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Original Article

The effect of the COVID 19 pandemic on the quality of sexual life in cases with high-risk HPV

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Abstract

Objective: Although there are studies investigating the impact of high-risk human papillomavirus (HPV) on sexual life, studies on HPV, hospital anxiety scale (HAS) and quality of sexual life associated with the COVID 19 pandemic are limited. The aim of this study was to investigate the impact of the COVID 19 pandemic on quality of sexual life in women with high-risk cervical HPV.

Methods: Of the 136 patients included in this study, 68 had high-risk cervical HPV and were included in group 1 and 68 did not have HPV and were included in group 2. Sociodemographic data of the groups were recorded. The sexual quality of life scale (SQOL), COVID 19 fear scale and HAS scores were administered face-to-face to each patient in both groups.

Results: The median ages of group 1 and group 2 were 38 (25-45) and 37 (24-45) years, respectively (p=0.053). Although demographic data were similar, the number of sexual partners and smoking habits were significantly different between the groups (respectively, p=0.001, and p=0.002). Mean scores for the COVID 19 fear, SQOL, high anxiety and high depression scales were similar between groups (p>0.05). Correlation analysis of SQOL, HAS scale scores and the COVID 19 fear scale were similar (p>0.05).

Conclusion: No negative consequences of the COVID 19 pandemic were detected for the quality of sexual life of patients with high-risk HPV. It would be beneficial to provide psychological support for high levels of anxiety and depression during the COVID 19 pandemic.

Keywords: Anxiety, COVID 19, depression, human papillomavirus, sexual behavior.

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INTRODUCTION

A new coronavirus type (SARS-CoV-2) was defined as the cause of pneumonia cases at the end of 2019. After it caused an epidemic throughout China and spread rapidly around the world, it was announced as the cause of a global pandemic by WHO in March 2020 (1). The COVID 19 virus is transmitted with contact from droplets and contaminated surfaces through the hands, nasal mucosa, mouth or eyes. It causes significant mortality and morbidity around the world and also had significant impact socially and economically on all nations. For all these reasons, strict restrictions were implemented all around the world against COVID 19, including nation wide restrictions and border closures. COVID 19 positive cases were isolated from asymptomatic individuals in the vast majority of nations (2). Because of this precaution, when the virus was identified in one spouse, decreased frequency of sexual activity and close contact such as kissing and touching were observed (3). Cabello et al. suggested avoiding kissing and oral sex (4). Washing hands properly was recommended to prevent viral transmission during sexual intercourse and avoidance of sexual intercourse with a partner with suspected and/or confirmed COVID 19 diagnosis was suggested until necessary precautions were taken. In a study by Brooks et al., depression, irritability, fear and guilt were the most common emotional symptoms detected among people during quarantine (5). The WHO defines mental health as a state of complete physical, social and mental well-being, and not merely the absence of disease or infirmity. Mental health is an extremely crucial subject to be considered during pandemics (6). Sexual quality of life describes the relationship between sexuality and quality of life (7). Sexual health encompasses broad concepts, not only the absence of disease, dysfunction or disability, but also the state of being physically, emotionally, mentally and socially healthy related to sexuality (8).

The most common sexually transmitted disease is human papillomavirus (HPV) infection and the risk of encountering HPV at least once in a woman's lifetime is approximately 50% (9). According to the degree of association with cervical cancer, HPV can be split into low-risk HPV and high-risk HPV. High-risk HPV positivity and persistent HPV infection were identified in the etiology of the vast majority of cervical cancers (10). It is calculated that only 5% of infected people will have symptoms. In addition, as the disease progresses, cervical preinvasive lesions or early-stage cancer may cause discharge, pain, and vaginal bleeding. Sexual dysfunction and anxiety were observed in precancerous HPV-infected patients with genital lesions (11).

In studies, different results were obtained, with studies showing that COVID 19 did not affect sexual life (12,13), had negative effects, (3,14,15) and also had positive effects (13,16). While there are studies investigating the effect of high-risk HPV on sexual life, studies about HPV, hospital anxiety scale (HAS) and sexual quality of life associated with the COVID 19 pandemic are limited. Therefore, in this present research, the effect of the COVID 19 pandemic on the sexual quality of life in patients with high-risk HPV were investigated.

MATERIALS AND METHODS

Ethics committee approval for this clinical trial was conducted from Selçuk University Faculty of Medicine on 03.03.2022 with decision numbered 2022/100. Participants consisted of patients who attended Selçuk University, Faculty of Medicine, Obstetrics and Gynecology Clinic and Gynecological Oncology Clinic. The present study was performed in accordance with the Declaration of Helsinki and voluntary consent forms were obtained from all participants. Power analysis was performed with Gpower 3.1.9.2 software and the sample size was calculated according to Cohen's terms d=0.5, α=0.05, power =80% as a total of 128 patients, divided equally between Group1 (women with high-risk HPV) and Group 2 (control group). Women with high-risk HPV were enrolled in the patient group, and healthy women were enrolled in the control group. High-risk HPV types were identified as types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58,59, 68, 73, and 82 (17). The subjects were asked questions about risk factors for HPV. Questionnaires were implemented by the researchers using the face-to-face interview technique. In the study, age, gravida, parity, duration of marriage, monthly income, number of partners and smoking were questioned. Patient educational status was recorded as primary, secondary, and high school or university graduate. Contraceptive method was questioned and the use of combined oral contraceptives (COC), condom and intrauterine device (IUD) were recorded as yes and other methods and those who did not use contraception were recorded as no. BMI was calculated for each patient as body kg/m2. Inclusion criteria for Group 1 were determined as being a women of reproductive age between the ages of 18-45, having regular

and active sexual life, and having high-risk HPV. Women under the age of 17 and over the age of 45, those with a history of hysterectomy, cancer, pelvic pain and incontinence, those with serious systemic disease (diabetes mellitus, hypertension, coronary heart disease), those who are pregnant or breastfeeding and mentally unsuitable women were not included in the study.

Study Scales

COVID 19 Fear Scale

The translation of the COVID 19 Fear Scale developed by Ahorsu et al. (18) into Turkish its reliability and validity were confirmed by Satıcı et al. (19). The applicable age range of the scale is wide and it can only be used on female patients. All items on the scale, consisting of 7 questions, are scored positively.

Sexual Quality of Life Scale – Female Form (SQOL-F)

The Turkish validity of SQOL-F scale developed by Symonds et al. (20) was performed by Turgut and Gölbaşı in 2010. The Cronbach Alpha value, which is the reliability coefficient of the scale, was calculatedas 0.83. Scores that can be obtained from the scale are between 18-108. A high score on the scale shows good quality of sexual life (21).

HAS scale

This is a self-assessment scale developed to measure the level of depression and anxiety and to determine the change and risk of depression and anxiety in the patients with physical illness and those applying to primary health care services. It was translated into Turkish and its validity and reliability wasguaranteed by studies. It includes depression (HAS-D) and anxiety (HAS-A) subscales. It contains 14 questions in total. According to the this study conducted in Turkey, the cut-off scores were determined as 7/8 for the depression subscale and 10/11 for the anxiety subscale (22).

Statistical analysis

SPSS version 21.0 (IBM SPSS Statistics, IBM Corporation, Armonk, NY, USA) was used for all statistical calculations. Some descriptive features such as mean and standard deviation were evaluated with the help of descriptive statistical tests. Parameters with normal distribution were compared with each other using the Independent T-Test and One Way ANOVA test, and the parameters without normal distribution were compared with each other using the Mann Whitney U test. Comparisons of categorical parameters were analyzed with the Pearson Chi-Square and Fisher's Exact Test. The correlations between the data were evaluated with the Pearson and Spearman correlation tests. P values < 0.05 were accepted as being statistically significant.

RESULTS

The mean ages in Group 1 and 2 were recorded as 38.2±5.1 and 36.4±6.0 years, respectively, and no statistical association was found (p=0.053, Table 1).

Also no significant difference was found between the groups for gravida, parity, BMI, duration of marriage, monthly income, employment status, educational status, and contraceptive method. The rate of having only one partner in Group 1 was 77.9%, while the rate of having more than one partner was 22.1%. The rate of having only one partner in Group 2 was 98.5%, while the rate of having more than one partner was 1.5% and a significant difference was recorded between the two groups (p=0.001). While presence of smoking was 35.3% in Group 1, it was 13.2% in Group 2, and a significant difference was also found between the two groups (p=0.002).

The COVID 19 fear scale scores were 21.4±4.6 and 21.7±4.1 between Groups 1 and 2, respectively. These scores were both evaluated as high scores and no significant difference was found between the two groups (p=0.695). SQOL-F scale scores were 68.0±21.0 and 69.0±17.3 between Groups 1 and 2, respectively, and these scores were both evaluated as high scores. No significant difference was found between the two groups (p=0.770). The anxiety scale and the depression scale scores for Group 1 and Group 2 were 18.1±2.0 and 17.0±2.0 and 17.9±1.8 and 16.8±2.3, respectively. All of the scores were evaluated as high scores and no statistical difference was found between the groups (p=0.505 and p=0.599, respectively, Table 2).

The effects on sexual life were evaluated with the fear of COVID 19 scale and HAS scale, and no significant association was detected in correlation analysis between the two groups (p>0.05, Table 3).

Table 1: Characteristics of the groups

		Group 1 (n=68)	(%)	Group 2 (n=68)	(%)	p
Age, years		38.2±5.1		36.4±6.0		0.053
Gravida		2.4±1.0		2.3±1.3		0.888
Parity		3.0±1.4		2.7±1.5		0.478
BMI (kg/m²)		27.0±4.9		26.3±4.4		0.415
Duration of marriage, months		187.4±85.0		171.1±92.7		0.286
Income, ₺		5845.3±3571.4		5646.3±1719.0		0.164
Employment status, n						0.424
	Yes	20	26.5	18	29.4	
	No	48	73.5	50	70.6	
Education level, n						0.376
	Primary school	27	39.7	27	39.7	
	Middle School	10	14.7	4	5.9	
	High school	20	29.4	24	35.3	
	University	11	16.2	13	19.1	
Contraception methods, n						0.868
	COC	4	5.9	4	5.9	
	Condom	19	27.9	17	25.0	
	IUD	10	14.7	15	22.1	
	Other	18	26.5	16	23.5	
	No	17	25.0	16	23.5	
Partner number, n						0.001 *
	1	53	77.9	67	98.5	
	>1	15	22.1	1	1.5	
Smoking, n						0.002 *
	Yes	24	35.3	9	13.2	
	No	44	64.7	59	86.8	

Abbreviations: BMI: Body mass index, COC: Combined oral contraceptive, IUD: Intrauterine device. *$p<0.05$ means statistically significant. Mann-Whitney U test and Independent T test $p<0.05$, Chi-Square test $p<0.05$

DISCUSSION

As a part of human life, sexual life was affected both by the COVID 19 pandemic, which affected all the world and poses a risk to life, and HPV infection, which is a sexually transmitted disease that causes cervical cancer. Therefore, in the present research, the aim was to investigate the outcomes of the COVID 19 pandemic on the sexual quality of life of cases with high-risk HPV. Different results were reported in the literature about the

outcomes of the COVID 19 pandemic on sexual life. There are studies showing that COVID 19 did not affect sexual life at all (12,13); at the same time, there are some studies showing that it had negative effects (3,14,23) and also a study showing that it had positive effects (13,16). All of these studies and contradictory results show that many factors play a role between the sexual quality of life and COVID 19 pandemic. But the COVID 19 pandemic caused many psychological effects such as restlessness and anxiety in people and etiology and risk factors for sexual dysfunctions include depression, anxiety disorder, and environmental or emotional stress (24). In addition, studies showed that sexual dysfunction is associated with demographic features such as age, pregnancy status, employment and education, as well as psychological effects such as stress and depression (24).

In our study, similar to other studies, fear of COVID 19, depression and anxiety symptoms were similar in all patients and all these factors were evaluated with scales adapted for use in Turkey. However, unlike other studies, no difference was detected between the groups according to age, education and employment status, contraception method, smoking and monthly income. In addition, a difference from other studies is that the number of patients

Table 2: Comparison of COVID 19 fear scale, SQOL and HAS scores for both groups

	Group 1 (n=68)	**Group 2** (n=68)	**P**
COVID 19 fear scale, score	21.4±4.6	21.7±4.1	0.695
Sexual life quality scale score	68.0±21.0	69.0±17.3	0.770
Anxiety scale, score	18.1±2.0	17.9±1.8	0.505
Depression scale, score	17.0±2.0	16.8±2.3	0.599

Abbreviations: SQOL: Sexual quality of life, HAS: Hospital anxiety scale. Mann-Whitney U test and Independent T test $p<0.05$

was low in our study and patients are evaluated in terms of sexual quality of life, not sexual dysfunction.

Kucukyıldız et al. (25) found that women's sexual dysfunction rates increased throughout the COVID 19 pandemic.

Table 3: Correlation analysis of sexual quality of life according to fear of COVID 19 and HAS scores

		COVID 19 fear score	**Anxiety score**	**Depression score**
Sexual quality of life score	**R**	0.027	-0.034	0.062
	P	0.752	0.692	0.472

Abbreviations: HAS: Hospital anxiety scale. Pearson and Spearmen correlation tests $p<0.05$

Contrary to this study, in a social media survey study consisting of 386 cases, Gökbulut et al. (13) found that the relationship between spouses and woman's sexual life was not affected negatively in the COVID 19 pandemic. They also determined that those who were negatively affected already had lower sexual quality of life and lower marital adjustment. In the this study, high sexual quality of life was identified among the cases throughout the COVID 19 period, similar to the study by Gokbulut et al. (13) but we did not detect a significant difference between the groups. Pregnant cases and health workers were not included in the groups in the this study, different to previous research.

Gokbulut et al. (13) found that those who were primary school graduates and whose income was equal or more than their expenses had higher rates of negative impact on their spousal relations and sexual life throughout the COVID 19 epidemic, and also those whose spouses were primary school graduates had higher rates of adverse effects on their spousal relationships. In the literature, in a study examining the outcomes of the COVID 19 pandemic on sexual and reproductive health in which the majority (52%) of couples were master degree and

higher graduates, 69% reported that their spousal relations were as good as usual (12). Turliuc et al. (26) reported that all participants with high socioeconomic status had lower marital satisfaction at the end of the four-month quarantine during the COVID 19 pandemic. These findings show that quarantine at home during the pandemic negatively affected the spousal and sexual relations of those with low education level and high income level (13). Contrary to these studies, in the present study, no significant difference was found for sexual quality of life between the two groups in terms of education level and monthly income amount. These differences may be due to the location of the studies, different study groups, and sexual life being affected by many factors. Gokbulut et al. (13) found that women's marital adjustment and sexual life did not change according to age, employment status and duration of marriage. Similar to this study, no significant association was found between the groups according to age and duration of marriage in our study.

Sexual dysfunction and depression are commonly observed in HPV-positive patients (27). Although one of the most prevalent causes of sexual dysfunction is depression, HPV infection can cause sexual dysfunction even in patients without depression. Heinonen et al. showed that anxiety and depression levels increase in HPV-positive women (28). In a study conducted with 100 women diagnosed with HPV infection supporting these findings, Moura et al. found a negative effect of HPV on sexual function (29). Unlike these studies, the study by Mercan et al. showed that HPV positivity was associated with a significant deterioration in sexual function and this deterioration was not dependent on anxiety or depression (30).

The risk of HPV transmission increases with the increased numbers of sexual partners and the initiation of sexual intercourse at an early age (31). Also there is a strong correlation between smoking and high-risk HPV positivity (32). Similarly, the presence of smoking and the number of sexual partners were statistically significant between the groups in our study. In accordance with the studies, no significant difference was found between the high-risk HPV positive cases in terms of sexual quality of life, anxiety, and depression in this study. Catarino et al. (33) reported that being single, younger, and a housewife increased the risk of contracting HPV. Mercan et al. (30) did not detect any significant association between the groups according to these findings in their study. In the present study, no significant difference was found according to age, education level, and employment status. Furthermore, a significant association was found in terms of smoking. These differences may be due to the differences between the number of cases, ethnic and family structures. The strengths of present study are that it was a prospective study comparing the outcomes of the COVID 19 pandemic on the quality of sexual life and risk factors in cases with and without high-risk HPV positivity.

Limitations:

Limitations of this present study are that it was conducted in a single tertiary center, cases had unknown history of COVID 19, and the study included a low number of cases.

CONCLUSION

No negative outcomes of the COVID 19 pandemic were identified for the sexual quality of life of patients with high-risk HPV. It would be beneficial to provide psychological support in terms of high levels of anxiety and depression during the COVID 19 pandemic.

Conflict of interest: The authors declare no conflict of interest.
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Ethical approval: The study was conducted in accordance with the conditions recommended by the Helsinki Declaration. It was approved by Selçuk University Clinical Research Ethics Committee with the decision number 2022/100 on March 03, 2022.
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