



The Impact of COVID-19 Pandemic on Female Sexual Behavior

COVID-19 Salgınlarının Kadın Cinsel Davranışına Etkisi

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Abstract

Objective: The Coronavirus disease-2019 (COVID-19) related isolation has resulted in economic damage, loneliness, fear of death, and depression all around the world. Self-isolation and social distance lead to unintended psychological effects and negatively affect sexual life. This study aimed to investigate women's sexual behavior during the COVID-19 pandemic in our country.

Method: This prospective, observational study was conducted in a tertiary referral hospital between June 27 and July 27, 2020. A questionnaire consisting of 13 questions regarding the sexual life during the COVID-19 pandemic was applied to 169 women aged 18-45 years. Demographic characteristics were recorded. The questions evaluating sexual behavior about the relationship with partner, sexual desire, frequency of intercourse, sexual satisfaction, and fertility desire were asked.

Results: The mean age of the participants was 32.9±7.74 years (18-45). Regarding the per capita monthly income, 84 (60%) patients had a decrease, 53 (37.9%) of them remained stable, and only 3 (2.1%) of them had an increase during the pandemic. Sexual desire was decreased by 32.9% of the participants and remained the same in 58.6% of the participants. A higher rate of 40.5% was observed in the decreased group than in the stable income group with 22.7% (p=0.03). A statistically significant difference was found between the decrease in sexual desire rates. However, when the change in income level of the groups and their sexual satisfaction rates were compared, it was found that sexual satisfaction increased in those with a lower income level, and the difference was statistically significant (p=0.04).

Conclusion: Acute stress caused by the COVID-19 pandemic negatively affected sexuality. The decreased income level reduces sexual desire, but we observed an increase in sexual satisfaction rates in this group.

Keywords: Coronavirus, COVID-19, pandemic, sexual behavior, sexual function

Öz

Amaç: Koronavirüs hastalığı-2019 (COVID-19) ile ilişkili izolasyon tüm dünyada ekonomik hasar, yalnızlık, ölüm korkusu ve depresyon ile sonuçlandı. Kendini izole etme ve sosyal mesafe, istenmeyen psikolojik etkilere neden olur ve cinsel yaşamı da olumsuz etkiler. Bu çalışma, ülkemizde COVID-19 salgını sırasında kadınların cinsel davranışlarını incelemeyi amaçlamaktadır.

Yöntem: Bu prospektif, gözlemsel çalışma, 27 Haziran-27 Temmuz 2020 tarihleri arasında üçüncü basamak bir hastanede gerçekleştirildi. COVID-19 salgını sırasında cinsel yaşam ile ilgili 13 sorudan oluşan bir anket, 18-45 yaş arasındaki 169 kadına uygulandı. Demografik özellikler kaydedildi. Partnerle ilişki, cinsel istek, ilişki sıklığı, cinsel doyum, doğurganlık isteği gibi cinsel davranışları değerlendiren sorular soruldu.

Bulgular: Katılımcıların ortalama yaşı 32,9±7,74 (18-45) idi. Pandemi sırasında, aylık gelirin 84 (%60) hastada azaldığı, 53 (%37,9) hastada aynı kaldığı, sadece 3 (%2,1) hastada arttığı görüldü. Katılımcıların %32,9'unda cinsel istek azalırken, %58,6'sında aynı kaldı. Geliri azalan grupta cinsel istekte azalma (%40,5), geliri değişmeyen gruba (%22,7) göre daha yüksek idi. Cinsel istek oranlarındaki azalma arasında istatistiksel olarak anlamlı bir fark bulundu (p=0,03). Ancak grupların gelir düzeyi değişikliği ile cinsel doyum oranları karşılaştırıldığında ise gelir düzeyi azalanlarda cinsel doyumu arttığı, farkın ise istatistiksel olarak anlamlı olduğu bulundu (p=0,04).

Sonuç: COVID-19 salgınının neden olduğu akut stres, cinselliği olumsuz etkilemiştir. Azalan gelir düzeyi cinsel isteği azaltır, ancak bizim çalışmamızda bu grupta cinsel doyum oranlarında artış gözlemlenmiştir.

Anahtar kelimeler: Cinsel davranış, cinsel işlev, COVID-19, koronavirüs, salgın



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Introduction

COVID-19 is a contagious disease caused by severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2), a new type of coronavirus. World Health Organization (WHO) first declared the presence of the virus on December 31, 2019, following spreading viral pneumonia cases in Wuhan, China. WHO declared the COVID-19 outbreak as a pandemic on March 11, 2020 (1).

SARS-CoV-2 is RNA virus that primarily affects the respiratory system and is transmitted by large respiratory droplets or direct contact. It can be fatal by causing pneumonia, bronchitis, and SARS (2,3). At the time of writing this study, 80,805,661 people were infected, and 1,766,726 people died because of the disease worldwide. Moreover, borders were closed, travel restrictions and lockdowns were imposed.

The first coronavirus case was reported on March 10, 2020 in our country (4). The health authorities also implemented strict restrictions such as self-isolation, the use of masks, and home quarantine to prevent the spread of the disease.

The disease-related isolation resulted in loneliness, fear of death, and depression. These restrictions also caused the separation of families and partners, and unemployment with loss of income, as observed in previous outbreaks (5,6). Rajkumar (7) reported increased anxiety, depression (experienced by 16-28% of the population), and self-reported stress (shared by 8% of the population) as the most common mental reactions during the COVID-19 pandemic.

Sexuality is a significant part of a couple's life, which may affect mental health (8). Due to the pandemic, self-isolation and social distance have negatively affected sexual life (9). However, there is still a lack of knowledge regarding the effect of pandemic and decreased income on female sexual life.

This study aimed to evaluate women's sexual behavior during the COVID-19 pandemic in our country.

Materials and Methods

This prospective, observational study was conducted in a tertiary referral hospital between June 27 and July 27, 2020. The approval for the study was obtained from the Ministry of Health (2020.05.25T22.02.17). Besides, ethical approval was obtained from the local ethics committee of our hospital (University of Health Sciences Turkey, İstanbul Bağcilar Training and Research Hospital Clinical Research

Ethics Committee, approval number: 2020.07.2.08.109). The study was conducted in accordance with the Declaration of Helsinki and its later amendments. All participants were included after obtaining informed consent.

A questionnaire consisting of 13 questions regarding the sexual life during the COVID-19 pandemic was applied to 169 women aged 18-45 years, who were admitted to the gynecology outpatient clinic due to routine controls. The questionnaires from the recent studies of Jacob et al. (10) from the UK and Li et al. (11) from China on the same topic were taken as examples. Women with regular and active sexual life were included. The questions about patients' basic characteristics, such as age, education, marital status, monthly income, systemic disease, drug addiction, alcohol consumption, and smoking, were asked. The questions evaluating sexual behavior such as the relationship with partner, sexual desire, frequency of intercourse, sexual satisfaction, and fertility desire were then recorded. The exclusion criteria were as follows; not having a regular partner, COVID-19 positivity, history of cancer, endometriosis, pelvic pain, incontinence, menopause, vaginal atrophy, severe systemic disease (diabetes, hypertension, and coronary artery disease), mental disorders, and pregnancy or lactation. Twenty-nine patients who were not compatible with the inclusion criteria were excluded. One hundred forty women were included in the study. Women were divided into two groups as those above and below the monthly hunger limit. At the time of the study, the monthly hunger limit per person in our country was 2.500 Turkish Liras (TL). The participants in the increased income group were excluded since there were only three women in this group, which was insufficient for statistical comparisons.

The sample size was calculated via the G power program, version 3.1. The effect size to determine the sexual activity of the study group was determined as 0.26. The analysis with a $1-\beta$ of 0,8 and alpha error of 0.05 revealed that 117 patients were required.

Statistical Analysis

Statistical analyses were performed with the Statistical Package for the Social Sciences (SPSS) 20 program (IBM Corp, Armonk, NY, USA). In addition to the descriptive statistical methods (mean, standard deviation), the Pearson's chi-square test and Fisher's Exact test were used to compare categorical variables. A p-value of <0.05 was considered statistically significant.

Results

The mean age of the participants was 32.9 ± 7.74 years (18-45). The mean age of their spouse was 36.73 ± 8.54 years. 93.6% of the participants were married, and 52.1% were primary school graduates. 49.3% of the participants had a monthly income below 2.500 TL. Regarding the monthly income, 84 (60%) patients had a decrease, 53 (37.9%) of them remained stable, and only 3 (2.1%) of them had an increase during the pandemic. The rate of living with their parents was 18.6%. Demographic features and the economic status of all participants were shown in Table 1.

16.4% of participants had a worsened relationship with their partner during the COVID-19 pandemic. Sexual desire of the participants was decreased by 32.9% and remained the same in 58.6% of the participants. The frequency of sexual intercourse was the same in 55.7% of women, decreased in 33.6% of women, and increased in 10.7% of women. During the COVID-19 pandemic, sexual satisfaction decreased in 27.9% of participants. 25.7% of respondents reported a reduced fertility desire (Table 2).

The study groups were divided into the stable and decreased income groups after excluding three patients with an increased income due to a low number of participants. No statistically significant difference was found between the groups regarding the relationship with a partner, frequency of sexual intercourse, and fertility desire ($p > 0.05$). However, a statistically significant difference was found between the decrease in sexual desire rates. A higher rate of 40.5% was observed in the decreased group than in the stable income group with 22.7% ($p = 0.03$).

A statistically significant difference was found in terms of sexual satisfaction rates between the income level groups. The rate of increase in sexual satisfaction in those with a decreased income was found to be higher than in those with a stable income (10.7% vs. 0, respectively, $p = 0.04$) (Table 3).

Discussion

In this study, relationship with partner, sexual desire, frequency of intercourse, sexual satisfaction, and fertility desire remained stable in most participants during the COVID-19 pandemic. However, considering the monthly income and evaluation of sexual life, sexual desire was less in the decreased income group. On the contrary, there was an increase in sexual satisfaction in the decreased income group. This may be associated with increased time spent together, less work stress, and less social or family obligations.

Table 1. Demographic characteristics of women (n=140)

Characteristics	Mean \pm SD	
Age (years)	32.90 \pm 7.74	
Partner age (years)	36.73 \pm 8.54	
	n	%
Marital status		
Single/divorced/widowed	9	6.4
Married	131	93.6
Education level		
Illiterate	2	1.4
Primary school graduate	73	52.1
High school graduate	36	25.7
Postgraduate	29	20.7
Per capita monthly income		
<2.500 TL/month	69	49.3
>2.500 TL/month	71	50.7
Monthly income		
Increased	3	2.1
Reduced	84	60
Remained the same	53	37.9
Living with parents		
Yes	26	18.6
No	114	81.4
Smoking		
Yes	35	25
No		75
Drug and alcohol consumption		
Yes	2	1.43
No	138	98.57

TL: Turkish Lira, SD: Standard deviation

The social restrictions, decreased monthly income, fear of unemployment, loneliness, and fear of death increased stress, anxiety, and depression during the pandemic. Hamilton and Meston (12) have reported that prolonged exposure to the aforementioned stress reduces sexual desire.

Several publications have been reported on the effect of the COVID-19 pandemic on sexual functions. Karsiyakali et al. (13) designed a study comprising 1.356 men and women living in large and small cities. They concluded a decreased rate of sexual desire and intercourse frequency but an increased rate of masturbation during the COVID-19 pandemic. The decreased rates were more prominent in couples living in large cities than those living in small cities. These results are supposed to be associated with the population density and the high number of COVID-19 cases in large cities (13). Ibarra et al. (14) also emphasized

Table 2. Distributions related to sexual behaviors

	n	%
Relationship with partner		
Good	26	18.6
Poor	23	16.4
General	91	65
Sexual desire		
Increased	12	8.6
Reduced	46	32.9
Remained the same	82	58.6
Frequency of sexual intercourse		
Increased	15	10.7
Reduced	47	33.6
Remained the same	78	55.7
Sexual satisfaction		
Increased	10	7.1
Reduced	39	27.9
Remained the same	91	65
Fertility desire		
Increased	26	18.6
Reduced	36	25.7
Remained the same	78	55.7

that COVID-19 negatively affected sexual behaviors. A study conducted with 868 sexually active people in the United Kingdom reported worsening sexual desire, especially in older and single people (10). In another study conducted in China, 37% of the participants showed a decrease in the frequency of sexual intercourse during the pandemic. In this study, age, relationship status with the partner, and sexual desire were found to be closely related to the frequency of intercourse (11).

In a study evaluating sexual functions before and after quarantine during the COVID-19 pandemic, in which 764 women from Poland participated, a statistically significant decrease was observed in the female sexual function index (FSFI) scores. The reduction was higher in unemployed women (15). A study from Italy also found that total FSFI scores of women of reproductive age decreased during the COVID-19 pandemic. Besides, being unable to work at home, having postgraduates, and having multiparity are reported as independent risk factors for a low FSFI score (3).

On the contrary, Hall et al. (16) reported that women's sexual activity increased significantly during intense stress. In another study, Yuksel and Ozgor (17) reported that menstrual irregularities and desire for sexual intercourse

Table 3. Comparison of the sexual behavior of the participants whose income level did not change with those whose income level decreased during the COVID-19 pandemic

	Decreased income (n=84)		Stable income (n=53)		Test statistics	p
	n	%	n	%		
Relationship with partner						
Average	52	61.9	37	69.8	$\chi^2=2.809$	0.246
Good	19	22.6	6	11.3		
Poor	13	15.5	10	18.9		
Sexual desire						
Increased	9	10.7	3	5.7		
Reduced	34	40.5	12	22.7	$\chi^2=6.978$	0.031
Remained the same	41	48.8	38	71.7		
Frequency of sexual intercourse						
Increased	11	13.1	3	5.7	$\chi^2=5.191$	0.075
Reduced	32	38.1	14	26.4		
Remained the same	41	48.8	36	67.9		
Sexual satisfaction						
Increased	9	10.7	0	0	$\chi^2=6.283$	0.043
Reduced	24	28.6	15	28.3		
Remained the same	51	60.7	38	71.7		
Fertility desire						
Increased	13	15.5	11	20.8	$\chi^2=0.954$	0.621
Reduced	24	28.6	12	22.6		
Remained the same	47	56	30	56.6		

COVID-19: Coronavirus disease-2019

increased during the pandemic and total FSFI scores were higher. Micelli et al. (18) found that the frequency of sexual intercourse did not decrease in the vast majority of Italians (66.4%) before and during the pandemic (18). Our results were also compatible with this study. However, more than a third of them decided to postpone having children. These results could be associated with economic instability and fear of the impact of COVID-19 infection on pregnancy outcomes.

Although the relationship between unemployment and sexual activity has not been clarified, unemployment is associated with an increased risk of depression (19). The unemployment and low income caused by the pandemic also support our results.

Controversial results have been reported regarding the effect of the COVID-19 pandemic on sexual functions (15-

19). Although our results are consistent with the decrease in sexual desire in the decreased income group, we may postulate that increased sexual satisfaction could be related to spending more time with the couples at home. The different study results could be explained by the different reactions of the countries to stress management.

Study Limitations

The present study has some limitations. The number of participants in the study group was relatively small. The strength of our study could be attributed to face-to-face interview approach that could lead to more reliable answers. Although the FSFI questionnaire seems to be an objective method to evaluate female sexual dysfunction, the entire parameters of FSFI were not compatible with our study design.

Conclusion

Sexuality is a complex phenomenon affected by a variety of factors. Acute stress caused by the COVID-19 pandemic has negatively affected the quality of life and sexuality. In our study, the decreased income level was associated with decreased sexual desire in women. The truth is that there are still many unknowns regarding both COVID-19 and sexuality. Therefore, larger prospective studies are needed.

Ethics

Ethics Committee Approval: Ethical approval was obtained from the local ethics committee of our hospital (University of Health Sciences Turkey, İstanbul Bağcılar Training and Research Hospital Clinical Research Ethics Committee, approval number: 2020.07.2.08.109).

Informed Consent: All participants were included after obtaining informed consent.

Peer-review: Externally and internally peer-reviewed.

Authorship Contributions

Concept: E.E.K., Design: E.E.K., Data Collection or Processing: Ö.Y.A., Ö.K.A., Analysis or Interpretation: T.K., H.G., Drafting Manuscript: E.E.K., Ö.K.A., Ö.Y.A., Critical Revision of Manuscript: T.K., H.G., Final Approval and Accountability: E.E.K., Ö.K.A., Ö.Y.A., T.K., H.G.

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