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Comparison of Women's Sexual Performance with and Without COVID-19 Infection: A Cross-Sectional Study

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Abstract

Background: COVID-19 is an infection that affects an individual's physiological and psychological aspects. There are few studies on the impact of COVID-19 on women's sexual function in Iran.

Objectives: We aimed to compare the different aspects of sexual function in women with and without COVID-19 infection in Qaen city, South Khorasan, Iran.

Methods: This cross-sectional study was conducted on 558 healthy and SARS-CoV-2-infected women of reproductive age in Qaen city. The sample size was estimated based on the Anna Fuchs study, with a 95% confidence level and a 90% test power. After random sampling, data were collected using demographic questionnaires, the Female Sexual Function Index (FSFI), and the Depression, Anxiety, and Stress Scale (DASS). Analysis was performed using SPSS 24 and the independent *t*-test, Mann-Whitney U test, Chi-square test, Kruskal-Wallis test, and multiple linear regression.

Results: The average age of the women was 35 years, and their weight was 64.7 kg. Most women (32.6%) had a bachelor's degree. The mean total sexual function score was 25.2. There was no significant difference in the total sexual function score between the affected and non-affected groups ($P = 0.359$). A significant difference was observed in the satisfaction dimension of sexual function between the two groups ($P = 0.010$). Multiple linear regression showed that depression ($P < 0.001$) and age ($P = 0.001$) were related to sexual function, but COVID-19 was not associated with it ($P = 0.090$). Adjusting for variables affecting dimensions of sexual function showed that COVID-19 was associated with the sexual desire dimension ($P = 0.009$) and was not related to other dimensions of sexual function. Women in this study experienced sexual dysfunction. There was no association between COVID-19 infection and sexual function, except for desire.

Conclusions: The findings imply that the effects of pandemic infectious diseases should be considered more in sexual medicine. Also, depression is associated with all aspects of sexual function, and counseling is recommended to reduce depression, stress, and anxiety during pandemics. Because all information was collected using self-reported questionnaires, there is the possibility of information bias. Consequently, the findings should be cautiously generalized to other populations of women.

Keywords: COVID-19, COVID-19 Pandemic, Sexual Performance, Female Sexual Dysfunction, Female Sexual Function Index (FSFI)

1. Background

The causative agent of COVID-19, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), is a betacoronavirus in the Coronaviridae family that emerged at the end of 2019 in Wuhan, China. It rapidly spread worldwide, causing the COVID-19 pandemic (1). Recent data from the World Health Organization (WHO) indicate approximately 774 million cases and 7 million deaths (2). Severe acute respiratory syndrome coronavirus 2 infects the upper and lower respiratory system, pneumocytes, hyperplastic cells around

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bronchioles, and mucosal epithelia of the trachea. The cell tropism of this virus is not limited to the respiratory tract. Molecular analysis reveals that the spike protein is expressed in mucosal epithelia of the small intestine and cells of the kidney, brain, and heart. However, the molecular mechanism of SARS-CoV-2 infection in these organs is uncertain (3). Clinical signs and symptoms of COVID-19 include fever, cough, malaise, myalgia, arthralgia, gastrointestinal symptoms, and dyspnea (4). In more severe cases, it can lead to pulmonary fibrosis, secondary infections, myocarditis, pulmonary embolism, and death (5). This disease affects the female reproductive tract and sexual hormones, including the menstrual cycle and reproductive health (6). These impacts are not restricted to physiological aspects. During the COVID-19 pandemic, changes occurred in social and individual behaviors, particularly in health care habits and policies. One of these changes was sexual behaviors (7). COVID-19 might adversely affect female sexual function due to the fear of contagion, stressful conditions, and changes in daily life (8). Sexual dysfunction is defined as sexual desire disorder, sexual arousal disorder, orgasmic disorder, and sexual pain, which are caused by multiple anatomical, physiological, medical, and psychological factors and can cause severe personal discomfort and affect the quality of life and relationships. Sexual dysfunction includes problems during the sexual response cycle that can prevent experiencing the satisfaction of sexual activity (9). The pandemic has affected different forms of sexual dysfunction, especially in women. Studies conducted during the pandemic have shown varying effects on sexual function. Arafat et al. found no change in sexual activity before and during the lockdown (10). Karagoz et al. reported that couples who spent more time together during the pandemic had better sexual function (11), while others reported decreased sexual activity and impaired sexual function (12-16). There is insufficient information about the prevalence and nature of this disorder in women, because women's sexual dysfunction criteria are more difficult to determine than those in men (17). Furthermore, there are few studies about the effect of SARS-CoV-2 infection on the sexual performance of women in Iran.

2. Objectives

Given that most studies have attributed sexual dysfunction caused by COVID-19 to psychological factors such as an increased likelihood of interpersonal conflicts, stress, lack of privacy, and fear of contracting the disease, this study was conducted to compare sexual function in women infected and uninfected with SARS-CoV-2 in Iran in 2022, controlling for confounding factors such as stress, anxiety, and depression.

3. Methods

3.1. Study Design

This cross-sectional study was performed in Qaen city, located in the eastern region of Iran, in 2022.

3.2. Participants

A total of 558 sexually active married women (226 patients and 332 healthy) were selected from eligible women from health centers (Integrated Health System). Sampling was done randomly using a random number table. Inclusion criteria included healthy (polymerase chain reaction [PCR] negative) and SARS-CoV-2-infected women of reproductive age during the last three months, having sexual intercourse at least once a month, having at least an elementary school education, being willing to participate, and completing the written informed consent form. A positive PCR test was the criterion for the individual's illness. Pregnancy, having a history of mental illness, including depression or personality disorders, use of medications affecting sexual desire, history of chronic diseases, and severe psychological problems in the last 6 months, consumption of tobacco, drugs, and alcohol, as well as dissatisfaction with and incomplete completion of questionnaires, were considered as exclusion criteria of the study. The sample size was estimated at 500 based on a study by Anna Fuchs with a significance level of 0.05.

3.3. Scales

Two questionnaires were utilized. The Female Sexual Function Index (FSFI) questionnaire is used to assess women's sexual performance. This questionnaire contains 19 items that evaluate the sexual performance of women in six subscales, including sexual desire, sexual arousal, lubrication, orgasm, sexual satisfaction, and pain. The maximum score of every subscale is 6, and the total score is 36. Higher scores indicate better sexual performance (18). The cut-off point for the scale is 28, and for the subscale of sexual desire is 3.3, psychological arousal 3.4, lubrication 3.4, orgasm 3.4, satisfaction 3.8, and for sexual pain is 3.8. A score above the cut-off point is considered good sexual performance (19). The validity and reliability of the FSFI questionnaire in Iran were confirmed by a Cronbach's alpha above 0.7 (20).

The other questionnaire, the Depression Anxiety Stress Scale (DASS), includes three self-reporting

subscales evaluating negative emotional feelings in depression, anxiety, and stress, and has 20 questions. Each question is scored from 0 (does not apply to me at all) to 3 (extremely applies to me). Since the DASS-21 is a shortened form of the original scale (42 questions), the final score for each domain should be doubled (21). The Cronbach's alpha value for depression, anxiety, and stress subscales in Iran has been reported as 0.93, 0.79, and 0.91, respectively, which indicates acceptable validity and reliability (22).

3.4. Data Collection

According to the inclusion and exclusion criteria, 558 of 565 participants were included, representing a 98.8% rate. Sociodemographic characteristics include weight, age, gravidity, number of births, abortions, live births, type of delivery, educational level, occupation, economic status, and place of residence. The spouse's age, education, and occupation were also taken into consideration.

3.5. Data Analysis

Data were analyzed using SPSS statistical software version 24. The characteristics of the subjects were described using descriptive statistics, indicators of central tendency, dispersion (mean and standard deviation), and frequency distribution. The homogeneity of variables was examined using an independent *t*-test for parametric variables and Chi-square, Fisher's exact, and Mann-Whitney U test for nonparametric variables. The relationship between sociodemographic variables and stress, anxiety, and depression with sexual performance was determined by the Kruskal-Wallis test. Finally, multiple linear regression modeling was done to adjust for confounding variables affecting sexual function and its dimensions using the enter method.

3.6. Ethical Consideration

Birjand University of Medical Sciences approved this study with the code of ethics (IR.BUMS.REC.1401.215). Participants completed written informed consent. They were free to participate in the study, and their information was kept confidential.

4. Results

The average age of the women and their husbands was 35 and 40 years, respectively, and the average weight of the women was 64.7 kg. Most women (32.6%) had a bachelor's degree, and spouses (61.4%) had diplomas. Demographic characteristics are explained in Table 1.

The mean total sexual function score was 25.2. In unadjusted bivariate analysis, there was no significant difference in the total sexual function score between the two groups (P = 0.359). Table 2 reports the mean scores for each of the dimensions of sexual desire, arousal, lubrication, orgasm, satisfaction, and pain. In unadjusted bivariate analysis, the satisfaction dimension of sexual function was significantly different between groups (P = 0.010). The two groups were not homogeneous in terms of depression, anxiety, stress, occupation, and educational level of the research subjects and their spouses (Table 1).

A multiple linear regression was used to adjust for the confounding variables. The results of the regression to adjust for variables affecting women's sexual function showed that depression (P < 0.001) and age (P = 0.001) variables affected sexual function, but COVID-19 infection did not affect sexual function (P = 0.090). The variables included in the model are reported in Table 3. This model explains 33.6% of sexual performance.

Adjusting for confounding variables like depression and age in a regression model, COVID-19 infection emerged as the strongest independent predictor for lower sexual desire. The variables of COVID-19 infection (P = 0.009), depression (P < 0.001), anxiety (P = 0.037), and age (P = 0.042) affected sexual desire (Table 4). Depression (P < 0.001), anxiety (P = 0.008), and age (P = 0.002) variables had an impact on sexual arousal. Depression (P < 0.001) and age (P = 0.002) variables affected vaginal lubrication. Variables of depression (P < 0.001), type of delivery (P = 0.023), age (P = 0.001), and weight (P = 0.024) affected orgasm. Depression (P < 0.001), age (P = 0.002), place of residence (P = 0.004), and economic status (P = 0.004) affected sexual satisfaction. Variables of depression (P < 0.001) and type of delivery (P = 0.044) affected pain.

5. Discussion

COVID-19 infection was an independent risk factor for low sexual desire after controlling for psychological distress, but it was not associated with overall sexual dysfunction. Sexual dysfunction was present in both groups.

In this study, the average sexual function score of women was less than 28, indicating sexual dysfunction in both healthy and COVID-19-infected women. Various studies conducted during the COVID-19 pandemic have attributed the sexual dysfunction found in women to increased stress, anxiety, and distress caused by the pandemic (13, 16, 23, 24). Although in the present study, stress, anxiety, and depression were significantly higher in women with COVID-19 than in healthy individuals,

Table 1. Socio-Demographic Characteristics of Participants [a]

Characteristics	COVID-19 Infected	Healthy	P-Value
Age	36.1 ± 3.41	34.8 ± 3.98	0.120
Spouse's age	41.4 ± 12.61	39.1 ± 2.53	0.081
Weight	64.1 ± 6.48	64.1 ± 9.54	0.980
Gravidity	2.4 ± 1.85	2.3 ± 1.70	0.204
Parity	2.1 ± 0.79	2.1 ± 0.52	0.480
Living child	2.1 ± 0.73	1.1 ± 9.49	0.709
Abortion	0.0 ± 4.74	0.0 ± 3.64	0.605
Depression	11.9 ± 9.10	9.8 ± 0.98	0.000
Anxiety	9.8 ± 9.02	7.8 ± 9.09	0.001
Stress	14.9 ± 3.07	11.9 ± 7.08	0.001
Place of residence			0.132
City	136 (43.5)	177 (56.5)	
Village	91(37.1)	154 (62.9)	
Type of delivery			0.720
NVD	111(39.9)	167 (60.1)	
CS	65 (39.6)	99 (60.4)	
Occupation			0.004
Housewife	118 (34.4)	225 (65.6)	
Teacher	12 (63.2)	7 (36.8)	
Employee	60 (49.6)	61 (50.4)	
Freelance	14 (42.4)	19 (57.6)	
Retired employee	0 (0)	1 (100)	
Other	22 (53.7)	19 (46.3)	
Spouse's occupation			< 0.001
Unemployed	15 (71.4)	6 (28.6)	
Teacher	12 (57.1)	9 (42.9)	
Employee	75 (53.6)	65 (46.4)	
Freelance	96 (32.7)	198 (67.3)	
Retired employee	3 (37.5)	5 (62.5)	
Other	25 (33.8)	49 (66.2)	
Education			< 0.001
Illiterate	14 (8.2.4)	3 (17.6)	
Primary school	30 (33)	61 (67)	
Secondary school	37 (40.7)	54 (59.3)	
Diploma	48 (30.6)	109 (69.4)	
Bachelor's Degree	90 (49.5)	92 (50.5)	
Master's Degree/ PhD	8 (40)	12 (60.0)	
Spouse's education			0.018
Illiterate	6 (54.5)	5 (45.5)	
Primary school	31 (41.9)	43 (58.1)	
Secondary school	34 (31.8)	73 (68.2)	
Diploma	59 (34.3)	113 (65.7)	
Bachelor's Degree	69 (48.9)	72 (51.1)	
Master's Degree/ PhD	27 (50.9)	26 (49.1)	

[a] Values are presented as Mean ± SD and No. (%).

the sexual function status did not differ between the two groups. After adjusting for confounding variables by regression, depression and age were related to sexual function, and the depression variable was stronger than age. Studies have shown that during pandemics, fear of the disease and its complications, as well as the

Table 2. Comparison of the Average Sexual Function Score and Its Dimensions in Two Groups of Women with and Without COVID-19 [a]

Characteristics	COVID-19 Infected	Healthy	P-Value
Sexual desire	3.6 ± 1.07	3.6 ± 1.04	0.199
Sexual arousal	3.9 ± 1.20	3.9 ± 1.18	0.809
Vaginal lubrication	4.4 ± 1.11	4.4 ± 1.04	0.736
Orgasm	4.3 ± 1.13	4.5 ± 1.12	0.219
Satisfaction	4.3 ± 1.17	4.6 ± 1.12	0.010
Pain	4.2 ± 1.23	4.3 ± 1.31	0.229
Sexual function	25.2 ± 5.30	24.9 ± 5.39	0.359

[a] Values are presented as Mean ± SD.

Table 3. Factors Associated with Sexual Function in Women

Variables	B	Std.Error	Beta	*t*	Sig.	95% CI for B
Constant	299.013	21.435	-	13.950	0.000	256.91 to 341.12
COVID-19 infected	-6.775	3.990	-0.063	-1.698	0.090	-14.62 to 1.06
Education	0.548	2.547	0.013	0.215	0.830	-4.46 to 5.55
Spouse's education	3.272	2.329	0.077	1.405	0.161	-1.30 to 7.85
Occupation	0.080	1.425	0.002	0.056	0.955	-2.72 to 2.88
Spouse's occupation	1.230	1.810	0.026	0.679	0.497	-2.33 to 4.79
Depression	-2.504	0.387	-0.434	-6.477	0.000	-3.26 to -1.74
Anxiety	0.362	0.396	0.056	0.914	0.361	-0.42 to 1.14
Stress	0.185	0.391	0.032	0.473	0.637	-0.58 to 0.95
Type of delivery	4.778	3.142	0.063	1.521	0.129	-1.39 to 10.95
Age	-1.326	0.398	-0.253	-3.329	0.001	-2.11 to -0.54
Weight	0.186	0.168	0.043	1.111	0.267	-0.14 to 0.52
Spouse's age	0.036	0.336	0.008	0.107	0.915	-0.62 to 0.70
Gravidity	-1.626	5.164	-0.054	-0.315	0.753	-11.77 to 8.52
Parity	0.748	6.352	0.023	0.118	0.906	-11.73 to 13.23
Live child	-3.069	5.390	-0.092	-0.569	0.569	-13.66 to 7.52
Abortion	-1.315	5.180	-0.017	-0.254	0.800	-11.49 to 8.86
Place of residence	-5.334	4.558	-0.050	-1.170	0.242	-14.29 to 3.62
Economic situation	3.449	3.128	0.043	1.102	0.271	-2.70 to 9.60

restrictions imposed, can cause stress, anxiety, and depression. Still, it is not clear whether a person's psychological state affects their sexual function or whether sexual dysfunction causes psychological disorders (13, 14, 24, 25).

The present study showed a negative association between age and sexual function in women, which is consistent with the results of the Oliveira study and in contrast to the findings of Narkkul (26, 27). Bhambhvani, Effati-Daryani, and Karsiyakali did not report an association between age and sexual function (13, 16, 25). Differences in the target population and cultural background are likely the reason for this discrepancy.

In the present study, sexual desire did not differ between the healthy and infected groups. But after adjusting for confounding variables, COVID-19 infection was the strongest predictor of low sexual desire in women. These results are consistent with the findings of the study by Masoudi et al., Narkkul, et al., and Qaderi et al.; and inconsistent with the study by Yuksel and Ozgor, Cito et al., and Arafat (10, 24, 26-30). The target population of Yuksel's study was women undergoing treatment for urinary incontinence whose sexual desire increased after treatment, which coincided with the COVID-19 epidemic. Since urinary incontinence affects sexual function, improvement in urinary incontinence is likely to improve sexual desire in these individuals. Some external stressors, such as minority stress or

Table 4. Factors Associated with Sexual Desire in Women

Variables	B	Std.Error	Beta	*t*	Sig	95% CI for B
Constant	47.182	4.577		10.309	0.000	38.19 to 56.17
COVID-19 infected	-2.231	0.852	-0.104	-2.618	0.009	-3.91 to -0.56
Education	-0.389	0.544	-0.046	-0.714	0.475	-1.46 to 0.68
Spouse's education	0.781	0.497	0.092	1.571	0.117	-0.20 to1.76
Occupation	-0.340	0.304	-0.049	-1.118	0.264	-0.94 to 0.26
Spouse's occupation	-0.126	0.387	-0.013	-0.325	0.745	-0.89 to 0.63
Depression	-0.361	0.083	-0.316	-4.376	0.000	-0.52 to -0.20
Anxiety	0.177	0.085	0.137	2.091	0.037	0.01 to 0.34
Stress	-0.071	0.084	-0.062	-0.852	0.395	-0.24 to 0.09
Type of delivery	0.317	0.671	0.021	0.472	0.637	-1.00 to 1.64
Age	-0.173	0.085	-0.167	-2.041	0.042	-0.34 to -0.01
Weight	0.005	0.036	0.005	0.126	0.900	-0.07 to 0.08
Spouse's age	0.009	0.072	0.010	0.123	0.902	-0.13 to 0.15
Gravidity	-1.162	1.103	-0.196	-1.054	0.292	-3.33 to 1.00
Parity	-0.478	1.356	-0.074	-0.353	0.724	-3.14 to 2.19
Live child	0.297	1.151	0.045	0.258	0.797	-1.96 to 2.56
Abortion	0.695	1.106	0.045	0.628	0.530	-1.48 to 2.87
Place of residence	0.260	0.973	0.012	0.267	0.789	-1.65 to 2.17
Economic situation	1.246	0.668	0.078	1.865	0.063	-0.07 to 2.56

gender expectations, can negatively affect sexual desire, and others, such as an improved cultural context for sexual expression, can positively influence sexual desire, depending on the context.

While in the period immediately following the start of the pandemic, people's emotional reactions to some stressors, such as financial worries, loneliness, and increased worry about contracting COVID-19, were associated with stronger sexual desire, the continuation of the pandemic led to greater loneliness and the experience of greater stress, and consequently lower sexual desire (31). On the other hand, participants in Cito and Arafat's study did not report any change in sexual desire. Given that sexual desire is an individual and multifaceted issue and is influenced by the bio-psycho-social context, the psychological state of the individual, as well as the variable nature of the pandemic in each country in terms of infection rates and interventions at the policy level, are possible reasons for the conflicting results (32).

The results of the present study did not show a relationship between other aspects of sexual function and COVID-19 infection. Some studies have shown a decrease in sexual arousal during the COVID-19 epidemic (14, 15, 23, 24). Sexual arousal varies among individuals in response to stressful situations. People who want to control their sex life have difficulty arousing, but individuals who are usually easily aroused have increased arousal (32).

Fuchs and Karagoz showed a decrease in vaginal lubrication during the COVID-19 pandemic (11, 15). Fuchs also reported a reduction in orgasm (15). Several studies have shown a decrease in sexual satisfaction during the pandemic (11, 33, 34). Anxiety, stress, and depression affect all of the above dimensions. The reason may be that the present study was conducted at the end of the COVID-19 period, when people's psychological adaptation to the pandemic had improved to some extent, and people's mental preoccupations had decreased. In addition, sexual satisfaction is one of the human physiological needs that is more complex than other needs and is influenced by demographic, pathophysiological, psychological, and sociocultural factors (35).

5.1. Limitations

This study has a strength due to the adjustment for the intervening variables of stress, anxiety, and depression. However, several limitations should also be noted. Firstly, due to the cross-sectional design of this study, it is not possible to assess the causal relationship between psychological status and sexual function. Secondly, collecting information through self-report questionnaires creates the possibility of information bias. Thirdly, the study was conducted in a single city

with a specific cultural context. Consequently, the findings should be cautiously generalized to other populations of women. In addition, the study was conducted at the end of the pandemic, which can be both a limitation and a strength.

5.2. Conclusions

Women in this study experienced sexual dysfunction. There was no association between COVID-19 infection and sexual function, except for desire. Depression is associated with all aspects of sexual function, and counseling is recommended to reduce depression, stress, and anxiety during pandemics.

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Footnotes

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Data Availability: The data presented in this study are available on request from the corresponding author.

Ethical Approval: The study was conducted in accordance with the Declaration of Helsinki and was approved by the ethics committee of Birjand University of Medical Sciences (approval number: IR.BUMS.REC.1401.215). Birjand University of Medical Sciences is greatly appreciated for supporting and assisting researchers with data collection.

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References

1. Markov PV, Ghafari M, Beer M, Lythgoe K, Simmonds P, Stilianakis NI, et al. The evolution of SARS-CoV-2. *Nat Rev Microbiol*. 2023;**21**(6):361-79. [PubMed ID: 37020110]. https://doi.org/10.1038/s41579-023-00878-2.
2. Hamlin RE, Blish CA. Challenges and opportunities in long COVID research. *Immunity*. 2024;**57**(6):1195-214. [PubMed ID: 38865966]. [PubMed Central ID: PMC11210969]. https://doi.org/10.1016/j.immuni.2024.05.010.
3. Liu J, Li Y, Liu Q, Yao Q, Wang X, Zhang H, et al. SARS-CoV-2 cell tropism and multiorgan infection. *Cell Discov*. 2021;**7**(1):17. [PubMed ID: 33758165]. [PubMed Central ID: PMC7987126]. https://doi.org/10.1038/s41421-021-00249-2.
4. Gandhi RT, Lynch JB, Del Rio C. Mild or Moderate Covid-19. *N Engl J Med*. 2020;**383**(18):1757-66. [PubMed ID: 32329974]. https://doi.org/10.1056/NEJMcp2009249.
5. Berlin DA, Gulick RM, Martinez FJ. Severe Covid-19. *N Engl J Med*. 2020;**383**(25):2451-60. [PubMed ID: 32412710]. https://doi.org/10.1056/NEJMcp2009575.
6. Maher M, Owens L. SARS-CoV-2 infection and female reproductive health: A narrative review. *Best Pract Res Clin Endocrinol Metab*. 2023;**37**(4):101760. [PubMed ID: 36990807]. [PubMed Central ID: PMC9977073]. https://doi.org/10.1016/j.beem.2023.101760.
7. Chen C. Placental Abnormalities and Preeclampsia in Trisomy 13 Pregnancies. *Taiwanese Journal of Obstetrics and Gynecology*. 2009;**48**(1):3-8. https://doi.org/10.1016/s1028-4559(09)60028-0.
8. Zalpour A, Zare E, Nasiri M. Effect of COVID-19 Pandemic on Female Sexual Function: A Systematic Review and Meta-analysis. *Iranian Journal of Psychiatry and Behavioral Sciences*. 2023;**17**(3). https://doi.org/10.5812/ijpbs-135905.
9. Chen CH, Lin YC, Chiu LH, Chu YH, Ruan FF, Liu WM, et al. Female sexual dysfunction: definition, classification, and debates. *Taiwan J Obstet Gynecol*. 2013;**52**(1):3-7. [PubMed ID: 23548211]. https://doi.org/10.1016/j.tjog.2013.01.002.
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;**289**:113050. [PubMed ID: 32387790]. [PubMed Central ID: PMC7190529]. https://doi.org/10.1016/j.psychres.2020.113050.
11. Karagoz MA, Gul A, Borg C, Erihan IB, Uslu M, Ezer M, et al. Influence of COVID-19 pandemic on sexuality: a cross-sectional study among couples in Turkey. *Int J Impot Res*. 2020;**33**(8):815-23. [PubMed ID: 33328620]. [PubMed Central ID: PMC7739794]. https://doi.org/10.1038/s41443-020-00378-4.
12. Gungor Ugurlucan F, Yasa C, Ates Tikiz M, Evruke I, Isik C, Dural O, et al. Effect of the COVID-19 pandemic and social distancing measures on the sexual functions of women treated for vaginismus (genitopelvic pain/penetration disorder). *Int Urogynecol J*. 2021;**32**(5):1265-71. [PubMed ID: 33606053]. [PubMed Central ID: PMC7893375]. https://doi.org/10.1007/s00192-020-04667-w.
13. Effati-Daryani F, Jahanfar S, Mohammadi A, Zarei S, Mirghafourvand M. The relationship between sexual function and mental health in Iranian pregnant women during the COVID-19 pandemic. *BMC Pregnancy Childbirth*. 2021;**21**(1):327. [PubMed ID: 33902479]. [PubMed Central ID: PMC8072090]. https://doi.org/10.1186/s12884-021-03812-7.
14. Nawaz MU, Rivera E, Vinayak S, Elahi K, Kumar M, Chand M, et al. Comparison of Sexual Function Before and After COVID-19 Infection in Female Patients. *Cureus*. 2021. https://doi.org/10.7759/cureus.18156.

15. Fuchs A, Matonog 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**(19). [PubMed ID: 33007804]. [PubMed Central ID: PMC7579227]. https://doi.org/10.3390/ijerph17197152.

16. Bhambhvani HP, Chen T, Kasman AM, Wilson-King G, Enemchukwu E, Eisenberg ML. Female Sexual Function During the COVID-19 Pandemic in the United States. *Sex Med*. 2021;**9**(4):100355. [PubMed ID: 34174585]. [PubMed Central ID: PMC8360920]. https://doi.org/10.1016/j.esxm.2021.100355.

17. Rosen RC. Female sexual dysfunction: industry creation or under-recognized problem? *BJU Int*. 2003;**92**(1):3-4. [PubMed ID: 12823372]. https://doi.org/10.1046/j.1464-410x.2003.04294.x.

18. Rosen R, Brown C, Heiman J, Leiblum S, Meston C, Shabsigh R, 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**(2):191-208. [PubMed ID: 10782451]. https://doi.org/10.1080/009262300278597.

19. Heydari M, Faghihzadeh S. [The female sexual function index (FSFI): validation of the Iranian version]. *Payesh (Health Monitor)*. 2008;**7**(3):0. FA.

20. Fakhri A, Pakpour AH, Burri A, Morshedi H, Zeidi IM. The Female Sexual Function Index: translation and validation of an Iranian version. *J Sex Med*. 2012;**9**(2):514-23. [PubMed ID: 22146084]. https://doi.org/10.1111/j.1743-6109.2011.02553.x.

21. Antony MM, Bieling PJ, Cox BJ, Enns MW, Swinson RP. Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. *Psychological Assessment*. 1998;**10**(2):176-81. https://doi.org/10.1037/1040-3590.10.2.176.

22. Kakemam E, Navvabi E, Albelbeisi AH, Saeedikia F, Rouhi A, Majidi S. Psychometric properties of the Persian version of Depression Anxiety Stress Scale-21 Items (DASS-21) in a sample of health professionals: a cross-sectional study. *BMC Health Serv Res*. 2022;**22**(1):111. [PubMed ID: 35078477]. [PubMed Central ID: PMC8789546]. https://doi.org/10.1186/s12913-022-07514-4.

23. Hessami K, Sayegh N, Abdolmaleki AS, Bakht S, Qaderi S, Darabi M, et al. Women's sexual function before and during COVID-19 pandemic: A systematic review and meta-analysis. *J Obstet Gynaecol Res*. 2022;**48**(9):2285-95. [PubMed ID: 35844087]. [PubMed Central ID: PMC9349639]. https://doi.org/10.1111/jog.15337.

24. Masoudi M, Maasoumi R, Bragazzi NL. Effects of the COVID-19 pandemic on sexual functioning and activity: a systematic review and meta-analysis. *BMC Public Health*. 2022;**22**(1):189. [PubMed ID: 35086497]. [PubMed Central ID: PMC8794736]. https://doi.org/10.1186/s12889-021-12390-4.

25. Karsiyakali N, Sahin Y, Ates HA, Okucu E, Karabay E. Evaluation of the Sexual Functioning of Individuals Living in Turkey During the COVID-19 Pandemic: An Internet-Based Nationwide Survey Study. *Sex Med*. 2021;**9**(1):100279. [PubMed ID: 33291042]. [PubMed Central ID: PMC7718780]. https://doi.org/10.1016/j.esxm.2020.10.007.

26. de Oliveira L, Carvalho J. Women's Sexual Health During the Pandemic of COVID-19: Declines in Sexual Function and Sexual Pleasure. *Curr Sex Health Rep*. 2021;**13**(3):76-88. [PubMed ID: 34248426]. [PubMed Central ID: PMC8254666]. https://doi.org/10.1007/s11930-021-00309-4.

27. Narkkul U, Jiet Ng J, Saraluck A. Impact of the COVID-19 Pandemic on the Female Sexual Function Index and Female Behavioral Changes: A Cross-Sectional Survey Study in Thailand. *Int J Environ Res Public Health*. 2022;**19**(23). [PubMed ID: 36497640]. [PubMed Central ID: PMC9740164]. https://doi.org/10.3390/ijerph192315565.

28. Qaderi K, Yazdkhasti M, Zangeneh S, Behbahani BM, Kalhor M, Shamsabadi A, et al. Changes in sexual activities, function, and satisfaction during the COVID-19 pandemic era: a systematic review and meta-analysis. *Sex Med*. 2023;**11**(2):qfad005. [PubMed ID: 36970584]. [PubMed Central ID: PMC10037164]. https://doi.org/10.1093/sexmed/qfad005.

29. Yuksel B, Ozgor F. Effect of the COVID-19 pandemic on female sexual behavior. *Int J Gynaecol Obstet*. 2020;**150**(1):98-102. [PubMed ID: 32392400]. [PubMed Central ID: PMC9087619]. https://doi.org/10.1002/ijgo.13193.

30. Cito G, Micelli E, Cocci A, Polloni G, Russo GI, Coccia ME, et al. The Impact of the COVID-19 Quarantine on Sexual Life in Italy. *Urology*. 2021;**147**:37-42. [PubMed ID: 32888982]. [PubMed Central ID: PMC7462585]. https://doi.org/10.1016/j.urology.2020.06.101.

31. Balzarini RN, Muise A, Zoppolat G, Gesselman AN, Lehmiller JJ, Garcia JR, et al. Sexual Desire in the Time of COVID-19: How COVID-Related Stressors Are Associated with Sexual Desire in Romantic Relationships. *Arch Sex Behav*. 2022;**51**(8):3823-38. [PubMed ID: 36100726]. [PubMed Central ID: PMC9469826]. https://doi.org/10.1007/s10508-022-02365-w.

32. Pennanen-Iire C, Prereira-Lourenco M, Padoa A, Ribeirinho A, Samico A, Gressler M, et al. Sexual Health Implications of COVID-19 Pandemic. *Sex Med Rev*. 2021;**9**(1):3-14. [PubMed ID: 33309005]. [PubMed Central ID: PMC7643626]. https://doi.org/10.1016/j.sxmr.2020.10.004.

33. Li G, Tang D, Song B, Wang C, Qunshan S, Xu C, 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**(8). e20961. [PubMed ID: 32716895]. [PubMed Central ID: PMC7419154]. https://doi.org/10.2196/20961.

34. Kaya Y, Kaya C, Tahta T, Kartal T, Tokgöz VY. Examination of the effect of COVID-19 on sexual dysfunction in women. *International Journal of Clinical Practice*. 2020;**75**(3). https://doi.org/10.1111/ijcp.13923.

35. Shahhosseini Z, Gardeshi ZH, Pourasghar M, Salehi F. A review of affecting factors on sexual satisfaction in women. *Mater Sociomed*. 2014;**26**(6):378-81. [PubMed ID: 25685081]. [PubMed Central ID: PMC4314168]. https://doi.org/10.5455/msm.2014.26.378-381.