

EXAMINATION OF THE EFFECT OF COVID-19 ON SEXUAL DYSFUNCTION IN WOMEN

Yeliz Kaya¹, Coskun Kaya², Tugba Tahta³, Tugba Kartal³, and Yavuz Tokgöz³

¹, Eskişehir Osmangazi University Faculty of Health Sciences,

²Eskisehir City Hospital

³Affiliation not available

October 29, 2020

Abstract

ABSTRACT Aim: To investigate the effect of COVID-19 on sexual dysfunction in women. **Materials and Methods:** The women diagnosed with COVID-19 and hospitalized at a tertiary hospital were included. They completed the Introductory Data Form, the Female Sexual Function Index-(FSFI), and the Short Form-36 Quality of Life Scale (SF-36). **Results:** 15 women between the ages of 19-49 who completed the treatment protocol, discharged at least 14 days before, and who had not been diagnosed as sexual dysfunction sexually active earlier were included to the study. It was detected that weekly sexual intercourse before and after COVID-19 significantly differed ($p=0.047$). The frequency of relationships decreased statistically after COVID-19. The mean value of the FSFI satisfaction score differs from COVID-19 before and after diagnosis ($p=0.012$). The mean satisfaction score before COVID-19 was 3.47, and after COVID-19 was 2.93. The score of the subgroups of FSFI did not differ from COVID-19 before and after diagnosis ($p>0.050$). The median value of SF-36 pain differs from COVID-19 before and after diagnosis ($p=0.008$). **Conclusion:** it was concluded that the frequency of sexual intercourse, sexual satisfaction in women decreased after COVID-19 disease, and the quality of life scores did not change in a statistically significant way.

INTRODUCTION

An outbreak of SARS-CoV-2 infection by the World Health Organization (WHO) has been named Coronavirus disease 2019 (COVID-19) and is known as Severe Acute Respiratory Syndrome (1-3). It was declared as a pandemic by the WHO on March 11, 2020, due to its rapid spread and deaths in many countries (1). The highly contagious disease was first detected in December 2019 in Wuhan, China. Fever, dry cough, muscle aches, fatigue, and shortness of breath have been observed in patients. In later times, it spread to all the cities of China, and then worldwide.

No definitive treatment for COVID-19 is currently available. Non-pharmacological practices such as covering the mouth and nose during coughing/sneezing, frequent hand washing, and maintaining the social distance between people can only delay the spread of the virus and ease the burden of the disease. Social distancing strategies between the closure of educational institutions and workplaces, cancellation of mass meetings, the isolation of suspected or confirmed cases, quarantine of persons who have come in contact with confirmed cases, stay-at-home suggestions, and in some cities have even a mandatory quarantine (4). Classic public health measures, including isolation, quarantine, social distance, and community containment, are used to reduce the pandemic of this respiratory disease (5). Preventive measures such as social distance are crucial, but they are thought to have long-term consequences. Measures to protect the physical health and health systems can have negative effects on the welfare level of individuals. The social isolation measures adopted and proposed worldwide to control this pandemic are of unprecedented magnitude in modern history. Since physical distancing and social isolation can directly affect both the physical and psychological health of

individuals, many such measures are interpreted as having far-reaching consequences that are not yet known. These results can be related to sexual health as well as in almost any area (6). Biological sex differences against COVID-19 are largely unknown, but in the 2014 Ebola pandemic, the fact that gender issues and women's sexual health were neglected is known (7).

Because sexual health is a fundamental determinant of people's well-being, it is thought that sexual contact will be negatively affected by this condition, although it does not end completely during the COVID-19 pandemic (8). Therefore, social measures taken in response to COVID-19 will change the social interactions and sexual life behaviors of patients (9).

Sexual dysfunction in women is quite common and is a distressing condition that affects the lives of many women. This includes female sexual interest/arousal disorder, hypoactive sexual desire disorder, genito-pelvic pain/penetration disorder, and female orgasm disorder (10). While women experience sexual dysfunction so often, the question of whether contracting COVID-19 also negatively affects their sexual function is also raised. Therefore, sexual health and reproductive health throughout this pandemic should also be included in the content of COVID-19 treatment. Universal health coverage should include women.

This study aims to examine the effect of COVID-19 on sexual dysfunction in women.

MATERIAL AND METHODS

This study is a descriptive type of research conducted in COVID19 women between May June 2020 in a tertiary hospital. Ethical and administrative permissions were obtained to conduct the research.

The universe of the study is the women who were diagnosed with COVID-19 in Eskişehir Osmangazi University Research Hospital, and the sample of the study is the 15 women between the ages of 19-49 who completed the treatment protocol, discharged at least 14 days before, and who had not been diagnosed as sexual dysfunction sexually active earlier.

Ensuring women who participated in the study to read the voluntary consent form, and after they accepted that form which indicates that they have voluntarily participated, the Female Sexual Function Index (FSFI) and Short Form-36 Quality of Life Scale (SF36) filled two times using the telephone interview technique by the researcher including The Introductory Data Form and treatment protocol before and after the COVID-19 period.

FSFI is a Likert-type scale that assesses sexual dysfunction in women with 19 substances. A validity reliability study by Rosen et al. (2000) of the FSFI found that the Cronbach's Alpha coefficient was 0.82, and the test-retest reliability was 0.79 - 0.86 (11). The validity and reliability analysis of the scale in Turkish was done by Öksüz and Malhan (2005). Cronbach Alpha coefficient of the scale adapted to Turkish was 0.95, test-retest reliability was 0.75 - 0.95 (12). The scale consists of six separate titles: cravings, arousal, lubrication, orgasm, sexual success, and pain. Each title is scored from 0 or 1 to 6. The lowest score is two and the highest score is 36. A high score means better function. In a study conducted by Rosen et al. (2000) and Tas et al. (2006) in Turkey, functional status; FSFI score >30 is classified as good, between 23-29 is medium, and <23 is classified as bad (11, 13). In this study, which had a Cronbach's Alpha coefficient of 0.79, the presence of sexual dysfunction was also accepted in women who scored 23 and below.

SF-36 is a multi-item Self-Assessment Scale that includes eight health concepts. A validity reliability study was conducted by Ware et al. (1992), and the Cronbach's Alpha coefficient was found to be between 0.62 and 0.94 (14). The validity and reliability analysis of the scale in Turkish was done by Koçyiğit et al. (1999). The Cronbach's Alpha coefficient of each sub-scale adapted to Turkish was found to be between 0.7324 and 0.7612 (15). The scale examines the health's eight dimensions with 36 items; physical function (10 items), social function (2 items), the physical functions which are related to role limitations (4 items), emotional problems, role limitations (3 items), mental health (5 items), energy/vitality (4 items), pain (2 items) and general health perception (5 items)(14). As scores increase, so does the quality of life.

Statistical Analysis

The data were analyzed with IBM SPSS V23. Conformance to normal distribution was studied with Shapiro Wilk. Dependent samples t-test was used to compare data with the normal distribution. The Wilcoxon test was used to compare data that did not show normal distribution. Data matching the normal distribution were presented as a mean \pm standard deviation. Data that did not show the normal distribution was given in the form of a median (minimum-maximum). The significance level was taken as $p < 0.050$.

RESULTS

The average age of the participating women was 33.3 (Table 1). 33.3% of the women graduated from associate degree, 33.3% from university, 20% from high school, and 13.3% from middle school (Table 1). 46.7% of women were civil servants, 26.7% were housewives, and 20% were workers. 93.3% of women do not have a chronic disease (Table 1). 33.3% of women complained of cough, 26.7% had diarrhea, 13.3% had a fever, 13.3% had muscle pain, 13.3% had a loss of smell, 13.3% had vomiting, 13.3% had a loss of taste, one person had a sore throat, one woman had a mild headache, one woman had fatigue / weakness (Table 1).

The significant difference was detected between weekly sexual intercourse before and after COVID-19 ($P=0.047$) (Table 2). The frequency of sexual intercourse before COVID-19, 6 cases that were small compared to after COVID-19, 8 cases that did not change the frequency of intercourse, and 1 case that was equal before and after COVID-19 were observed (Table 2). Although the median values were equal to each other, the frequency of relationships decreased statistically after COVID-19 (Table 2).

The average value of the satisfaction score differs according to COVID-19 before and after diagnosis ($P=0.012$) (Table 3). The average satisfaction score before COVID-19 was 3.47, and after COVID-19 was 2.93 (Table 3). Cravings, arousal, lubrication, orgasm, pain, and FSFI total score do not differ before and after COVID-19 diagnosis ($p > 0.050$) (Table 3).

The median pain value of COVID-19 varies between before and after diagnosis ($p=0.008$) (Table 4). The median pain score before COVID-19 was 86.67, while after COVID-19, it was 76.83 (Table 4).

Physical function, role difficulties, general health, vitality, social function, emotional role difficulties, mental health scores do not differ according to before and after COVID-19 diagnosis ($p = 0,050$) (Table 4).

DISCUSSION

Gender-parsed data for COVID-19 reveals that while it has so far shown an equal number of cases between men and women, vulnerability to death and disease differs in the context of gender. According to the gender distribution of COVID-19 cases in Turkey, the incidence of cases is 9% higher in men than in women (16).

Since the onset of the COVID-19 pandemic, numerous series of cases have been published in which clinical features specific to COVID-19 disease have been reported. Meta-analyses of these studies indicate that the most common clinical symptom is fever, followed by coughing (17-20). In our study, the most common clinical feature when applying to a health care facility was identified as a cough with 33.3%. Symptoms of fever, muscle pain, loss of smell, vomiting, and loss of taste (13.3%), diarrhea (26.7%) were also found to be the most common clinical features.

It has been reported that the frequency of sexual intercourse in women is associated with age and duration of marriage (21). It was reported that the frequency of sexual intercourse in women decreases during life periods such as pregnancy and climacteric periods, as well as bipolar disorder (22-26). In people infected with the COVID-19 virus and quarantined, there has not been enough information about changes in sexual habits. In a study conducted in China, where the disease was first observed, examining the impact of the COVID-19 pandemic on sexual and reproductive health, 41% of participants reported a decrease in the frequency of sexual intercourse (27). Another study found that the average frequency of sexual intercourse decreased from 6.3 ± 1.9 per month to 2.3 ± 1.8 with social distance measures taken during the COVID-19 pandemic (28). A study evaluating the effect of the COVID-19 pandemic on female sexual behavior in women in Turkey found that the frequency of sexual intercourse during the pandemic increased significantly compared to 6-12 months ago (29). In our study, it was determined that women's intercourse frequency decreased after

COVID-19 disease.

In a study conducted in Italy, the total FSFI score before and after COVID-19 disease was found to be 29.2 ± 4.2 and 19.2 ± 3.3 , respectively, and was statistically significant ($p < .0001$) (28). In our study, the FSFI total score before and after COVID-19 was found to be 24.75 ± 6.55 and 23.03 ± 7.87 , respectively. When we looked at the lower areas, the satisfaction score decreased, and there was no statistical difference in the other areas and the total score.

A group of experts from the Spanish Association for Sexuality and Mental Health agreed on recommendations for maintaining lower-risk sexual activity, depending on the person's clinical and partner status, based on available information about SARS-CoV-2. The main advice is to return to safe sex after the quarantine is over and the symptoms disappear. (depending on the SARS-CoV-2 carrying time, 28 days, or 33 days for 60-year-olds). In all other cases (those under quarantine, those with some clinical symptoms, health professionals in contact with COVID-19 patients, and during pregnancy), it is recommended that sexuality should be avoided (30).

A study examining the absolute difference in SF-36 scores between those with COVID-19 disease and the normal population in China found that sick people had higher pain and vitality scores, but lower physiological function, social function, and role difficulties scores (31). In our study, the median value of pain differs from COVID-19 before and after diagnosis ($p=0.008$). The median pain score before COVID-19 was 86.67, while after COVID-19, it was 76.83. Physical function, role difficulties, general health, vitality, social function, role difficulties, emotional, mental health scores do not differ according to COVID-19 before and after diagnosis ($p>0.050$).

While the main limitation of this study was the limited number of the participants; to preventive measures such as social distance taken to prevent COVID-19 disease, anxiety and uncertainty about the future have an impact on sexual function and quality of life in people. Information about changes in sexual habits and the impact on the quality of life in the isolated population and people infected with COVID-19 is so far scarce. It is also important to note that in cases of outbreaks such as COVID-19, women are more affected, and gender norms pose a risk. In our study, we examined the effect of COVID-19 on sexual dysfunction and quality of life in women and concluded that the frequency of sexual intercourse, FSFI total score, and sexual satisfaction of women decreased after COVID-19 disease, and the quality of life scores did not change in a statistically significant way. Studies that need to be done with the wider patient population are needed to better identify the issue. Given the limitation of literature information on the subject, we believe that our study will lead to further studies.

REFERENCES

1. Park SE. Epidemiology, virology, and clinical features of severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2; Coronavirus Disease-19). *Clinical and experimental pediatrics*. 2020;63(4):119.
2. Wang C, Horby PW, Hayden FG, et al. A novel coronavirus outbreak of global health concern. *The Lancet*. 2020;395(10223):470-3.
3. Opening WWD-Gs. Remarks at the Media Briefing on COVID-19-11 March 2020.
4. Prevention ECfD, Control. Considerations relating to social distancing measures in response to COVID-19: second update. Author Stockholm; 2020.
5. Wilder-Smith A, Freedman DO. Isolation, quarantine, social distancing and community containment: pivotal role for old-style public health measures in the novel coronavirus (2019-nCoV) outbreak. *Journal of travel medicine*. 2020;27(2):taaa020.
6. Alpalhão M, Filipe P. The Impacts of Isolation Measures Against SARS-CoV-2 Infection on Sexual Health. *AIDS and Behavior*. 2020:1-2.

7. Chattu VK, Yaya S. Emerging infectious diseases and outbreaks: implications for women's reproductive health and rights in resource-poor settings. Springer; 2020.
8. Pampati S, Lowry R, Moreno MA, et al. Having a Sexual Photo Shared Without Permission and Associated Health Risks: A Snapshot of Nonconsensual Sexting. *JAMA pediatrics*. 2020.
9. Mori C, Cooke JE, Temple JR, et al. The prevalence of sexting behaviors among emerging adults: A meta-analysis. *Archives of Sexual Behavior*. 2020:1-17.
10. Shaeer O, Skakke D, Giraldi A, et al. Female orgasm and overall sexual function and habits: a descriptive study of a cohort of US women. *The Journal of Sexual Medicine*. 2020.
11. Rosen CB, J. Heiman, S. Leiblum, C. Meston, R. Shabsigh, D. Ferguson, R. D'Agostino, 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.
12. Oksuz E, Malhan S. Prevalence and risk factors for female sexual dysfunction in Turkish women. *The Journal of urology*. 2006;175(2):654-8.
13. Demir Ö, Parlakay N, Gök G, et al. Hastane çalışanı bayanlarda cinsel işlev bozukluğu. *Androloji*. 2007;33(2):156-60.
14. Ware Jr JE, Sherbourne CD. The MOS 36-item short-form health survey (SF-36): I. Conceptual framework and item selection. *Medical care*. 1992;473-83.
15. Koçyiğit H, Aydemir Ö, Fişek G, et al. Form-36 (KF-36)'nın Türkçe versiyonunun güvenilirliği ve geçerliliği. *İlaç ve tedavi dergisi*. 1999;12(2):102-6.
16. Yıldırım C. COVID-19: Evaluation in the Context of Gender. *Toplum ve Bilim/Science & Society*. 2020;2020/2:94-7.
17. Cluver L, Lachman JM, Sherr L, et al. Parenting in a time of COVID-19. 2020.
18. Wu P, Fang Y, Guan Z, et al. The psychological impact of the SARS epidemic on hospital employees in China: exposure, risk perception, and altruistic acceptance of risk. *The Canadian Journal of Psychiatry*. 2009;54(5):302-11.
19. Wang T, Du Z, Zhu F, et al. Comorbidities and multi-organ injuries in the treatment of COVID-19. *The Lancet*. 2020;395(10228):e52.
20. Wang D, Hu B, Hu C, et al. Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus-infected pneumonia in Wuhan, China. *Jama*. 2020;323(11):1061-9.
21. Yılmaz E. Konya il merkezinde yaşayan evli nüfusta cinsel sorunların araştırılması: Selçuk Üniversitesi Tıp Fakültesi; 2007.
22. GÖKYILDIZ Ş, BEJİ NK. The effects of pregnancy on sexual life. *Journal of Sex & Marital Therapy*. 2005;31(3):201-15.
23. Özkan S, Demirhan H, Çınar İÖ. GEBELİK VE BAZI SOSYODEMOGRAFİK ÖZELLİKLERİN CİNSEL FONKSİYON ÜZERİNE ETKİSİ. *Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi*. 2009;12(3):28-37.
24. ERYILMAZ G, Emel E, ZİNCİR H. GEBELİKTE CİNSEL YAŞAMI ETKİLEYEN FAKTÖRLERİN İNCELENMESİ. *Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi*. 2002;5(1).
25. KARAKUŞ A, YANIKKEREM E. Klimakterik Dönemde Cinsel Disfonksiyon: Female Sexual Function Index (FSFI)-Kadın Cinsel Fonksiyon İndeksi İle Yapılan Son 5 Yıllık Çalışmalar. *Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi*. 2016;5(1):64-85.

26. Namlı Z, Karakuş G, Tamam L, et al. Bipolar Bozuklukta Cinsellik ve Cinsel İşlev Bozuklukları. *Psikiyatride Guncel Yaklasimler-Current Approaches in Psychiatry*. 2016;8(4):309-20.

27. 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. *Journal of Medical Internet Research*. 2020;22(8):e20961.

28. Schiavi MC, Spina V, Zullo MA, et al. Love in the time of COVID-19: Sexual function and quality of life analysis during the social distancing measures in a group of Italian reproductive-age women. *The Journal of Sexual Medicine*. 2020.

29. Yuksel B, Ozgor F. Effect of the COVID-19 pandemic on female sexual behavior. *International Journal of Gynecology & Obstetrics*. 2020.

30. Cabello F, Sánchez F, Farré JM, et al. Consensus on Recommendations for Safe Sexual Activity during the COVID-19 Coronavirus Pandemic. *Journal of clinical medicine*. 2020;9(7):2297.

31. Chen K-Y, Li T, Gong F, et al. Predictors of health-related quality of life and influencing factors for COVID-19 patients, a follow-up at one month. *Frontiers in Psychiatry*. 2020;11:668.

Table 1. Distribution of women’s demographic characteristics

| | Frequency (n) | Percent (%) |
|---------------------------------|---------------|-------------|
| Age (ortalama ± S.sapma) | 33,3 ± 5,6 | |
| Education | | |
| Middle School | 2 | 13,3 |
| High School | 3 | 20,0 |
| Associate Degree | 5 | 33,3 |
| University | 5 | 33,3 |
| Profession | | |
| Civil Servant | 7 | 46,7 |
| Worker | 3 | 20,0 |
| Housewife | 4 | 26,7 |
| Other | 1 | 6,7 |
| Chronic illness | | |
| No | 14 | 93,3 |
| Other | 1 | 6,7 |
| Complaint* | | |
| Cough | 5 | 33,3 |
| Diarrhea | 4 | 26,7 |
| Fever | 2 | 13,3 |
| Muscle Pain | 2 | 13,3 |
| Loss of Smell | 2 | 13,3 |
| Vomiting | 2 | 13,3 |
| Loss of Taste | 2 | 13,3 |
| Throat | 1 | 6,7 |
| Mild headache | 1 | 6,7 |
| Contact | 1 | 6,7 |
| Fatigue / weakness | 1 | 6,7 |

* Multi-answer question

Table 2. Comparison of weekly sexual intercourse frequency before and after COVID-19

| | Average \pm S. Deviation | Average \pm S. Deviation | Median (min-max) | Median (min-max) |
|------------------------|----------------------------|----------------------------|------------------|------------------|
| Before COVID-19 | Before COVID-19 | 2,9 \pm 1,9 | 2,9 \pm 1,9 | 2,1 \pm 1,7 |
| After COVID-19 | After COVID-19 | 2 (1 - 7) | 2 (1 - 7) | 2 (1 - 7) |

Z: Wilcoxon test statistics

Table 3. Comparison of the female sexual function scale (FSFI) before and after COVID-19 diagnosis

| | Before | Before | After | After | |
|---------------------|---------------------------|-------------------|-------------------|---------------------------|-------------------|
| | Average \pm S.Deviation | Median (min-max) | Median (min-max) | Average \pm S.Deviation | Median (min-max) |
| Cravings | 3,8 \pm 1,21 | 3,6 (2,4 - 6) | 3,6 (2,4 - 6) | 3,96 \pm 1,06 | 3,6 (2,4 - 6) |
| Arousal | 3,62 \pm 1,33 | 3,9 (1,2 - 5,4) | 3,9 (1,2 - 5,4) | 3,72 \pm 1,47 | 3,9 (1,2 - 5,4) |
| Lubrication | 4,42 \pm 1,48 | 4,8 (1,2 - 6,6) | 4,8 (1,2 - 6,6) | 3,94 \pm 1,81 | 4,8 (1,2 - 6,6) |
| Orgasm | 4,16 \pm 1,32 | 4,4 (1,2 - 5,6) | 4,4 (1,2 - 5,6) | 3,76 \pm 1,63 | 4,4 (1,2 - 5,6) |
| Satisfaction | 3,47 \pm 1,34 | 3,6 (1,2 - 5,6) | 3,6 (1,2 - 5,6) | 2,93 \pm 1,32 | 3,6 (1,2 - 5,6) |
| Pain | 5,28 \pm 2,13 | 6 (1,2 - 7,2) | 6 (1,2 - 7,2) | 4,72 \pm 2,47 | 6 (1,2 - 7,2) |
| Total | 24,75 \pm 6,55 | 26,5 (8,4 - 32,9) | 26,5 (8,4 - 32,9) | 23,03 \pm 7,82 | 26,5 (8,4 - 32,9) |

t: Dependent samples t test statistics Z: Wilcoxon test statistics

Table 4. Comparison of SF-36 scale scores before and after COVID-19 diagnosis

| | Before | Before | After | After |
|------------------------------------|---------------------------|------------------|---------------------------|-------------------|
| | Average \pm S.Deviation | Median (min-max) | Average \pm S.Deviation | Median (min-max) |
| Physical Function | 90,33 \pm 14,82 | 100 (50 - 100) | 90,67 \pm 16,24 | 100 (50 - 100) |
| Role Difficulties | 85 \pm 35,1 | 100 (0 - 100) | 85 \pm 35,1 | 100 (0 - 100) |
| Pain | 86,67 \pm 19,15 | 100 (42,5 - 100) | 76,83 \pm 19,21 | 77,5 (32 - 100) |
| General Health | 70 \pm 17,22 | 70 (30 - 95) | 69 \pm 12,42 | 70 (50 - 100) |
| Vitality | 54 \pm 20,02 | 50 (30 - 85) | 50,67 \pm 13,87 | 50 (20 - 100) |
| Social Function | 52,5 \pm 23,24 | 50 (12,5 - 100) | 62,5 \pm 30,62 | 62,5 (12,5 - 100) |
| Emotional Role Difficulties | 73,33 \pm 42,16 | 100 (0 - 100) | 77,78 \pm 37,09 | 100 (0 - 100) |
| Mental Health | 55,47 \pm 21,69 | 56 (16 - 88) | 52,8 \pm 19,55 | 56 (20 - 100) |

t: Dependent samples t test statistics Z: Wilcoxon test statistics