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Challenges in the Practice of Sexual Medicine in the Time of COVID-19 in the United Kingdom



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ABSTRACT

Background: On 23rd March 2020, the UK government released self-isolation/social distancing guidance to reduce the risk of transmission of SARS-CoV-2. The influence such guidance has on sexual activity is not known.

Aim: To investigate levels and correlates of sexual activity during COVID-19 self-isolation/social distancing in a sample of the UK public.

Methods: This paper presents preplanned interim analyses of data from a cross-sectional epidemiological study, administered through an online survey.

Outcomes: Sexual activity was measured using the following question: “On average after self-isolating how many times have you engaged in sexual activity weekly?” Demographic and clinical data were collected, including sex, age, marital status, employment, annual household income, region, current smoking status, current alcohol consumption, number of chronic physical conditions, number of chronic psychiatric conditions, any physical symptom experienced during self-isolation, and number of days of self-isolation/social distancing. The association between several factors (independent variables) and sexual activity (dependent variable) was studied using a multivariable logistic regression model.

Results: 868 individuals were included in this study. There were 63.1% of women, and 21.8% of adults who were aged between 25 and 34 years. During self-isolation/social distancing, 39.9% of the population reported engaging in sexual activity at least once per week. Variables significantly associated with sexual activity (dependent variable) were being male, a younger age, being married or in a domestic partnership, consuming alcohol, and a higher number of days of self-isolation/social distancing.

Clinical Implications: In this sample of 868 UK adults self-isolating owing to the COVID-19 pandemic, the prevalence of sexual activity was lower than 40%. Those reporting particularly low levels of sexual activity included females, older adults, those not married, and those who abstain from alcohol consumption.

Strength and Limitations: This is the first study to investigate sexual activity during the UK COVID-19 self-isolation/social distancing. Participants were asked to self-report their sexual activity potentially introducing self-reporting bias into the findings. Second, analyses were cross-sectional and thus it is not possible to determine trajectories of sexual activity during the current pandemic.

Conclusion: Interventions to promote health and well-being during the COVID-19 pandemic should consider positive sexual health messages in mitigating the detrimental health consequences in relation to self-isolation/social distancing and should target those with the lowest levels of sexual activity. **Jacob L, Smith L,**

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INTRODUCTION

In March 2020, the World Health Organization declared the COVID-19 outbreak a global pandemic. COVID-19 is caused by SARS-CoV-2, a variant of coronavirus. As of 17th April 2020 (10:00AM CET), more than 2,160,170 cases have been diagnosed globally, with over 68,976 fatalities.¹ COVID-19 is a respiratory virus that is transmitted by large respiratory droplets and direct contact with infected secretions. Therefore, on 23rd March 2020, the UK government released the following guidance to reduce the risk of transmission. “Everyone must stay at home to help stop the spread of coronavirus. You should only leave your home for very limited purposes: 1) shopping for basic necessities, for example food and medicine, which must be as infrequent as possible; 2) one form of exercise a day, for example a run, walk, or cycle—alone or with members of your household; 3) any medical need, including to donate blood, avoid or escape risk of injury or harm, or to provide care or to help a vulnerable person; and 4) traveling for work purposes, but only where you cannot work from home”.² This guidance was implemented for an initial 3-week period, with the “lockdown” extended for a further 3 weeks on April 16th, 2020.² It should also be noted here that before the mass guidance the UK public who were at high risk of serious complications if contracting COVID-19, lived with someone who was at high risk of serious complications if contracted COVID-19, and the elderly were encouraged to self-isolate.

The impact of following the UK guidance on health-related behaviors of the UK public is largely unknown. One behavior that may be impacted by self-isolation/social distancing is that of sexual activity. Sexuality is complex and encompasses a myriad of phenomenon that include partnerships, behaviours, attitudes, identity, orientation, beliefs, and activity³ and specifically sexual activity can encompass a plethora of acts including penetrative sex (vaginal, anal), oral sex, and mutual masturbation. Importantly, a frequent and trouble-free sex life is associated with a plethora of physical and mental health benefits.

In a prospective study of 1,046 men and 1,158 women (aged 57–85 years) residing in the U.S., results indicated that the frequency and quality of sex protected against cardiovascular events in later life.⁴ In another US study, of a cross-sectional nature, 22 self-reported health conditions were assessed in relation to sexual inactivity in 22,654 participants aged 55 years and older, including 1,879 participants over age 80 years. It was found that sexual inactivity was significantly related to cancer, bladder/bowl problems, major surgery, poor vision, mental health conditions, and cardiovascular disease and its risk factors including diabetes, hypertension, and high cholesterol.

Additional associations were found with sexual inactivity including hearing loss and dementia for men, and dermatologic conditions, problems with the joints, bone or back, gastrointestinal problems, chronic wound care, and gum disease in women.⁵ As a whole, these results indicate that sexual activity can be an important activity for maintaining physical health and emotional well-being.

Frequency of sexual intercourse has also been shown to be associated with reduced risk of fatal coronary events, and prostate and breast cancer in studies using longitudinal or case–control designs.^{6,7} Several other studies have shown an association between sexual activity and physical health, for example see.^{8–10} In relation to mental health, frequent sexual activity has been shown to be associated with greater enjoyment of life,¹¹ quality of life,¹² well-being,¹³ and cognitive function.^{14,15}

The World Health Organization has recognized that government COVID-19 self-isolation/social distancing measures may result in people becoming more anxious, angry, stressed, agitated, and withdrawn¹⁶ and this may consequently also have a negative impact on physical health. It is possible that maintaining an active sex life or reintroducing frequent sexual activity into one’s life during self-isolation/social distancing may mitigate some of the potential detrimental consequences of COVID-19 self-isolation/social distancing. However, to date, no literature exists on this topic. Moreover, it is important to note that dating applications (such as Tinder) are popular in the UK¹⁷ and one key motivation for using such applications is to engage in casual sex.¹⁸ Indeed, self-isolation guidance would have likely reduced this engagement.

Before any recommendations in relation to sexual activity during self-isolation/social distancing can be made, it is important to understand levels and correlates of sexual activity during this unique situation to inform further research and advice disseminated.

Therefore, the aim of the present study is to investigate levels and correlates of sexual activity during COVID-19 self-isolation/social distancing in a sample of the UK public.

MATERIALS AND METHODS

Study Design and Participants

This paper presents preplanned interim analysis of data from a cross-sectional epidemiological study, administered through an online survey. The study was launched on 17 March 2020, 17 days after the first case of COVID-19 was diagnosed in the

Table 1. Sample characteristics (overall and by sexual activity status)

Characteristics	Category	Overall (N = 868)	Sexual activity		Effect size*	P-value†
			No (N = 522)	Yes (N = 346)		
Sex	Male	36.9	28.6	49.7	0.21	<.001
	Female	63.1	71.4	50.3		
Age	18–24 years	10.6	10.7	10.4	0.21	<.001
	25–34 years	21.8	15.9	30.6		
	35–44 years	16.6	16.5	16.8		
	45–54 years	16.7	17.2	15.9		
	55–64 years	16.8	18.2	14.7		
	65–74 years	13.1	15.3	9.8		
	≥75 years	4.4	6.1	1.7		
Marital status	Single/separated/divorced/widowed	44.7	50.7	35.8	0.15	<.001
	Married/in a domestic partnership	55.3	49.3	64.2		
Employment	No	40.7	46.0	32.7	0.13	<.001
	Yes	59.3	54.0	67.3		
Annual household income	<£15,000	14.7	17.9	9.9	0.17	<.001
	£15,000–<£25,000	18.3	20.8	14.5		
	£25,000–<£40,000	23.0	22.9	23.2		
	£40,000–<£60,000	20.7	19.5	22.6		
	≥£60,000	23.3	18.9	29.9		
Region	England	77.8	78.5	76.9	0.05	.509
	Northern Ireland	18.9	19.0	18.8		
	Scotland	2.1	1.5	2.9		
	Wales	1.2	1.0	1.4		
Current smoking	No	87.7	86.3	89.8	0.05	.156
	Yes	12.3	13.7	10.2		
Current alcohol consumption	No	32.0	37.3	24.0	0.14	<.001
	Yes	68.0	62.7	76.0		
Number of chronic physical conditions	Mean (standard deviation)	1.71 (1.98)	1.88 (2.01)	1.45 (1.89)	0.22	.002
Number of chronic psychiatric conditions	Mean (standard deviation)	0.65 (0.87)	0.69 (0.89)	0.60 (0.85)	0.10	.135
Any physical symptom experienced during self-isolation	No	73.9	72.3	76.3	0.04	.233
	Yes	26.1	27.7	23.7		
Number of days of self-isolation	Mean (standard deviation)	9.11 (7.03)	8.74 (6.75)	9.69 (7.40)	0.14	.064

Sexual activity was dichotomized into sexual activity (at least one sexual intercourse per week on average) versus no sexual activity (zero sexual intercourse per week on average).

Values are percentages unless otherwise stated.

*Effect size was calculated using phi coefficient and Cramer's V for categorical variables and Cohen's d for continuous variables.

†P-values were based on chi-squared tests for categorical variables and on t-tests for continuous variables.

Table 2. Mean number of sexual activities per week in the overall population and by sex and age

Population	Mean (standard deviation)	Effect size*	P-value†
Overall	1.75 (8.35)	—	—
Sex			
Male	3.23 (13.39)	0.28	.002
Female	0.88 (2.24)		
Age			
18–24 years	2.65 (7.52)	0.01	.079
25–34 years	3.20 (14.89)		
35–44 years	1.26 (3.17)		
45–54 years	1.03 (1.98)		
55–64 years	1.74 (8.56)		
65–74 years	0.71 (1.44)		
≥75 years	0.26 (0.76)		

*Effect size was calculated using Cohen's d for the sex analysis and eta squared for the age analysis.

†P-values were obtained using t-test and analysis of variance.

United Kingdom. The study was approved by an Anglia Ruskin University Research Ethics Committee (16 March 2020).

Participants were recruited through social media and through national media outlets (BBC, March 26th 2020) and by distributing an invitation to participate through existing researcher networks. Adults aged 18 years and over, currently residing in the UK and self isolating/social-distancing due to COVID-19, were eligible to participate. Participants were directed to a data encrypted website where they indicated their consent to participate after reading an information sheet. Before completing the survey, participants were asked if they were currently self-isolating and over 18 years of age, if the participants' response was affirmative to both questions then the participant was asked to complete the survey and if the response was no to either of those questions then the participant was asked to not complete the survey. 932 individuals finally participated in the survey (0–5 days of self-isolation: 25.5%; 6–10 days of self-isolation: 45.2%; and ≥11 days of self-isolation: 29.3%), and only those for whom data on sexual activity during self-isolation were available were included in the present study.

Dependent Variable

In the participant survey, sexual activity was defined as sexual intercourse, masturbation, petting, or fondling. Participants were asked "On average after self-isolating/social-distancing how many times have you engaged in sexual activity weekly?"

Independent Variables

Demographic data were collected, including sex (male or female), age (in 10-year age bands), marital status (single/separated/divorced/widowed or married/in a domestic partnership), employment, and annual household income (<£15,000, £15,000–<£25,000, £25,000–<£40,000, £40,000–<£60,000, ≥£60,000). Participants were also asked to indicate which of the 4 main UK countries they lived in (England, Northern Ireland, Scotland, Wales).

Measures of health status included whether respondents were a current smoker and consumer of alcohol (yes/no). Chronic physical diseases included obesity, hypertension, myocardial infarction, angina pectoris and other coronary diseases, other cardiac diseases, varicose veins of lower extremities, osteoarthritis, chronic neck pain, chronic low back pain, chronic allergy (excluding allergic asthma), asthma (including allergic asthma), chronic bronchitis, emphysema or chronic obstructive pulmonary disease (COPD), type 1 diabetes, type 2 diabetes, diabetic retinopathy, cataract, peptic ulcer disease, urinary incontinence or urine control problems, hypercholesterolemia, chronic skin disease, chronic constipation, liver cirrhosis and other hepatic disorders, stroke, chronic migraine and other frequent chronic headaches, hemorrhoids, cancer, osteoporosis, thyroid disease, renal disease, and injury. Psychiatric conditions included

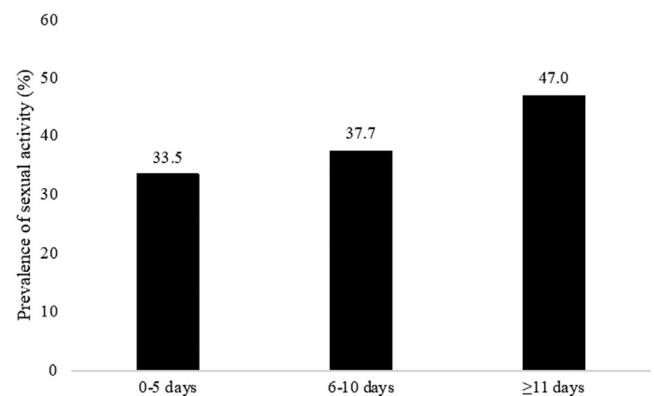


Figure 1. Sexual activity by number of days of self-isolation during the SARS-CoV-2 pandemic in the United Kingdom. Sexual activity was dichotomized into sexual activity (at least one sexual intercourse per week on average) versus no sexual activity (zero sexual intercourse per week on average). The prevalence of sexual activity was significantly different between the 3 groups (P -value = .010). SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2.

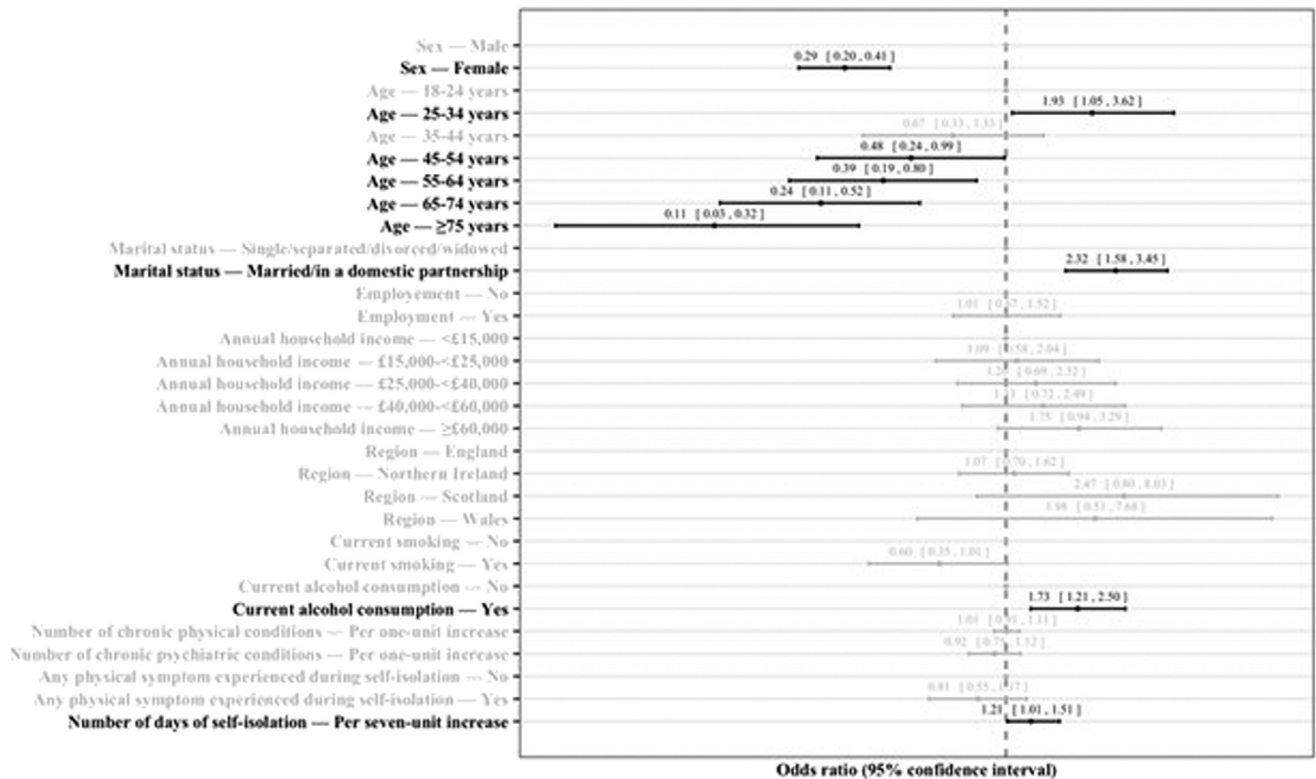


Figure 2. Factors significantly associated with sexual activity in self-isolated adults during the SARS-CoV-2 pandemic in the United Kingdom. Sexual activity was dichotomized into sexual activity (at least one sexual intercourse per week on average) versus no sexual activity (zero sexual intercourse per week on average). The association between several independent variables and sexual activity (dependent variable) was assessed using a multivariable logistic regression model. Independent variables included sex, age, marital status, employment, annual household income, region, current smoking, current alcohol consumption, the number of chronic physical conditions, the number of chronic psychiatric conditions, any physical symptom experienced during self-isolation, and the number of days of self-isolation. All potential predictors were included in the regression analysis as categorical variables except the number of chronic physical conditions, the number of chronic psychiatric conditions, and the number of days of self-isolation that were included as continuous variables. Because the effect size was small for the number of days of self-isolation, odds ratio and 95% confidence interval are displayed for a 7-day increase. Significant findings and findings that were not significant are displayed in black and gray, respectively. SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2.

depression, anxiety, and any other psychiatric condition. Participants were also asked if they had experienced any physical symptom of COVID-19 during self-isolation/social distancing (ie, persistent cough, high temperature, sore throat, runny nose) and the number of days they had been in self-isolation/social distancing.

Statistical Analyses

Sample characteristics were compared between participants with and those without sexual activity using chi-squared tests for categorical variables and t-tests for continuous variables. The mean number of sexual activities was further compared between men and women and between different age groups (ie, 18–24 years, 25–34 years, 35–44 years, 45–54 years, 55–64 years, 65–74 years, ≥75 years) using t-test and analysis of variance (ANOVA), respectively. In addition, potential differences in the prevalence of sexual activity by number of days of self-isolation (ie, 0–5 days, 6–10 days, ≥11 days) were studied

using chi-squared test. Effect sizes were estimated using phi coefficient (chi-squared tests with binary categorical variables), Cramer’s V (chi-squared tests with categorical variables with more than 2 categories), Cohen’s d (t-tests with continuous variables), and eta squared (ANOVA with continuous variables). Finally, the association between several factors (independent variables) and sexual activity (dependent variable) was studied using a multivariable logistic regression model. Independent variables included sex, age, marital status, employment, annual household income, region, current smoking, current alcohol consumption, the number of chronic physical conditions, the number of chronic psychiatric conditions, any physical symptom experienced during self-isolation, and the number of days of self-isolation. All potential predictors were included in the regression analysis as categorical variables except the number of chronic physical conditions, the number of chronic psychiatric conditions, and the number of days of self-isolation that were included as continuous variables. There were less than 6.5% of missing values for the variables used in this study, and therefore,

complete case analysis was carried out. Results from the logistic regression analysis are presented as odds ratios (ORs) and 95% confidence intervals (CIs). Because the effect size was small for the number of days of self-isolation, OR and 95% CI are displayed for a 7-day increase. The level of statistical significance was set at $P < .05$. The statistical analysis was performed with R 3.6.2 (The R Foundation).

RESULTS

There were 868 individuals included in this study (63.1% of women and 21.8% of adults aged 25–34 years; [Table 1](#)). During self-isolation/social distancing, 39.9% of the population ($N = 346$) reported engaging in sexual activity at least once per week on average and was thus classified as sexually active. There was a particularly high prevalence of male sex, younger age, married/in a domestic relationship, employment, high annual household income, and current alcohol consumption in adults with sexual activity compared to those without sexual activity (all P -values < 0.001 ; [Table 1](#)), while the number of chronic physical conditions was significantly lower in the sexually active than in the nonsexually active group (P -value = .002; [Table 1](#)). The mean number of sexual activities was 1.75 (standard deviation = 8.35) in the overall population, and this number was significantly higher in men than in women (3.23 versus 0.88, P -value = .002; [Table 2](#)). Moreover, the prevalence of sexual activity significantly increased from 33.5% in people who were self-isolated for 0–5 days to 47.0% in those who were self-isolated for ≥ 11 days (P -value = .010; [Figure 1](#)). Finally, the results of the multivariable regression analysis are displayed in [Figure 2](#). Variables significantly associated with sexual activity (dependent variable) were being male, a younger age, being married or in a domestic partnership, consuming alcohol, and a higher number of days of self-isolation/social distancing.

DISCUSSION

In the present study, in a sample of 868 individuals residing in the UK, during COVID-19 self-isolation/social distancing, 39.9% of the sample reported engaging in sexual activity at least once per week. Being male, a younger age, married, consuming alcohol, and a higher number of days in self-isolation/social distancing were all associated with greater sexual activity in comparison to their counterparts.

Findings from the present study for the first time sheds light on sexual activity during COVID-19 self-isolation/social distancing among the UK public. Importantly, 60.1% of the sample studied reported to not be sexually active during self-isolation/social distancing. The promotion of consensual sexual activity among the UK adult population during self-isolation/social distancing may mitigate some of the

detrimental consequences that self-isolation/social distancing may impose, particularly in relation to mental health. However, to do this, correlates of sexual activity during self-isolation/social distancing need to be identified. The present study sheds light on this.

Indeed, the present study found that being male, a younger age, married, and consuming alcohol were all associated with greater sexual activity in comparison to their counterparts during COVID-19 self-isolation/social distancing. These findings correspond to the existing literature during nonpandemic times.^{11,19–21} These findings suggest that interventions to promote good mental and physical health during the COVID-19 self-isolation/social distancing period should take into account positive sexual health as part of any messaging. Interventions might particularly focus on females, older adults, those not married, and those who abstain from alcohol consumption. A detailed discussion on potential strategies is beyond the scope of this paper. However, it would likely include the promotion of respected websites such as,²² as well as platforms to provide advice and support in relation to sexual activity among older adult populations.

Interestingly, the present paper also found that number of days in self-isolation/social distancing was also associated with sexual activity. This may be explained by the simple fact that each day of self-isolation/social distancing would increase ones chances of engaging in sexual activity if they are sexually active or potentially sexual activity is being used for a means to ease stress and anxiety or overcome boredom which is likely to increase with increasing days of isolation. Moreover, in modern times, people lead busy lives and may have little discretionary time to spend with their intimate partner. COVID-19 self-isolation may have disrupted daily activities that take time from one's day, such as commuting to work, this time may be being spent with one's partner allowing them to reconnect with increasing days of isolation and consequently engage in sexual activity. However, there is no literature to support these hypotheses and future work of a qualitative nature is required.

This is the first study to investigate sexual activity during the UK COVID-19 self-isolation/social distancing. However, the study findings must be interpreted in light of its limitations. First, participants were asked to self-report their sexual activity and thus potentially introducing self-reporting bias into the findings. Second, analyses were cross-sectional, and thus, it is not possible to determine trajectories of sexual activity during the current pandemic.

In conclusion, in this sample of 868 UK adults self-isolating/social distancing owing to the COVID-19 pandemic, those at particular risk of lower levels of sexual activity included females, older adults, those not married, and those who abstain from alcohol consumption. Interventions to promote sexual activity during the COVID-19 pandemic may mitigate some of the detrimental health consequences in

relation to self-isolation and should target those with the lowest levels of sexual activity.

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