

COVID-19

# The Impact of Social Distancing Measures Due to COVID-19 Pandemic on Sexual Function and Relationship Quality of Couples in Greece



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## ABSTRACT

**Introduction:** Recent studies have reported that the quarantine imposed in several countries around the world due to Covid-19 affected the sexual function and relationship quality. On the March 23, 2020 the Greek government imposed a national quarantine to contain the spread of the pandemic. The impact of such conditions on sexual function and relationship quality of couples is unknown.

**Aim:** To investigate sexual function and relationship quality of couples during the quarantine.

**Methods:** An online anonymous survey was conducted one month post-impose of the quarantine, between the April 21 and the May 3, 2020. Adult respondents in a relationship completed a questionnaire including sociodemographic characteristics, structured inquiries regarding sexual activity and quality of relationship, anxiety level, and mood during the quarantine, as well as the IIEF and FSFI indices.

**Outcomes:** Sexual function was assessed using the Greek versions of the FSFI and IIEF for females and males respectively. Sexual activity using 5 statements regarding frequency of sexual thoughts, masturbation, and intercourse, quality of intercourse and general estimation of the level of sexual function. Participants graded their level of agreement. Relationship quality was assessed using 5 questions regarding communication, company, understanding, tension and general estimation of companionship. Participants graded their level of agreement. Two additional statements were used in order to evaluate mood and the level of anxiety.

**Results:** A sum of 299 adult heterosexual participants in a relationship participated. Little or no negative impact on sexual function was reported. Increased anxiety and deficient mood were reported only for those with no access to their partner. Being in a steady relationship and living with their partner, but only for couples without children, resulted in satisfaction by sexual activity and enhanced emotional security.

**Conclusion:** Sexual function and relationship quality appeared as not affected by the quarantine and by the measures of social distancing. **Sotiropoulou P, Ferenidou F, Owens D, et al. The Impact of Social Distancing Measures Due to COVID-19 Pandemic on Sexual Function and Relationship Quality of Couples in Greece. Sex Med 2021;9:100364.**

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**Key Words:** Covid-19; Sexual Function; Relationship Quality; IIEF; FSFI

Received November 5, 2020. Accepted March 20, 2021.

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<https://doi.org/10.1016/j.esxm.2021.100364>

Sex Med 2021;9:100364

## INTRODUCTION

The Covid-19 pandemic, caused by the SARS-CoV-2 is considered an unprecedented challenge for the global community. As of February 10, 2021, more than 107 million Covid-19 cases have been confirmed worldwide, with more than 2.3 million lives lost due to the virus.<sup>1</sup> The first case of Covid-19 in Greece was reported at the end of February 2020. On the March 23, 2020 quarantine was imposed by the Greek government in an

effort to contain the spread of COVID-19 in the community. During the quarantine, circulation and gatherings in public spaces were banned, in cases possible employees worked from home, schools were shut down, and external activities were allowed only after granted permission. Similar containment measures and quarantines were implemented by several European and other countries worldwide as urgent health-protection strategies. The quarantine in Greece was terminated on the May 4 of, resulting in a total of 42 of days of social distancing and self-isolation. In contrast to other European countries such as Spain or Italy, the spread of the pandemic was successfully contained possibly because the measures of social distancing were applied on a timely manner. As a result, the number of people infected as well as the death toll were much lower compared to other European countries.<sup>2</sup>

Sexual activity is related to both physical<sup>3–7</sup> and mental health,<sup>8–12</sup> while recent studies showed that Covid-19 negatively affected the mental health of subjects; preliminary evidence suggested that anxiety and depression, as well as self-reported stress are among the symptoms that demonstrated an upward trend since the outbreak of the virus.<sup>13</sup> Thereby, a scientific interest was raised with regards to the affect of the Covid-19 pandemic on the sexual health of populations. Studies conducted in Italy and the UK where the pandemic hit harder, revealed that sexual activity was reduced in both women and men. Schiavi et al. assessed the impact of the social distancing measures on the sexual function of reproductive-aged women in Italy; results reported a decrease in both mean sexual intercourse and FSFI scores.<sup>14</sup> Jacob et al. investigated levels of sexual activity with relation to the Covid-19 social distancing measures in 868 male and female participants; an overall decrease of sexual activity was reported, but being a woman, unmarried and belonging in older age groups were predictive factors of sexual inactivity.<sup>15</sup> Suchlike were the results for both men and women in China; Li et al. investigated the impact of Covid-19 related measures on the sexual health of young individuals and found decreased sexual desire and intercourse frequency, as well as deterioration of intimate relationships.<sup>16</sup> In Greece, online surveys regarding the impact of the Covid-19 pandemic on university students' mental health, showed an increase in anxiety and depression levels, along with suicidality.<sup>17,18</sup> Among the examined components was the sample's sexual function, and results reported a deterioration in sexual life of university students.<sup>18</sup>

In recent history, this type of imposed isolation and social distancing measures has not been previously experienced in such a large scale. Thereby, primary aim of this study was to identify whether the quarantine influenced the quality of sexual function and relationship of adult couples in Greece. Secondary aim was to clarify whether anxiety was increased due to the pandemic and subsequently affected sexual function and relationship quality.

## MATERIALS AND METHODS

### Participants

This was an online survey which consisted of a sample of 299 subjects. In order for a participation to be eligible, the individual

had to be over 18 years of age and in a steady relationship during the quarantine, regardless of cohabitation with their partner. Participants' sexual orientation did not constitute a reason of exclusion. The participants were asked to complete an online questionnaire on an online surveys' platform. Recruitment of subjects was achieved via various social media networks; the first distribution was conducted among the researchers' social and professional networks and they in turn further distributed the link of the survey on social media platforms. The duration of the study was 2 weeks (from the April 21 until the May 3, 2020, while implemented restrictions of the quarantine were still active.

### Outcome Measures

*Sociodemographic characteristics:* gender, age, family status (married/steady relationship and having children or not, educational level and occupational status before and during the quarantine, and exposure to information about Covid-19 were required in order to assess the correlation with the possible change in sexual function during the quarantine.

*International Index of Erectile Function (IIEF):* It is a 15-item self-report questionnaire, designed to assess erectile dysfunction. It evaluates five domains; erectile function, orgasmic function, sexual desire, intercourse satisfaction and overall satisfaction. The cut-off point of the scale is 25, and score below this margin indicates erectile function issues. It has been translated and validated in the Greek language.<sup>19</sup>

*Female Sexual Function Index (FSFI):* It is a 19-item self-report questionnaire, designed to assess female sexual function. It evaluates six domains; desire, arousal, lubrication, orgasm, satisfaction, and pain. The cut-off point for the FSFI is 26.5 and scores lower than that indicate increased risk of sexual dysfunction. It has been translated and validated in the Greek language.<sup>20</sup>

*Sexual activity:* Comparison of sexual activity before and during the quarantine was assessed with 5 statements structured by the researchers regarding frequency of sexual thoughts, masturbation, intercourse and quality of intercourse, and general evaluation of the level of sexual function (e.g. intercourse with my partner is more frequent). Participants stated their level of agreement on a 5-point Likert scale, ranging from "strongly disagree" to "strongly agree".

*Relationship quality:* Quality of the relationship before and during the quarantine was assessed with 5 statements structured by the researchers regarding communication, company, understanding, tension and general evaluation of companionship (e.g. communication with my partner is better). Participants stated their level of agreement on a 5-point Likert scale, ranging from "strongly disagree" to "strongly agree".

*Mood and anxiety:* These were assessed with 2 statements structured by the researchers regarding the respondents' anxiety level and mood before and during the quarantine (e.g. my mood has worsened, I experience more anxiety than before). Participants stated their level of agreement on a 5-point Likert scale, ranging from "strongly disagree" to "strongly agree".

## Ethical Considerations

Participants were informed of the survey's purpose with a brief description of the research protocol before proceeding to its completion and that submission of their response was considered as an automatic consent. The questionnaire administered was anonymous and no remuneration was provided. Safety of the collected data was maintained. The study's protocol was approved by the Ethics Committee of Eginition hospital, where the Out-patient Clinic for Sexual Health of the 1st Department of Psychiatry of the Medical School of Athens pertains to.

## Statistical Analysis

For the continuous variables mean (standard deviation) or median (interquartile range) were calculated. Categorical variables were presented as absolute (n) and relative frequencies (%). To assess the relationship between categorical variables the Chi square test was applied. Given that FSFI and IIEF subscales were not normally distributed (Shapiro-Wilk test), only non-parametric tests were used to analyse the data. To test whether the total score of the FSFI or the IIEF erectile function of the sample differ from an estimated median based on previous research in Greek population (studies conducted before the outbreak), the one sample non-parametric sign rank test was applied. To assess the effects of demographic and other participants' characteristics on sexual function (IIEF and FSFI scores), the non-parametric Kruskal-Wallis H test (for more than 2 groups) and the Mann-Whitney U test (for 2 groups) were used. Statistical significance was set to  $P < .05$ . Regarding the associations between reported state of anxiety and the FSFI or IIEF scores for females and males respectively, the Kendall's  $\tau$  correlation coefficient was calculated. As multiple correlation tests were performed, the Holm-Bonferroni adjustment was applied to correct the p values.<sup>21,22</sup> Statistical analyses were performed using the SPSS for Windows (version 25) statistical software (SPSS Inc., Chicago, IL).

## RESULTS

### Study Sample

In total, 299 adult participants being in a steady relationship completed the entire questionnaire, while 1 female participant did not complete the FSFI questionnaire. The response was excluded only from the FSFI data analysis. Though sexual orientation was not a reason of exclusion, all participants were of heterosexual orientation. Basic demographic characteristics of the sample are presented in [Table 1](#).

### Relationship Quality, Sexual Activity, and Mood and Anxiety During the Quarantine

With respect to the relationship's quality, the majority of the participants did not experience any notable change, though a high percentage reported enjoying their partner's company more and their partner being more understanding. Regarding sexual activity no influence of the quarantine was reported, though a high percentage

**Table 1.** Basic sociodemographic characteristics of the sample (N = 299)

Variable	Total (N,%)
Gender	
Male	86, (28.8)
Female	213, (71.2)
Agegroups	
18–28 y old	64, (21.2)
29–36 y old	72, (24.0)
37–44 y old	82, (27.4)
45–74 y old	82, (27.4)
Family status	
Married or cohabiting with partner	186, (62.2)
in a relationship with no cohabitation	113, (37.8)
Children in the house	
Yes	130, (43.5)
No	169, (56.5)
Educational level	
<12 years	34, (11.4)
12 years	18, (6.0)
>12 years	247, (82.6)
Occupational status	
Private sector employee	95, (31.8)
Civil servant	75, (25.1)
Freelancer	67, (22.4)
Unemployed	21, (7.0)
Economically inactive by choice (i.e. students)	41, (13.4)
Occupational status during lockdown	
Work from home, full Time	61, (20.4)
Work from home, part time	65, (21.7)
Work at job location, full time	58, (19.4)
Work at job location, part time	22, (7.4)
No employment	93, (31.1)
Exposure to information about covid-19	
No exposure to information at all	5, (1.7)
Standard information on covid	115, (38.5)
Some hours of exposure to information per day	56, (18.7)
Many hours of information per day	75, (25.1)
Being informed about Covid constantly	48, (16.1)
Access to partner for sexual activity during the covid-19 lockdown	
Yes	256, (85.6)
No	43, (14.4)

of the participants reported having increased sexual thoughts. No change in mood, but an increase in anxiety was found. Statements and each one's detailed results are outlined in [Table 2](#).

### Sexual Activity and Relationship Quality in Relation With Demographic Characteristics

The mean ranks of the Likert scale responses with regards to sexual activity and relationship quality were calculated and compared across the characteristics of the sample; higher scores

**Table 2.** Results on the statements regarding relationship quality, sexual activity and mood

Variable	Level of agreement (%)				
	Strongly disagree	Disagree	Neither agree/ disagree	Strongly agree	Strongly agree
Communication with my partner is better	3	9.7	35.1	34.8	17.4
I enjoy my partner's company more than before	6.0	8.7	24.1	33.4	27.8
Tension between me and my partner is minimized	6.7	17.7	34.8	23.1	17.7
My partner understands my emotions and supports me	3.7	9.0	19.7	36.5	31.1
I experience more sexual fantasies and thoughts	9.7	19.7	37.8	20.1	12.7
Intercourse with my partner is more frequent	23.1	20.1	27.1	19.4	10.4
Intercourse with my partner is more enjoyable	18.7	14.0	29.8	26.8	10.7
I masturbate more frequently	44.1	17.7	22.4	9.4	6.4
Quarantine has benefited my sexual activity	27.8	18.1	25.4	20.4	8.4
Quarantine has influenced the quality of my relationship	9.0	14.4	30.8	29.8	16.1
I experience more anxiety than before	17.1	20.1	21.4	26.8	14.7
My mood has worsened	19.1	22.4	27.8	19.7	11.0

corresponded to higher levels of agreement to each statement. No statistically significant difference was reported based on gender. With respect to age no significant difference was found in most of the statements for both variables ( $P = ns$ ). A main effect of age group was found for the statement “I experience more sexual fantasies and thoughts”; post hoc comparisons with a Dunn-Bonferonni Correction revealed that the 18-28 age group (mean rank = 192.44) had a higher mean score of level of agreement compared to the 34-44 and 45-74 age groups, with mean ranks 192.44 and 130.51 respectively ( $P < .0005$ ). Similarly, for the statement “I masturbate more frequently” post hoc comparisons with a Dunn-Bonferonni Correction showed that participants aged 18–28 years old had a higher level of agreement (mean rank = 185.50) than those aged 37-44 and 45–74. Finally, for the statement “Quarantine have benefited my sexual activity [ $H(3) = 8.25, P = 0.04$ ], post-hoc comparisons revealed that participants aged 29–36 years old (mean rank = 173.28) had a higher level of agreement than those aged 45-74 years old ( $z = 2.68, P = 0.04$ ) (Figure 1).

Regarding having children in the house during the lockdown, participants who reported cohabiting with children reported lower levels of agreement than those that were in houses without children in the statements “My partner understands my emotions and supports me” (mean rank: 165.86vs129.38), “I experience more sexual fantasies and thoughts” (mean rank: 130vs165.38) and “I masturbate more frequently” (mean rank: 134.51vs161.92) (Figure 2). With respect to the occupational status of the participants during lockdown and exposure to information about covid-19, there were no statistically differences between groups regarding the level of agreement in most of these statements ( $P = ns$ ).

Regarding access to partner, participants who reported having access had a significantly higher level of agreement than participants with no access in the statements “communication with my partner is better”, “I enjoy my partner's company more than before”, “My partner understand my emotions and supports me”, “Intercourse with my partner is more frequent”, “Intercourse with my partner is more enjoyable”, “Quarantine has

benefited my sexual activity” and “Quarantine has influenced the quality of my relationship” ( $P < 0.0005$ ). Participants with access to their partner had a statistically significant lower level of agreement than those with no access in the statements “I experience more sexual fantasies and thoughts”, “I masturbate more frequently”, and “My mood has worsened” ( $P < 0.05$ ).

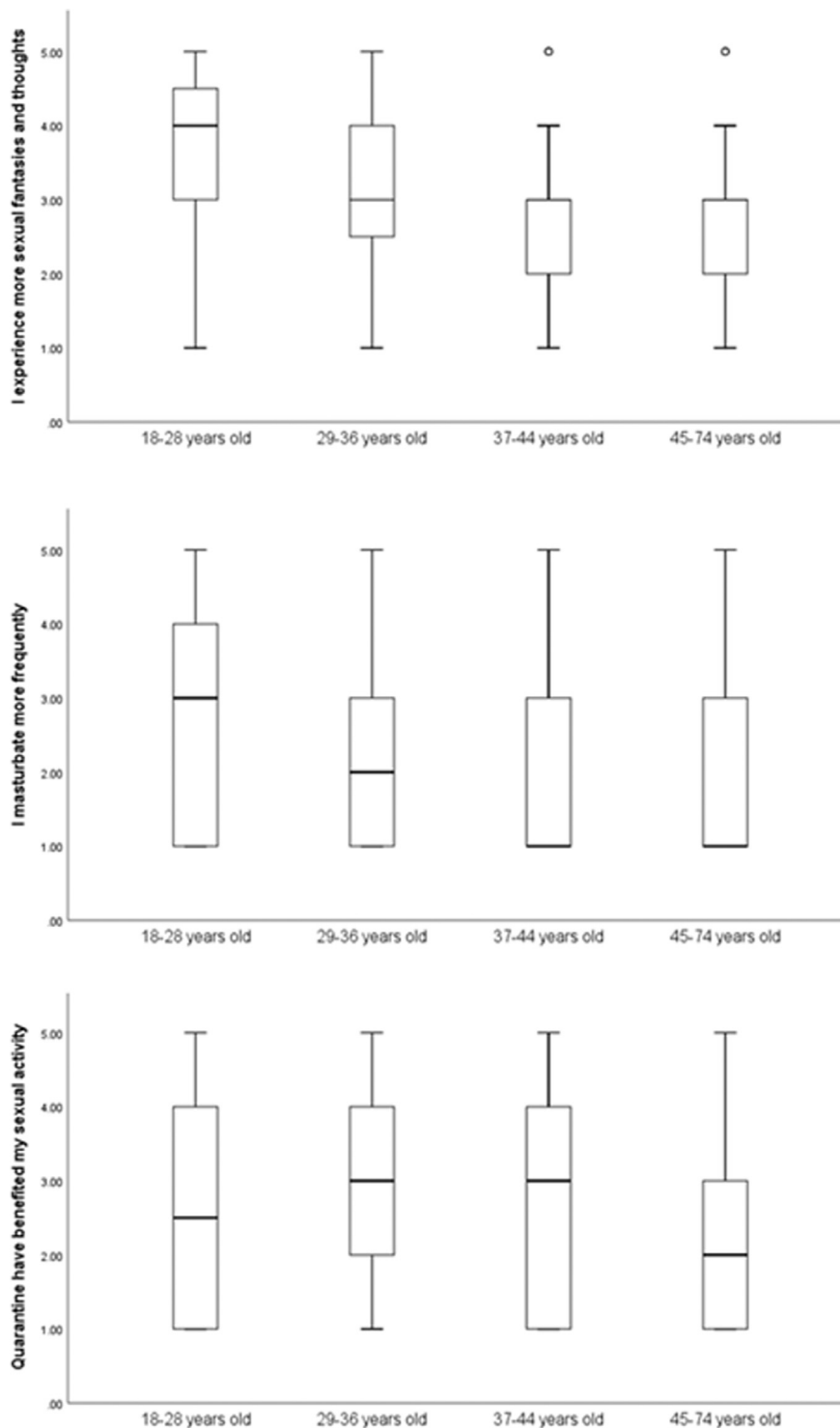
### Sexual Function For the Female Participants (FSFI)

Out of the 212 responses, 43 (20.2%) of them were excluded from the analysis for not having sexual activity during the last 4 weeks prior to the survey<sup>23</sup>. Finally, analysis was conducted for the 169 responses. 17.6% ( $n = 30$ ) demonstrated higher risk for developing sexual dysfunction, whereas the remaining 81.9% demonstrated no risk of sexual dysfunction.

To test whether the total score of the FSFI of our sample differ from an estimated median based on the results of a previous research (before the outbreak) in a Greek female population; the one sample non parametric sign rank test was applied. Our generated median values were compared to those reported by Zachariou et al (2017).<sup>20</sup> (assuming their mean values were based on normal distributed data so they are almost equal to the median values) based on the age category of the participants. Analysis showed that there were no statistically significant differences between the median FSFI based on age score of our sample and the hypothesized median score ( $z = -1.16, P = 0.25$ ).

The FSFI subscales were compared across the participants' characteristics Results are presented in Table 3. There was no significant effect of exposure to Covid-19 information on either the total scores of the FSFI or on any of the index's subscales ( $P = ns$ ).

Lastly, the associations between reported state of anxiety and the FSFI scores were also assessed and reported in Table 4. Weak negative correlations between the levels of agreement of the statement “I experience more anxiety than before” and the satisfaction and pain subscales, and the total score of the FSFI ( $P < .05$ ) were reported.



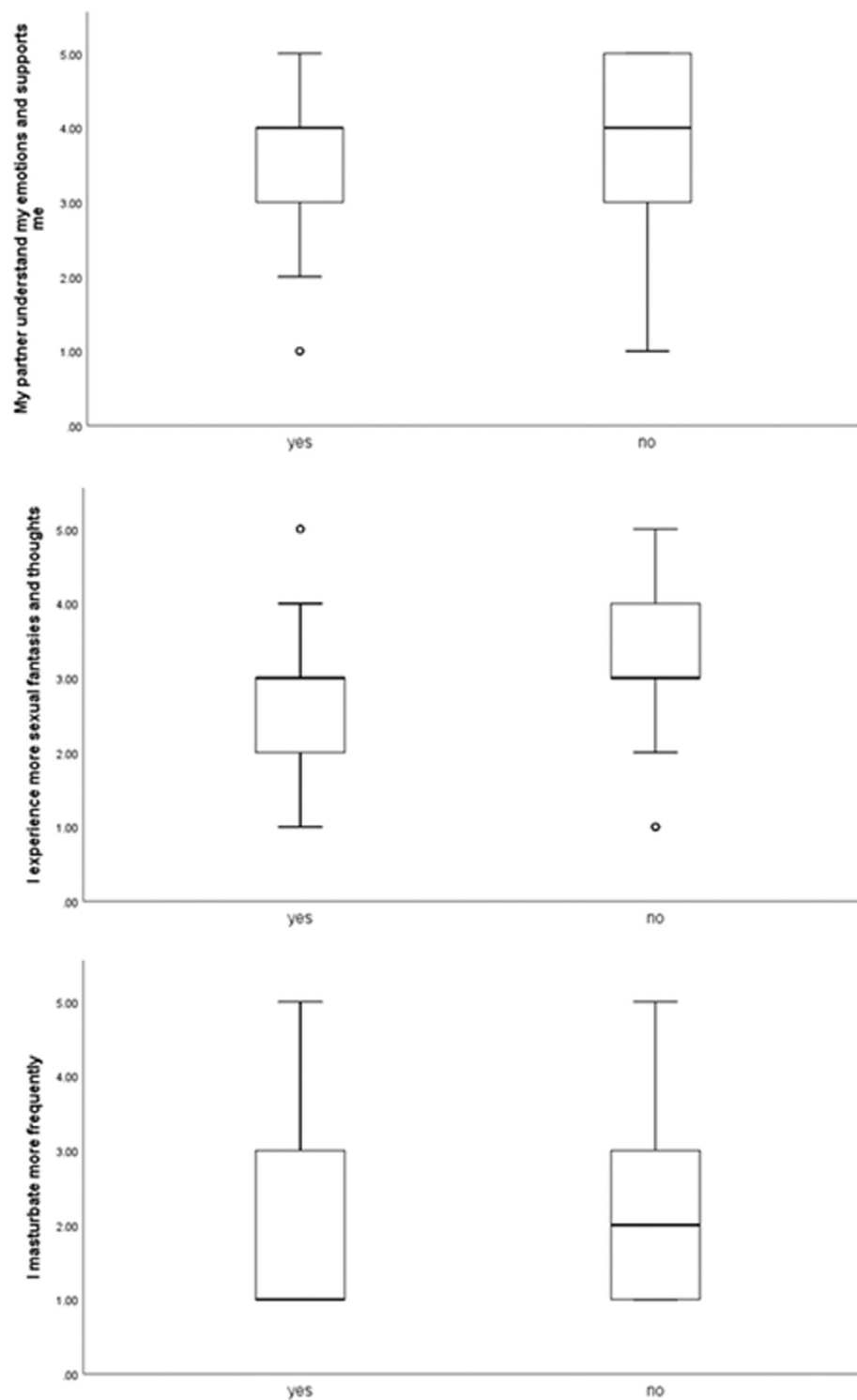
**Figure 1.** Participants aged 18–28 had a higher level of agreement than those aged 37–44 and 45–74 years old in the statements “I experience more sexual fantasies and thoughts” and “I masturbate more frequently” ( $P < 0.05$ ). Participant aged 29–36 had a higher level of agreement than those aged 45–74 years old in the statement “Quarantine have benefited my sexual activity”.

### Sexual Function For the Male Participants (IIEF)

No participant reported not having sexual activity for the last 4 weeks prior to the quarantine and all male responses were included in the analysis. For 17 (22.7%) men of the sample a

possibility of erectile dysfunction was found, whereas the rest 58 (77.3%) no indication of sexual dysfunction existed.

To test whether the total score of the IIEF of our sample differs from an estimated median based on previous research in



**Figure 2.** Participants with children in the house had a lower level of agreement than those without children in "My partner understand my emotions and supports me" and "I experience more sexual fantasies and thoughts" ( $P < 0.05$ ).

Greek population (study conducted before the outbreak), the one sample non-parametric sign rank test was applied. Our generated median values were compared to an estimated median value (28) for Greek healthy population based on previous studies<sup>24, 25</sup>. Analysis showed that the median value of erectile

function of this study's sample was significantly higher of the tested median value ( $P = .004$ ).

The IIEF subscales were compared across the participants' characteristics and whether they believed that quarantine benefited their sexual activity and relationship quality. Results

**Table 3.** Bivariate analysis of FSFI subscale and total scores across participants' characteristics

Variable	Desire*	Arousal	Lubrication	Orgasm	Satisfaction	Pain	Total FSFI
Age	H(3)=24.14, P < .0005	H(3)=1.92, P = .59	H(3)=9.32, P = .03	H(3)=5.71, P = .13	H(3)=.33, P = .95	H(3)=20.37, P < .0005	H(3) =4.28, P = .23
18–28 y	131.03 <sup>c,d</sup>	83.06	70.65	70.85	83.95	56.38 <sup>b,c</sup>	71.47
29–36 y	118.53 <sup>c,d</sup>	90.12	94.68	83.95	84.72	89.48 <sup>a</sup>	90.83
37–44 y	87.50 <sup>a,b</sup>	87.10	93.13	96.83	81.88	99.94	91.06
45–74 y	82.03 <sup>a,b</sup>	76.14	73.27	85.17	88.04	83.33	81.20
Work status during Covid-19 lockdown	H(2)= 2.24, P = .33	H(2)= 4.14, P = .13	H(2)=3.89, P = .14	H(2)=13.36, P = .001	H(2)=4.02, P = .13	H(2)=12.49, P = .002	H(2)= 7.22, P = .03
a-Work from home	100.13	92.34	91.67	97.67 <sup>c</sup>	90.91	94.56 <sup>c</sup>	94.60 <sup>c</sup>
b-Work at job location	112.58	75.98	80.50	77.73	71.67	83.58	78.64
c-No employment	112.49	77.99	76.27	67.60 <sup>a</sup>	81.49	67.23 <sup>a</sup>	72.37 <sup>a</sup>
Exposure to Covid-19 info	H(3) =1.53, P = .68	H(3)=.13, P = .98	H(3)=2.47, P = .48	H(3)=5.16, P = .16	H(3)=1.60, P = .79	H(3)=1.60, P = .66	H(3)=1.68, P = .64
Minimum exposure to info on Covid-19	108.48	85.04	86.47	92.60	86.26	85.05	88.77
Some hours of exposure to info per day	113.03	87.24	80.29	70.32	85.04	77.28	77.13
Many hours of information per day	98.22	84.09	91.73	82.93	78.00	85.99	82.09
Constantly being informed about Covid-19	105.19	82.76	73.39	85.24	89.82	92.18	90.13

Superscripted letters in mean ranks indicate significant differences with the respective groups as shown by multiple comparisons with Dunn-Bonferonni significance correction.

Data are presented in Mean ranks.2Kruskal-Wallis H test.3Mann Whitney U test.

\*Data from all the 212 participants were used.

**Table 4.** Kendall's  $\tau$  correlations Coefficients between FSFI scales and participants' level of agreement on anxiety

FSFI subscales	I experience more anxiety than before
Desire*	-.17
Arousal	-.09
Lubrication	-.13
Orgasm	-.10
Satisfaction	-.20 <sup>†</sup>
Pain	-.13 <sup>†</sup>
Total_FSFI	-.17 <sup>†</sup>

\*Data from all the 212 participants were used.

<sup>†</sup> $P < 0.05$ (Holm-Bonferonni correction for multiple correlations),  $n = 14$ .

are presented in Table 5. No significant association between exposure to Covid-19 and total scores of the IIEF or any of the index's subscales was found.

Lastly, the association between reported state of anxiety and the IIEF scores was assessed and presented in Table 6. No significant correlation between levels of agreement in the statement "I experience more anxiety than before" and the scores in either the total score of the IIEF or any of the subscales were reported.

## DISCUSSION

This study aimed to investigate the possible impact of lockdown, social distancing and self-isolation on sexual function and

relationship quality of couples in Greece. The majority of study's sample consisted of women (71.2%), had a tertiary education (82.6%) and was employed (79.3%). 62.2% were either married / cohabiting with their partner or in a steady relationship (37.8%). Most of them reported having access to their partner during the quarantine period (85.6%). Women of our sample were younger than men, were more likely to work from home during the lockdown, and spent less time in gathering information about covid-19 compared to men.

Most subjects of the sample reported that during the quarantine they enjoyed the qualitative elements of their relationship such as the company, understanding and support of their partner more than before. This comes in line with previous findings<sup>16,26</sup> who reported that, among other factors, being in an exclusive relationship is an indicator of better relationship quality. A plausible explanation could be that people in a steady relationship during challenging periods are more interested in companionship rather than sexual contact. On the contrary, it was found that the quarantine did not positively impact their sexual activity in general, and that they masturbated less. It appeared that the reported level of anxiety did not correlate with IIEF, but was correlated with the FSFI. This applied for the Satisfaction and Pain subscales and the total score of the index. The fact that female sexual function was more affected by the pandemic when compared to males, could be explained by the findings of a previous study, suggesting that genital arousal and sexual satisfaction in females can be affected under stressful conditions.<sup>27</sup>

**Table 5.** Bivariate analysis of IIEF subscales and total scores across participants' characteristics

Variable	Erectile function	Orgasmic function	Sexual desire*	Intercourse satisfaction	Overall satisfaction*
Age	H(3)=9.78, $P = .02$	H(3)=3.71, $P = .29$	H(3)=1.92, $P = .59$	H(3)=5.00, $P = .17$	H(3)=1.27, $P = .74$
18–28 y	27.40	37.00	47.13	42.50	37.69
29–36 y	47.18	43.09	46.96	49.36	42.54
37–44 y	43.67	39.70	45.36	36.67	46.86
45–74 y	30.32	33.68	38.82	33.21	41.35
Work status during Covid-19 lockdown	H(2) = 0.79, $P = .67$	H(2) = 1.81, $P = .40$	H(2)=3.50, $P = .17$	H(2) = 2.89, $P = .24$	H(2) = 4.98, $P = .08$
Work from home	40.00	34.68	35.85	31.86	42.43
Work at job location	38.57	40.40	47.74	41.78	48.73
No employment	34.21	37.21	43.40	37.94	34.21
Exposure to Covid-19 info	H(3) =1.62, $P = .66$	H(3) = 2.70, $P = .44$	H(3) = 0.33, $P = .15$	H(3) =1.47, $P = .69$	H(3) = 0.49, $P = .92$
Minimum exposure to info on Covid-19	37.33	35.26	43.29	36.67	41.38
Some hours of exposure to info per day	38.69	44.00	50.50	43.35	45.44
Many hours of information per day	34.50	36.50	34.88	34.89	42.46
Constantly being informed about Covid-19	42.75	38.78	48.67	39.67	45.69

Data are presented in Mean ranks: 2, Kruskal-Wallis H test; 3, Mann Whitney U test.

\*Data from all the 86 responses were used.



**Table 6.** Kendall's  $\tau$  correlations Coefficients between IIEF scales and participants' level of agreement on anxiety

IIEF Subscales	I experience more anxiety than before
Sexual desire*	-.07
Overall satisfaction*	-.14
Erectile function	.00
Orgasmic function	.01
Intercourse satisfaction	-.13

\*Data from all the 86 participants were used.

With regards to the participants' age, the younger individuals had more sexual thoughts and fantasies compared to the older. Additionally, it was found that younger participants were masturbating with higher frequency, and that participants in the 29–36 agegroup reported an improvement of their sexual life in contrast to the older age groups, which reported the opposite. These results came to an agreement with Jacob et al,<sup>15</sup> who reported that being young, combined with other factors, enhanced sexual activity during the lockdown in the UK.

Couples that had children and cohabited with them, reported having less sexual thoughts, fantasies and masturbation as well as lower understanding and support from their partner compared to those not living only with their partner. A plausible explanation for this finding can be given by an earlier study which suggested that maternal stress plays an important role in both partners' sexual satisfaction.<sup>28</sup> Another study<sup>29</sup> suggested that the presence of children has a negative effect on women's sexual desire and on the relationship's quality. In similar findings concluded the study by Cito et al (2020) who reported that having children was a restrictive factor as far as the number of sexual intercourse is concerned, and the higher the number of children the lower the number of intercourse was.<sup>30</sup> Considering that our sample consisted mostly of women, it is possible that women having their children at home during the under-study period made them more absorbed by their maternal role; possibly a burden of responsibility that cannot be positively affected by the presence of their partner.

Those who spent the quarantine with their partner, reported better communication and sexual life, compared to those who didn't have access to their partner. The latter reported more frequent sexual thoughts, fantasies and masturbation but worse mood as well. Results showed that the participants in immediate contact with their partner were benefited by the quarantine as far as the emotional aspect of the relationship is concerned. This emotional advantage may explain the reported improved sexual life. Dewitte et al<sup>29</sup> found that the better the relationship the more possible it was for their study's participants to have sexual intercourse, which subsequently amplified the satisfaction they got from their relationship.

The score of the subjects' FSFI was similar to that of the general population. This means that female sexual function in the

study's sample was not affected by the quarantine. This came in contrast to other findings that reported a reduction of sexual activity for women in Italy regardless of their access to their partner during the quarantine.<sup>14</sup> This could be explained by the fact that the course of the covid-19 pandemic took different directions for the two countries; during the time this study was conducted the clinical cases of covid-19 in Greece were profoundly fewer compared to Italy's and the death toll was one of the smallest in the world. Findings of this study were contradicting with the results of another research conducted solely on females, and showed that sexual function declined and this was associated with higher levels of anxiety.<sup>31</sup> Surprisingly, some of the female participants of the study reported better sexual function and relationship quality during the quarantine. The youngest women of the sample reported increased desire and decreased pain, and those who worked from home during the lockdown reported better orgasmic function and less pain. These results are contradictory with a study conducted in Turkey; Yuksel et al. found that, though sexual desire and number of intercourse were increased, quality of sexual life was deteriorated.<sup>32</sup> It was previously suggested that women's income has a slight but positive impact on women's sexual satisfaction,<sup>33</sup> thereby continuing being financially active during the quarantine might be the explanation for the positive results for these women. In addition, literature has shown that working women's sexual satisfaction might be affected by the sense of power and equality within the relationship that adding to the household's income provides.<sup>33</sup>

The score of the IIEF suggested better sexual health for the male portion of the sample compared to the general population. Results of this study showed that isolation measures did not affect the male sexual function. Given that all participants were in a romantic relationship or marriage, results came in line with Jacob's study; among the participants of that study, though they demonstrated an overall decreased sexual activity, married males had greater sexual activity.<sup>15</sup> In the study which was conducted by Arafat el at (2020) researchers reported improved sexual interactions with their partners but only for a small portion of their participants.<sup>34</sup> Their finding which comes in line with this study's results is the fact that the majority of the subjects for both studies reported increased satisfaction by the relationship with their partner.

This study bears certain limitations. Firstly, the results may have been biased by the methodology used with respect to study recruitment, yet the limited timeframe available to recruit subjects forbid a method of a more strict and accurate design. . Lastly, comparison of the FSFI and IIEF scores of the participants' pro- and post-quarantine was not feasible.

## CONCLUSION

Conclusively, it seemed there was no or a slightly negative impact of the quarantine on sexual function for both males and females in this study's sample. Moreover, no serious increase in

anxiety or depression level was reported. Being in a steady relationship, living with their partner but not with the children during the quarantine, was proven to be predictive factors of satisfying sexual activity and enhanced emotional security. In contrast, participants living separately from their partner reported increased frequency of sexual activity (more frequent sexual thoughts and masturbation) but worse mood during the quarantine.

## ACKNOWLEDGMENTS

The authors would like to thank all who voluntarily participated in this study.

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*Conflict of Interest:* The authors report no conflicts of interest.

*Funding:* None.

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