

## Relationship between women's physical activity levels with sexual functions and satisfaction during Covid 19 pandemic

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### ABSTRACT

**Objective:** It aims to examine the relationship between the physical activity levels of women and their sexual functions and satisfaction during Covid19 pandemic process. **Methods:** The sample of the study, which was planned in a descriptive and correlational design, consisted of 233 women of reproductive age living in the province of Istanbul. The data were collected using the Personal Information Form, The International Physical Activity Questionnaire (IPAQ), The Female Sexual Function Index (FSFI), and the Sexual Satisfactory Scale for Women (SSS-W). **Results:** According to IPAQ, 60.9% of women were in the minimally active category. The mean total scores of FSFI and SSS-W were 22.20±5.81 and 83.71±13.99 respectively. No significant correlation was found between the physical activity levels of women and the total score of FSFI and its sub-dimensions. A very weak, positive correlation was found between mean scores of satisfaction and agreeableness, which sub-dimensions of SSS-W, and level of physical activity, a weak, negative relationship was found between the relationship and the total mean score of the anxiety sub-dimension. **Conclusion:** Many women were found to be minimally physically active, low in sexual function, and moderate in sexual satisfaction during the pandemic process.

**Keywords:** Covid 19, pandemic, physical activity, sexual health

### *Covid 19 pandemisinde kadınların fiziksel aktivite düzeyleri ile cinsel işlevleri ve memnuniyetleri arasındaki ilişkinin incelenmesi*

### ÖZET

**Amaç:** Bu çalışma ile Covid 19 pandemi sürecinde kadınların fiziksel aktivite düzeyleri ile cinsel işlevleri ve memnuniyetleri arasındaki ilişkinin incelenmesi amaçlanmaktadır. **Yöntem:** Tanımlayıcı ve ilişki arayıcı desende planlanan araştırmanın örneklemini İstanbul ilinde yaşayan üreme çağındaki 233 kadın oluşturmuştur. Veriler, Kişisel Bilgi Formu, Uluslararası Fiziksel Aktivite Anketi (UFAA), Kadın Cinsel İşlev Ölçeği (KCIÖ), Kadın Cinsel Memnuniyet Ölçeği (KCMÖ) kullanılarak toplanmıştır. **Bulgular:** UFAA'ya göre kadınların %60.9'unun minimal aktif kategoride olduğu tespit edildi. KCIÖ ve KCMÖ toplam puan ortalamaları sırasıyla 22.20±5.81 ve 83.71±13.99 idi. Kadınların fiziksel aktivite düzeyleri ile KCIÖ toplam puanı ve alt boyutları arasında istatistiksel olarak anlamlı bir ilişki bulunmadı. KCMÖ'nin alt boyutlarından memnuniyet ve uyumluluk puan ortalamaları ile fiziksel aktivite düzeyi arasında çok zayıf, pozitif bir ilişki bulunurken, ilişki ve kaygı toplam puan ortalamaları arasında zayıf, negatif bir ilişki bulunmuştur. **Sonuç:** Pandemi sürecinde kadınların çoğunluğunun fiziksel olarak minimal düzeyde aktif, cinsel işlevlerinde düşük ve cinsel doyumda orta düzeyde olduğu tespit edilmiştir.

**Anahtar kelimeler:** Covid 19, pandemi, fiziksel aktivite, seksüel sağlık

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## INTRODUCTION

The Covid 19 infection, which emerged in Wuhan, China in late December 2019 and caused a worldwide pandemic for a short time, required measures such as social isolation and quarantine to reduce the risk of transmission. These protections have led to an increase in the time spent at home and a decrease in physical activity by getting away from people's daily lives.<sup>1</sup> The reduction of physical activity, being constantly interested in the news of the pandemic and the fear of contagion of Covid 19 infection facilitated the emotional state of the people to be affected.<sup>2</sup>

Besides the benefits of physical activity for many endocrine diseases, it also affects mental health positively. Although there are few scientific studies on the effect of regular exercise on women's sexual life, it has been stated that regular exercise, directly and indirectly affects sexual life and that daily exercise frequency provides physical fitness. Hence, people feel better and their self-confidence increases. It has been reported that as a reflection of these, an increase in the perception of sexual desire can be seen and this situation can provide a better sexual performance. Physical inactivity and a sedentary life can cause sexual dysfunctions by negatively affecting mental health as well as physical disorders.<sup>3,4</sup> When the studies evaluating physical activity and sexual health are examined in the literature, studies that evaluate the relationship between the male sample group and erectile dysfunction are frequently encountered.<sup>5,6</sup> Although sexuality and physical activity have an important place in women's quality of life and health, studies evaluating the relationship between these aspects are few in the literature. In a study conducted by Cabral et al. with women, it was reported that sexual dysfunction was present in 67% of the sample and was associated with a sedentary lifestyle. It was found that approximately 4 out of 5 women (78.9%) who do not do physical activity experience sexual dysfunction compared to regular physical exercise (57.6%).<sup>7</sup>

It has been reported that during the pandemic, people moved away from each other due to social distance and as a result, their sexual desires decreased. It has been reported that decreased sexual desire also affects the frequency of sexual activity. A study reported that 60.1% of participants were not sexually active during the isolation/social distance period.<sup>8</sup> In another study conducted in China, it was stated that the sexual desires of the participants decreased. Additionally, men and women reported decreased sexual satisfaction. Participants with a history of risky sexual experiences reported that the pandemic process reduced their risky sexual behavior.<sup>9</sup>

The isolation period brought on the pandemic has disrupted people's routines. Benefits of this situation can be mentioned, such as people spending more time

with their spouses/partners and regular sexual functions. However, spending more time at home due to quarantine measures has led to a decrease in physical activity and emotional problems such as stress, anxiety, and anger. It has been reported that as a result of emotional problems, physical activity may decrease and a sedentary life prevails.<sup>10, 11</sup> Therefore, this study was planned by taking into account the effects of the Covid 19 epidemic and aimed to examine the relationship between the physical activity levels and sexual functions and satisfaction of women of reproductive age during the Covid 19 epidemic. It is thought that the findings will contribute to the literature and will guide the importance of evaluating women's sexual lives in negative situations such as pandemics.

## METHODS

### Study Design

In the study, which was planned in a descriptive and correlational design, the population of the study was women of reproductive age (18-49 years old) living in Istanbul. The sample of the research is between July and December 2021, sexually active women who met the sample criteria were formed. To research, volunteer to participate in the research, over 18 years old, literate, married, living with a partner, having an active sexual life, not having any sexual function problems in herself or her spouse/partner, not receiving any psychiatric treatment and belonging to the neuromuscular system that will not prevent her from moving. Women who did not have a chronic problem were included. The exclusion criteria from the research are women who were pregnant, postpartum or in the menopausal period. In the sample analysis of the study, the results of the study by Gölbaşı et al. in which they examined the prevalence of sexual dysfunction, were considered. As a result of the study, the rate of sexual dysfunction in women was reported to be 78%.<sup>12</sup> Using the sample calculation formula of an unknown population and based on the results of Gölbaşı et al.'s study, the mean incidence of sexual dysfunction was estimated as 78%. A sample of 263 women was required, with a 5% margin of error at the 95% confidence interval. Questionnaires were tried to be delivered to women through four different social networks most used by researchers. 30 women were withdrawn from the study because they found the questions special. The study was completed with 233 women (Participation rate: 88.5%).

### Measures

“Personal Information Form” (27 items), “The International Physical Activity Questionnaire (IPAQ) (Short form)” (7 questions), “Female Sexual Function Index (FSFI)” (19 questions), and “Sexual Satisfactory Scale for Women (SSS-W)” (30 questions) prepared in line with the literature and data were collected.

*Personal Information Form:* It was arranged by the researchers by conducting a literature search and taking expert opinion. There are questions including socio-demographic characteristics, general health history, and anthropometric measurements of the participants.<sup>3-9</sup>

*The International Physical Activity Questionnaire (IPAQ) (Short form):* The scale aims to evaluate the level of physical activity and consists of questions covering the last week. Craig et al. It was created by Sağlık and adapted into Turkish by Sağlık.<sup>13,14</sup> Calculating the total score, the total score is calculated by the duration (minutes) and frequency (days) of walking, moderate activity, and vigorous activity. The seating score is calculated separately. The survey includes questions about physical activity performed for at least 10 minutes in the last week. By multiplying the minute, day, and MET value, a score of “MET-minute/week” is obtained. People's physical activity levels <600 MET-min/week are considered as physically inactive, 600-3000 MET-min/week as low physical activity level, and > 3000 MET-min/week as adequate physical activity level (very active).

*The Female Sexual Function Index (FSFI):* The scale evaluates sexual function in the last 4 weeks. The scale was developed by Rosen et al. It has six sub-dimensions: desire, arousal, lubrication, orgasm, general satisfaction, and pain. A higher score suggests better sexual function (min: 2, max: 36). If the score obtained from the scale is 30 or above, sexual function

is considered good, between 23-29 is considered moderate, and a score below 23 is considered poor sexual function. A scale score "equal to or below 26.55" indicates sexual dysfunction.<sup>15</sup> The form of the scale adapted to Turkish by Aygin and Aslan was used in the study.<sup>16</sup> The cronbach's alpha value of the scale was found to be 0.82 and above.<sup>16,17</sup> Cronbach's alpha for this study was found to be 0.93.

*Sexual Satisfactory Scale for Women (SSS-W):* It is a scale consisting of 30 questions, developed by Meston and Trampnell in 2005<sup>18</sup>, Turkish validity and reliability were made by Abalı and Aslan in 2018.<sup>19</sup> The scale consists of five sub-dimensions contentment, communication, compatibility, concern (relational), and concern (personal), and is a five-point Likert type. Each sub-dimension is scored from 6 to 30 points. Total score is 30-150 and there is no cut-off point. The higher the score obtained, the better it is interpreted as sexual satisfaction. The cronbach alpha coefficient of the scale was specified as 0.96.<sup>19</sup> The cronbach alpha value of the scale for this study was 0.94.

### Study Procedures

Data was collected between 06.2021-12.2021. The study questionnaire was delivered to the women via various social media platforms, e-mail or messaging applications via <https://www.google.com/forms/about/>

**Table 1. Comparison of some descriptive characteristics of women and total mean scores of FSFI and SSS-W (n=233)**

Descriptive Features	FSFI Total Score Average	$X^2/U(z) p$	SSS-W Total Score Average	$X^2/U(z) p$
<b>Having children</b>				
Yes (n=169)	21.30±6.28	3780 <sup>a</sup>	80.02±14.39	5045 <sup>a</sup>
No (n=64)	24.55±3.34	.000**	82.52±12.81	.429
<b>Getting infected with a Covid 19 infection</b>				
Yes (n=65)	22.68±5.38	4988 <sup>a</sup>	83.58±13.26	4524.5 <sup>a</sup>
No (n=168)	22.01±5.94	.307	79.59±14.14	.043*
<b>Covid 19 infection contagion anxiety affecting sexual life</b>				
Yes (n=34)	22.12±5.06	0.529 <sup>b</sup>	76.36±16.30	3.616 <sup>b</sup>
No (n=130)	22.11±6.06	.768	81.86±13.86	.164
Indecisive (n=69)	22.40±5.74		80.67±12.75	
<b>Defining relationship with a spouse during the pandemic process</b>				
Bad (n=12)	19.31±6.23	27.298 <sup>b</sup>	64.83±11.32	47.762 <sup>b</sup>
Middle (n=111)	20.69±5.79	.000**	75.45±11.29	.000**
Good (n=89)	23.65±5.52		86.08±12.32	
Very good (n=21)	25.66±3.45		94.76±13.80	
<b>Smoking</b>				
Yes (n=41)	21.93±5.60	2930.5 <sup>a</sup>	79.39±13.79	2777 <sup>a</sup>
No (n=192)	23.46±6.64	.010*	86.85±13.40	.003*
<b>Regular exercise before the pandemic process</b>				
Yes (n=29)	23.92±6.64	2170 <sup>a</sup>	92.12±12.57	1416 <sup>a</sup>
No (n=204)	21.95±5.66	.020*	79.08±13.44	.000**
<b>Regular sports during pandemic process</b>				
Yes (n=22)	25.40±4.30	1407 <sup>a</sup>	90.75±15.87	1369 <sup>a</sup>
No (n=211)	21.86±5.85	.002*	79.66±13.39	.002*

<sup>a</sup>Mann Whitney U(z); <sup>b</sup>Kruskall Wallis ( $X^2$ ), p\* < .05, p\*\* < .001

### Data Analysis

SPSS 25 program was used for analysis. Percentage, number, mean and standard deviation from descriptive statistical analyzes were used. Data distributions were checked with the Kolmogorov Smirnov test. Kruskal Wallis and Mann Whitney U tests were used for intergroup comparisons. In the examination of the relationship between physical activity level and FSFI and SSS-W sub-dimension scores; Pearson Correlation Analysis was performed. The significance of the results was evaluated at the  $p < 0.05$  level and the confidence interval were evaluated at the 95% confidence level.

### RESULTS

The mean age of the women was  $32.82 \pm 8.67$ , the mean age of the spouses was  $35.91 \pm 9.40$ , the mean duration of marriage was  $83.63 \pm 81.47$  months, and the mean BMI was  $26.58 \pm 5.34$ . The activity levels of the women were found to be 38.2% inactive, 60.9% minimally active, and 0.9% very active.

It was determined that the FSFI total scale mean score of the women who participated in the study who did not have children, who defined their relationship with their spouse as "very good" during the pandemic period, who did not smoke, who did regular sports before and during the pandemic period, was significantly higher. It was found that the mean score of the total scale of SSS-W was found to be significantly higher among the women participating in the study who had covid infection, described their relationship with their spouse as "very good" during the pandemic period, did not smoke, and did regular sports before and during the pandemic period (Table 1.).

The findings of women regarding the changes experienced during the pandemic process are given in Table 2. The vast majority of women (58.4%) stated that the time spent in front of the television increased the amount of fat around the waist (48.5%) during the pandemic process. Again, the vast majority of women (57.9%) reported that they did not want to do anything because of the lack of motivation they experienced during the pandemic process (Table 2).

**Table 2. Regarding changes during the pandemic process**

	Yes		No		Unchanged	
	n	%	n	%	n	%
1. Increased time spent in front of the TV	136	58.4	46	19.7	51	21.9
2. During the pandemic process, the fat around my waist has increased.	113	48.5	88	37.8	32	13.7
3. Increased time spent on the computer for work due to working from home	49	21	98	42.1	86	36.9
4. I have never left the house due to social isolation	56	24.0	137	58.8	40	17.2
5. I didn't want to do anything because of the lack of motivation I experienced during the pandemic process.	135	57.9	59	25.3	39	16.7
6. During the pandemic process, I tended to do more sports than usual	31	13.3	144	61.8	58	24.9
7. I turned to my sex life more during the pandemic period.	42	18	112	48.1	79	33.9
8. I have no interest in sex because of the fear of contagion of covid 19 infection.	31	13.3	114	48.9	88	37.8

**Table 3. Correlation of women's physical activity levels and total mean scores of FSFI and SSS-W**

	FSFI Total	$X^2 / p$	SSS-W Total	$X^2 / p$
Inactive (n=89)	22.31±6.38	1.077 <sup>a</sup> / .584	82.87±14.05	4.471 <sup>a</sup> / .107
Minimally Active (n=142)	22.14±5.48		79.53±13.86	
Highly Active (n=2)	20.95±2.61		68.25±3.88	

<sup>a</sup> Kruskal Wallis ( $X^2$ )

The mean FSFI total score of the women was  $22.20 \pm 5.81$ , and the total mean score of SSS-W was  $80.71 \pm 13.99$ . There was no significant difference

between the physical activity levels of the women and the total scores of FSFI ( $p: .584$ ) and SSS-W ( $p: .107$ ) ( $p > 0.05$ ) (Table 3).

There was no significant relationship between the physical activity levels of women and the FSFI total score and sub-dimensions ( $p > 0.05$ ). SSS-W contentment ( $r = .141$   $p = 0.032$ ), compatibility ( $r = .161$   $p = 0.014$ ) sub-dimension total score averages and physical activity level were positively very weakly significant, concern (relational) ( $r = -.204$   $p = 0.002$ )

sub-dimension total score average and physical activity level were found to have a weak and negative relationship. In addition, a very weak positive correlation was found between the total mean score of SSS-W ( $r = .133$   $p = 0.042$ ) and the level of physical activity (Table 4).

**Table 4. Correlation findings between the activity level and the FSFI and SSS-W total score and sub-dimension total score**

		Desire	Arousal	Lubrication	Orgasm	General Satisfaction	Pain	FSFI Total
Activity Level	r	-.051	-.039	.020	-.031	-.011	.019	-.018
	p	.435	.550	.765	.633	.871	.771	.781
		Contentment	Communication	Compatibility	Concern (relational)	Concern (personal)	Concern Total	SSS-W Total
Activity Level	r	-.141*	-.053	-.161*	-.204**	.031	-.092	-.133*
	p	.032	.417	.014	.002	.640	.160	.042

\*Very weak correlation, \*\*Weak correlation

## DISCUSSION

The study was conducted to investigate the relationship between physical activity levels and sexual functions and satisfaction of women of reproductive age during the Covid 19 epidemic. According to WHO BMI classification; individuals with a BMI of 25.0-29.9 are in the "Pre-obesity" category.<sup>21</sup> The mean BMI of women was found to be  $26.58 \pm 5.34$  and they were in the "pre-obesity" category. It is thought that the reason for this is that the majority of the women in the study were housewives (58.4%) and did not exercise regularly before the pandemic (87.6%) and during the pandemic (90.6%). In addition, the increase in the time spent by the majority of women in front of the television (58.4%) and the increase in the fat around the waist (48.5%) during the pandemic process support the high BMI. In the research conducted by Tural (2020) during the pandemic period, the BMI of women was determined as  $23.35 \pm 3.56$  in the "normal weight" class. It can be said that the difference with Tural's study is that most of the sample group in which the study was conducted consisted of students and that this study was conducted in the period when the pandemic first started.<sup>2</sup>

The pandemic due to Covid 19 infection has changed people's lives. With the restriction of freedom, daily routines and social life have been greatly affected by this situation. As a result of this situation, sexual health, which is affected by biological, psychological, and social factors, has emerged as another type of health affected by this process.<sup>8</sup> Yüksel and Özgör (2020), in a study they conducted during the pandemic, concluded that the pandemic process negatively affects female sexual function.<sup>22</sup> Çankaya and Ateş (2021), who examined the effect of women's relationship satisfaction and couple harmony on sexual distress

during the pandemic process, determined that women were not satisfied with their sexual lives as a result of their study.<sup>23</sup> As a result of the research, it can be said that female sexual functions are poor, and sexual satisfaction is close to medium level. This result is similar to the results of other studies on sexuality in the Covid 19 pandemic.<sup>22, 23</sup>

Our research reveals that the vast majority of women (60.9%) have minimal activity levels. Yildirim et al. (2019) reported that the majority of female health workers (78.7%) were minimally active.<sup>24</sup> Kitiş and Gümüş (2015) found the physical activity level of the majority of women (59.6%) to be minimal in another study they conducted with a sample of women aged 20 and over.<sup>25</sup> It can be said that the results of our research are in parallel with the studies that were carried out before the period of the pandemic. The fact that the majority of the sample group (58.4%) was housewives, the majority of women (58.4%) increased the time they spent in front of television during the pandemic process, and the majority (57.9%) did not want to do anything due to the lack of motivation experienced during the pandemic process can be considered as the reasons for this situation.

There are studies in the literature stating that the number of births affects female sexual function.<sup>26, 27</sup> In the study, the sexual function score of the women who did not have children was found to be significantly higher than the women who had children. This situation makes us think that the presence of children at home during the pandemic period, especially during social isolation times, may adversely affect sexual function.

It was determined that the sexual function and sexual satisfaction scores of women who had very good relationships with their spouses during the pandemic

period were significantly higher. Similarly, Türkseven, Söylemez, and Dursun concluded in their study that couples with a harmonious perception of marriage have higher sexual satisfaction.<sup>28</sup>

In the literature, it has been stated that smoking can cause sexual dysfunction.<sup>29</sup> Our study found significantly lower mean FSFI and SSS-W total scores in smoking women.

Studies are showing that regular exercise contributes positively to sexual life. It has been reported that regular exercise contributes positively to sexual life by increasing blood flow in the sympathetic nervous system and genital area.<sup>30</sup> Penhollow and Young, in a study they conducted with university students, found that women who exercise regularly 2-3 days a week have an increase in their sexual desire and functions.<sup>31</sup> As a result of our research, the sexual function and sexual satisfaction of women who did regular sports before and during the pandemic were found to be significantly higher than those who did not do regular sports. Our results show parallelism with the literature.

## CONCLUSION

It was found that the majority of the women were minimally physically active during the pandemic, their sexual functions were low, and their sexual satisfaction was close to the medium level. In addition, it was determined that physical activity significantly affects the components of sexual satisfaction, which are satisfaction, compatibility, and concern for the relationship. Considering that the level of physical activity will positively affect the sexual health as well as the general health of the individuals, the necessary support should be provided for women to gain healthy lifestyle behaviors to be physically active. During the pandemic, where physical activity is severely restricted, health professionals should evaluate the physical activity levels, sexual health, and satisfaction of couples with a holistic approach, determine their problems and needs, and take a professional role in increasing the sexual functions of couples.

## Limitations

Since it is not possible to reach individuals due to the Covid 19 pandemic, the convenience sampling method was preferred as the sampling method. The convenience sampling method is a non-probability sampling method that can be used in both qualitative and quantitative research, in which researchers collect data from participants who are easy to reach. It has a disadvantage in terms of the generalizability of the results obtained.<sup>20</sup> Due to the limitations of conducting the study face-to-face, the study was conducted using an online survey questionnaire during the Covid 19 pandemic.

## Ethical considerations

Ethical approval was received for the study from the University of Health Sciences, Scientific Research Ethics Committee (No: 40270; date: 15.06.2021). Women were informed that their personal information would be kept confidential in the description section of the Google forms. In addition, the study adhered to the "principle of confidentiality". The study was carried out the guidelines of the Declaration of Helsinki.

## Authors' contributions

*Study idea/design:* CI, YAK

*Data collecting:* CI, AB

*Data analysis and interpretation:* CI

*Literature review:* CI, YAK, AB

*Writing of the article:* CI, YAK

*Critical review:* CI, YAK

*Final approval and responsibility:* CI, YAK

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