexual medicine*. 2013;10(:2443-2454).
4. Meston CM, Kilimnik CD, Freihart BK, Buss DM. Why Humans Have Sex: Development and Psychometric Assessment of a Short-Form Version of the YSEX? Instrument. *J Sex Marital Ther*. 2020;46:141-159.
5. Yuksel B, Ozgor F. Effect of the COVID-19 pandemic on female sexual behavior. *Int J Gynaecol Obstet*. 2020;150:98-102.
6. Fuchs A, Matonóg A, Pilarska J, Sieradzka P, Szul M, Czuba B, et al. The Impact of COVID-19 on Female Sexual Health. *Int J Environ Res Public Health*. 2020;17.
7. Baldassarre E. An andrologist in the front line Covid-19 team. *Int J Impot Res*. 2020;32:558-559.
8. Cocci A, Presicce F, Russo GI, Cacciamani G, Cimino S, Minervini A. How sexual medicine is facing the outbreak of COVID-19: experience of Italian urological community and future perspectives. *Int J Impot Res*. 2020;32:480-482.
9. Rizzo M, Liguori G, Verze P, Palumbo F, Cai T, Palmieri A. How the andrological sector suffered from the dramatic Covid 19 outbreak in Italy: supportive initiatives of the Italian Association of Andrology (SIA). *Int J Impot Res*. 2020;32:547-548.
10. Rosen R, Brown C, Heiman J et al. The Female Sexual Function Index (FSFI): a multidimensional self-report instrument for the assessment of female sexual function. *J Sex Marital Ther*. 2000;26:191-208.
11. Aygin D, Aslan F. The Turkish adaptation of the Female Sexual Function Index. *Turkiye Klinikleri Journal of Medical Sciences*. 2005;25:393-399.
12. Wiegel M, Meston C, Rosen R. The female sexual function index (FSFI): cross-validation and development of clinical cutoff scores. *J Sex Marital Ther*. 2005;31:1-20.
13. Ozturk MI, Koca O, Keles MO, Gunes M, Kaya C, Karaman MI. Question for a questionnaire: the International Index of Erectile Function. *Int J Impot Res*. 2011;23:24-26.
14. Rosen RC, Riley A, Wagner G, Osterloh IH, Kirkpatrick J, Mishra A. The international index of erectile function (IIEF): a multidimensional scale for assessment of erectile dysfunction. *Urology*. 1997;49:822-830.
15. Kissinger P, Schmidt N, Sanders C, Liddon N. The effect of the hurricane Katrina disaster on sexual behavior and access to reproductive care for young women in New Orleans. *Sex Transm Dis*. 2007;34:883-886.
16. Liu S, Han J, Xiao D, Ma C, Chen B. A report on the reproductive health of women after the massive 2008 Wenchuan earthquake. *Int J Gynaecol Obstet*. 2010;108:161-164.
17. Hannoun AB, Nassar AH, Usta IM, Zreik TG, Abu Musa AA. Effect of war on the menstrual cycle. *Obstet Gynecol*. 2007;109:929-932.
18. Huang Y, Zhao N. Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 outbreak in China: a web-based cross-sectional survey. *Psychiatry Res*. 2020;288:112954.
19. Li G, Tang D, Song B et al. Impact of the COVID-19 Pandemic on Partner Relationships and Sexual and Reproductive Health: Cross-Sectional, Online Survey Study. *J Med Internet Res*. 2020;22:e20961.
20. Culha MG, Demir O, Sahin O, Altunrende F. Sexual attitudes of healthcare professionals during the COVID-19 outbreak. *International journal of impotence research*. 2020:1-8.
21. Karagöz MA, Gül A, Borg C et al. Influence of COVID-19 pandemic on sexuality: a cross-sectional study among couples in Turkey. *International journal of impotence research*. 2020:1-9.
22. Paoli D, Pallotti F, Colangelo S et al. Study of SARS-CoV-2 in semen and urine samples of a volunteer with positive naso-pharyngeal swab. *J Endocrinol Invest*. 2020;43:1819-1822.
23. Ranawaka DS, Dewaraja R. Tsunami counselling project of the Sri Lanka National Institute of professional counsellors. *International Congress Series*. 2006;1287:79-81.
24. Ilgen O, Kurt S, Aydin C, Bilen E, Kula H. COVID-19

pandemic effect on female sexual function. *Ginekol Pol.* 2021.

25. De Rose AF, Chierigo F, Ambrosini F et al. Sexuality during COVID lockdown: a cross-sectional Italian study among hospital workers and their relatives. *Int J Impot Res.* 2021;33:131-136.

26. Cocci A, Giunti D, Tonioni C et al. Love at the time of the Covid-19 pandemic: preliminary results of an online survey conducted during the quarantine in Italy. *Int J Impot Res.* 2020;32:556-557.

27. Sarıkaya K, Senocak C, İbiş M, Sadioglu E, Çiftçi M, Bozkurt Ö. The Effect Of Bladder Pain Syndrome/Interstitial Cystitis on Partner Sexual Functions. *Journal of Istanbul Faculty of Medicine / İstanbul Tıp Fakültesi Dergisi.* 2022.