

Article

## Differences in the Sexual Life of Spanish Men During the COVID-19 Lockdown by Sexual Orientation

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### ABSTRACT

**Background:** The pandemic affected the psychological well-being and sexuality of the population, especially among vulnerable groups such as men from sexual minorities. **Method:** In Spain, a total of 320 heterosexual men and 151 sexual minority men, aged between 18 and 60, answered an ad hoc online questionnaire about sexual behavior during the lockdown. **Results:** Compared to heterosexual men, during the lockdown, sexual minority men masturbated more, engaged in more sexual activities online, and had more sex with non-cohabitants. Heterosexual men had more sexual relations with their partners. Living with a partner during the lockdown predicted an improvement in sex life, especially for heterosexual men. Furthermore, the emotional impact of lockdown was a predictor of a worsening sex life regardless of sexual orientation. **Conclusions:** Future interventions should take into account that men's sex lives are mediated by the emotional impact of the moment, especially among sexual minority men, since the quality of their sex life shows a weaker relationship with some of the protective variables studied (living with a partner).

## Diferencias en la Vida Sexual de los Hombres Españoles Durante el Confinamiento por la COVID-19 por Orientación Sexual

### RESUMEN

**Antecedentes:** La pandemia ha afectado al bienestar psicológico y a la sexualidad de la población, especialmente entre grupos vulnerables como los hombres de una minoría sexual. **Método:** En España, un total de 320 hombres heterosexuales y 151 hombres de minorías sexuales, de entre 18 y 60 años, respondieron un cuestionario online ad hoc sobre comportamiento sexual durante el confinamiento. **Resultados:** Durante el confinamiento, respecto a los hombres heterosexuales, los hombres de minorías sexuales se masturbaron más, realizaron más actividades sexuales en línea y tuvieron más sexo con no convivientes. En cambio, los hombres heterosexuales tuvieron más relaciones sexuales con su pareja. El hecho de vivir en pareja durante el confinamiento fue predictor de una mejoría de la vida sexual, sobre todo para los hombres heterosexuales. Además, el impacto emocional del confinamiento fue predictor de un empeoramiento de la vida sexual sin distinción por orientación sexual. **Conclusiones:** En futuras intervenciones habría que tener en cuenta que la vida sexual de los hombres está mediada por el impacto emocional del momento, especialmente entre los hombres de minorías sexuales, ya que su calidad de vida sexual muestra menor relación con algunas de las variables protectoras estudiadas (vivir en pareja).

#### Palabras clave:

COVID-19  
Confinamiento  
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The sudden pandemic-imposed change in habits and routines affected people's psychological well-being (Ballester-Arnal & Gil-Llario, 2020; Sandín et al., 2020; Suso-Ribera & Martín-Brufau, 2020), especially among those who belong to vulnerable groups such as sexual minority men, who had already been shown to have worse mental health than heterosexual men before lockdown (Cohen et al., 2016; Plöderl & Tremblay, 2015; Ross et al., 2018; Semlyen et al., 2016).

Due to the lockdown, social distancing, and other restrictions associated with COVID-19, sexuality was one of the most affected areas. Decreases in the frequency of sexual activities and sex opportunities were observed in studies by Sanchez et al. (2020) and Shilo and Mor (2020) on American and Israeli men who have sex with other men; and in the Australian gay and bisexual men evaluated in the study by Hammoud et al. (2020), most of whom indicated that having sex during the COVID-19 pandemic was "too risky." In contrast, in a study in the United States, Stephenson et al. (2021) observed an average increase of 2.3 sexual partners between sexual minority men compared to the period before the lockdown. Another study with sexual minority men from the United States (Harkness et al., 2021) found that men who live with their partners increased their sexual frequency. However, single men reduced the number of sexual partners.

Overall, the frequency of sexual intercourse decreased among sexual minority men, leading to an increase in other sexual behaviors without direct contact. For example, several studies found that masturbation, the use of pornography, dating apps, and cybersex increased during the lockdown among sexual minority men from different countries (Harkness et al., 2021; McKay et al., 2023; Shilo & Mor, 2020). At the same time, in comparison to heterosexuals, more sexual minority men incorporated new sexual activities during the lockdown, such as sexting, watching pornography, or having cybersex (Lehmiller et al., 2021).

Other studies have focused on other sexual aspects. For example, a study with German heterosexual, gay, and bisexual men (Mumm et al., 2021) found an increase in the level of sexual arousal and of satisfaction with the frequency of sexual contact during the lockdown. However, different experiences have been observed depending on sexual orientation. For example, heterosexual and gay men presented an increment of the capability to enjoy sexual intercourse or masturbation during the lockdown, but no bisexual men. This trend could be explained by the low number of bisexual men with a partner in that study. As affirmed by Mumm et al. (2021), having a stable partner is associated with sexual satisfaction. This study investigated the differences before and during the lockdown in several sexual orientations of men. However, it did not analyze the differences among sexual orientations. An investigation that analyzed this aspect was the one carried out by Ko et al. (2020) in Taiwan. The authors found that being a man, belonging to a sexual minority, and having higher levels of anxiety were associated with a decrease in the frequency and satisfaction levels of sexual activity during the pandemic.

As noted in the study by Ko et al. (2020), emotional impact may be a factor that is influencing sexual experiences during the pandemic. Similarly, Ballester-Arnal et al. (2021) found that the Spanish population with elevated levels of stress or fatigue during the lockdown showed a worsening of their sexual life.

This emotional impact may be a relevant factor in the Spanish context since, during the first months of the pandemic, Spain was one of the countries with the most confirmed cases of COVID-19 and deceased people in the world (Spanish Ministry of Health, Consumer Affairs and Social Welfare, 2020).

Given that sexual minority people have shown elevated levels of anxiety, depression, and stress during the lockdown (Barrientos et al., 2021; Gato et al., 2021; Gonzales et al., 2020), it is necessary to include a variable on emotional impact in the study of the sexual life of men of different sexual orientation. However, in Spain, few studies have addressed sexual life during the lockdown: two in the general population (Ballester-Arnal et al., 2021; Rodríguez Domínguez et al., 2021) and another in an adolescent population (Nebot-Garcia et al., 2020). However, no publication has focused on the male population and analyzed the differences by sexual orientation.

Therefore, this study aims to broadly analyze the differences between Spanish heterosexual men and sexual minority men in their sexual life during the COVID-19 lockdown and how the emotional impact and other characteristics of the lockdown have affected their sexual life.

To guide our analysis, we have followed two research questions: (1) Have there been differences in the sexual life of heterosexual and sexual minority men during the lockdown by COVID-19? and (2) What factors predict an improvement or a worsening of men's sexual life during lockdown by COVID-19? Accordingly, two hypotheses were formulated and tested: (1) Sexual minority men will have suffered greater worsening of their sex lives during the pandemic, and (2) Emotional impact and not living with a partner during lockdown will be predictors of that worsening.

## Method

### Participants

The sample of participants consisted of 471 Spanish men aged between 18 and 60, with the average age being 33.1 ( $SD = 10.8$ ). As regards sexual orientation, 67.9% self-identified as heterosexual, 21.2% as gay, 8.7% as bisexual, and 2.1% as pansexual. Regarding their relationship status, 41% were single, 32.9% had a regular partner, 20.8% were married or in a de facto relationship, 4.2% were separated or divorced, and 1.1% were widowers.

### Instruments

A validated questionnaire assessing the impact that COVID-19 lockdown has had on sexuality does not yet exist. For this reason, three sexuality experts, based on their clinical experience, created a 59-items questionnaire to assess changes in sexual behavior during the COVID-19 lockdown. For this research, some items about specific sexual behaviors (such as sexual fantasies or sexual abuse) were omitted. Only 17 items about general sexual behaviors were included:

#### *Physical and Social Context During Lockdown*

We assessed whether the participants were alone or accompanied during the lockdown, the number of people they

were living with and whether they were the people they usually lived with. Another question evaluated whether they had privacy in their home and safe areas where they could engage in sexual activity without being disturbed.

### **Sexual Desire**

The intensity of sex drive or desire during the lockdown was evaluated using a Likert-type item with seven response options (from “Much less intense than before” to “Much more intense than before”).

### **Overall Sexual Frequency**

A Likert-type item assessed the general frequency of sexual activity during the lockdown compared to their previous situation, using a scale of seven response options ranging from “Much less frequently than before” to “Much more frequently than before.”

### **Overall Impact of Lockdown on Sexual Life**

One item explored the overall impact that lockdown had on sex life. The three options it provided were: “It has improved my sex life,” “It has not altered my sex life,” or “It has worsened my sex life.”

### **Type of Sexual Activity, Satisfaction, and Time Invested**

A multiple-choice question evaluated the type of sexual behaviors performed during the lockdown: “traditional masturbation,” “masturbation using sex toys,” “sex with a partner,” “sex with a male housemate,” “sex with a female housemate,” “sex with another person skipping the lockdown,” “online sexual activity,” and “other.”

If participants reported having masturbated, one additional item appeared to evaluate satisfaction with masturbation (from “Much less satisfactory than before” to “Much more satisfactory than before”).

Whether participants had had sex with their partner, with their housemate, or had broken quarantine to have sex, a seven-choice ordinal response scale (from “Much less satisfactory than before” to “Much more satisfactory than before”) was used to discover how satisfactory their sexual encounters were during the lockdown.

If participants reported engaging in online sexual activities during the lockdown, two additional items evaluated how many minutes they spent in each sexual activity before and during the lockdown.

### **Mood and Emotional Impact**

Five Likert-type items evaluated participants’ average level of anxiety, depression, boredom, and stress during the lockdown and the extent to which they felt the lockdown situation became unbearable. The response options were: “Not at all,” “Somewhat,” “Mostly,” and “A lot.”

### **Procedure**

To collect responses for this descriptive research, an advertisement was posted on online social networks (Facebook, Twitter, Instagram, WhatsApp, and Telegram) calling for participation in an evaluation of sexual behavior during the COVID-19 lockdown. The call for participants was open from April 3, 2020, until May 2, 2020. Prior to answering the online questionnaire, participants were shown a screen where they were informed of the anonymous, voluntary, and confidential nature of the research. Their informed consent was then requested and attained. The research was authorized by the Ethical Committee of the Universitat Jaume I de Castelló (Spain). Furthermore, the ethical principles of the Declaration of Helsinki were followed at all times.

A total of 1632 completed questionnaires were obtained by convenience sampling (2562 were only partially completed and because of that, not used). We selected 485 people who met the inclusion criteria of being a man ( $n = 549$ ), being over 18 years old ( $n = 543$ ), and living in Spain ( $n = 485$ ). It was noted that there was a large age disparity in contributors over 60 years old, so the age of participants was limited to 60 years ( $n = 14$ ), as the inclusion of such a heterogeneous age group could distort the results. Of the total 471 remaining participants, 320 were heterosexual men (HM) and 151 were sexual minority men (SMM).

### **Data Analysis**

Statistical analyses were performed with the SPSS statistical package (version 27.0). The percentages of categorical variables were calculated both for the total sample and separately for each sexual orientation group. Differences based on sexual orientation were analyzed using the Chi-square test and Cramer’s V was used to calculate the effect size. The Wilcoxon test was used to evaluate percentages that had been compared in related samples (before and during lockdown).

In addition, to know whether living with a partner during lockdown was affecting sexual desire or sexual frequency, and to determine whether there were differences based on sexual orientation, two ANCOVAs were conducted. The dependent variables were sexual desire and overall sexual frequency. The independent variables were sexual orientation, having lived with a partner during lockdown (covariance), and the interaction between the two variables.

For the mood variables, a sum of the total emotional impact was calculated. The score ranged from “0 - *Not at all*” to “3 - *A lot*”, so the total emotional impact ranged from 0 to 15. Student’s t-test was used to calculate means and differences by sexual orientation. The effect size was calculated with Cohen’s  $d$  obtained using the G\*Power program (Faul et al., 2007, 2009).

Finally, to predict the variables that led to an improvement or deterioration in participants’ sex lives during the COVID-19 lockdown, a multinomial logistic regression was performed using the enter method. The dependent variable was the impact on participants’ sex life, i.e., whether it had improved, deteriorated, or not changed at all. There were seven independent variables. First, two sociodemographic variables: sexual orientation and age. Sexual orientation was our main study variable, and age had

to be considered because of the wide range. Second, the context of lockdown has shown a relationship with sexual behavior (Lehmiller et al., 2021), so we included two related variables: living with a partner during lockdown and privacy at home during the lockdown. Third, emotional impact may be a factor influencing sexual experiences during the pandemic (Ko et al., 2020), so we include total emotional impact as a variable. Finally, we wanted to know whether sexual orientation was related to the effect that the context of lockdown has on sexual life, so we included two interactions: “Being heterosexual\*Living with a partner” and “Being heterosexual\*Privacy at home.”

**Results**

**Differences Between Heterosexual and Sexual Minority Men**

*Physical and Social Context During Lockdown*

As shown in Table 1, most of the men evaluated (84.9%) were accompanied during the months of the lockdown, with HM being the most accompanied, with statistically significant differences with respect to SMM. The people they lived with were mainly their father/mother (53.8%), followed by their partner (40.8%), their siblings (28.2%), or their children (21.3%). Compared to HM, SMM were statistically more likely to live with their brother/sister, grandfather/grandmother, or a housemate. In contrast, HM were statistically more likely to live with their partner or children. There were no statistically significant differences in the other variables. In the vast majority of cases (89.3%), the people with whom the participants spent the lockdown were the same as those with whom they previously lived, being the HM the ones that showed less changes, with statistically significant differences with respect to SMM. Lastly, 79.8% of the total sample indicated that, within the place where they spent the lockdown, there were locations where they could attain a certain level of privacy, with no statistical differences based on sexual orientation.

**Table 1**  
*Differences Between HM and SMM in Physical and Social Context During Lockdown*

	Total (n = 471) %	HM (n = 320) %	SMM (n = 151) %	$\chi^2$	p	V
Social context in which the lockdown occurred						
Alone	15.1	12.5	20.5	5.16	.023	.10
Accompanied	84.9	87.5	79.5			
If accompanied, with whom?						
Father/mother	53.8	56.8	46.7	3.46	.063	.09
Brother/sister	28.2	25.4	35	3.85	.049	.09
Grandfather/grandmother	3	1.8	5.8	4.72	.030	.10
Uncle/aunt	0.8	1.1	0	1.29	.255	.05
Partner	40.8	46.8	26.7	14.08	<.001	.18
Son/daughter	21.3	28.6	4.2	29.89	<.001	.27
Father/mother in law	2	2.1	1.7	0.09	.755	.01
Female/male friend	3	2.5	4.2	0.80	.371	.04
Female/male housemate	8.3	6.1	13.3	5.85	.016	.12
Another person	4	3.2	5.8	1.50	.221	.06
Lockdown with people who usually cohabit	89.3	91.8	83.3	6.25	.012	.12
Private places at home	79.8	81.4	75.8	1.62	.202	.06

Note: HM = Heterosexual Men; SMM = Sexual Minority Men.

**Sexual Desire**

Regarding sexual desire, 31.4% of the evaluated men reported that their sexual desire was almost the same as before the lockdown. However, 39.5% stated that their sexual desire had increased during the lockdown, and 29.1% reported having less desire (see Table 2), with no significant differences according to sexual orientation.

Through an ANCOVA (see Table 3), it was observed that, when controlling for the effect of living with a partner during lockdown on sexual desire, the differences by sexual orientation remained non-significant. Furthermore, the interaction of sexual orientation and living with a partner is not significant, indicating that the effect of living with a partner on sexual desire does not differ between sexual orientations.

**Overall Sexual Frequency**

Some 30.1% of the participants maintained the same frequency of sexual activity. However, the frequency was lower for 31% of the sample and higher for 38.9%. This variable did not show significant differences according to sexual orientation (see Table 2).

As can be seen in Table 4, differences by sexual orientation are not significant when controlling for the effect of living with a partner during confinement on sexual frequency. Furthermore, since the interaction of sexual orientation and living with a partner is not significant, the effect of living with a partner on sexual frequency does not differ between sexual orientations.

**Overall Impact of Lockdown on Sexual Life**

Slightly more than half of the participants (53.3%) stated that their sex life had not changed. However, 10.4% of the men said that their sex life had improved and 36.3% reported that it had gotten worse. Differences based on sexual orientation were not statistically significant (see Table 2).

**Table 2**  
*Differences Between HM and SMM in Sexual Desire, Overall Sexual Frequency, and Overall Impact of Lockdown on Sexual Life*

	Total (n = 471)	HM (n = 320)	SMM (n = 151)	$\chi^2$	p	V
	%	%	%			
Sexual desire during lockdown						
Much less	6.4	6.6	6	5.20	.518	.11
Considerably less	7.6	7.2	8.6			
Slightly less	15.1	14.4	16.6			
About the same	31.4	34.1	25.8			
Slightly more	21	21.3	20.5			
Considerably more	13	11.3	16.6			
Much more	5.5	5.3	6			
Overall sexual frequency during lockdown						
Much less	7.2	8.1	5.3	11.71	.069	.16
Considerably less	8.3	9.1	6.6			
Slightly less	15.5	15	16.6			
About the same	30.1	33.4	23.2			
Slightly more	25.7	22.2	33.1			
Considerably more	10.2	9.1	12.6			
Much more	3	3.1	2.6			
Overall impact of lockdown on sexual life						
Sex life has improved	10.4	10.9	9.3	0.32	.853	.03
Sex life has not altered	53.3	52.8	54.3			
Sex life has worsened	36.3	36.3	36.4			

Note: HM = Heterosexual Men; SMM = Sexual Minority Men.

**Table 3**  
*Analysis of Covariance of Sexual Orientation and Living with a Partner on Sexual Desire During Lockdown*

	Type III Sum of Squares	df	Mean Square	F	p
Corrected Model	33.66	3	11.22	5.14	.002
Intercept	241.58	1	241.58	110.70	<.001
Sexual orientation	0.01	1	0.01	0.01	.957
Living with a partner	24.485	1	24.485	11.22	.001
Sexual orientation*Living with a partner	0.01	1	0.01	0.01	.990
Error	1019.09	467	2.18		
Total	9126.00	471			
Corrected total	1052.75	470			

Note: Adjusted R Squared = .026

### *Types of Sexual Activity, Satisfaction, and Time Invested*

The most performed sexual activities, among the total sample, were masturbation without using sex toys (80%), online sexual activities (43.9%), and sexual relations with a partner (30.6%). It is also noteworthy that 3.8% broke quarantine to have sexual relations with another person (see Table 5). SMM reported higher percentages for masturbation without using sex toys, masturbation using sex toys, sex with another person skipping the lockdown, and online sexual activity, with statistically significant differences in all four variables. A moderate effect size was obtained for masturbation with sex toys and online sexual

activity, and a weak effect size was observed for masturbation without using sex toys and sex with another person skipping the lockdown. On the other hand, HM reported statistically higher percentages for sex with a partner, with a weak effect size.

**Table 4**  
*Analysis of Covariance of Sexual Orientation and Living with a Partner on Sexual Frequency During Lockdown*

	Type III Sum of Squares	df	Mean Square	F	p
Corrected Model	22.24	3	7.41	3.64	.013
Intercept	265.03	1	265.03	130.05	<.001
Sexual orientation	0.26	1	.26	.13	.720
Living with a partner	13.18	1	13.18	6.47	.011
Sexual orientation*Living with a partner	1.13	1	1.13	.56	.457
Error	951.68	467	2.04		
Total	8558.00	471			
Corrected total	973.92	470			

Note: Adjusted R Squared = .017

In terms of masturbatory practices, sexual intercourse, and online sexual activities, we explored whether there had been any change compared to before the lockdown. Regarding masturbation, a little more than half of the evaluated men (53.3%) considered their masturbation to be as satisfactory as before, while 30% stated that it was less satisfactory and 16.7% indicated that it was more satisfactory. This variable did not show statistically significant differences according to sexual orientation (see Table 5).

In terms of sexual relations, slightly more than half the participants (54.4%) reported feeling the same level of satisfaction with sexual intercourse, while 21.8% were less satisfied and 22.8% were more satisfied. This variable did not show statistically significant differences based on sexual orientation (see Table 5).

Lastly, those who engaged in online sexual activities reported spending significantly more time per session. Among HM, the mean before the lockdown was 23.8 minutes (*SD* = 24.7) and during the lockdown was 31.4 minutes (*SD* = 27.1) ( $t = -2.55, p = .012, d = .29$ ). Among SMM, the mean increased from 30.9 minutes (*SD* = 34.1) to 44.5 minutes (*SD* = 44.6) ( $t = -4.37, p < .001, d = .37$ ).

**Mood and Emotional Impact**

As can be seen in Table 6, 78.1% of the evaluated men had felt some level of anxiety during the lockdown, 60.3% had felt depression, 80.3% boredom, 75.4% stress, and 72.6% had felt that the lockdown had been unbearable. In comparison with HM, SMM showed higher percentages in stress, with statistically significant differences. However, in the total emotional impact, no differences were obtained in sexual orientation.

**Predictive Variables of Better or Worse Sex Life as a Consequence of COVID-19**

To predict which variables affected the improvement or worsening of participants' sex lives during the COVID-19 lockdown, multinomial logistic regression was carried out. The dependent variable had three levels and the subjects were asked to report whether their sex life had improved, worsened, or not changed at all. The option "lockdown has not altered my sex life" was used as the reference category. Seven variables were included in these analyses: sexual orientation, age, living with a partner during the lockdown, privacy at home, emotional impact, and two interactions ("Being heterosexual\*Living with a partner" and "Being heterosexual\*Privacy at home").

The model was statistically significant ( $\chi^2 = 85.26; df = 14; p < .001$ ) and presented a good fit overall ( $\chi^2 = 772.62; df = 798; p = .734$ ). As seen in Table 7, just the interaction "Being heterosexual\*Living with a partner" was statistically significant as improving men's sex lives. This means that living with a partner improves the sex life of HM more than SMM. On the other hand, having a greater emotional impact worsened men's sex lives, with no differences according to sexual orientation.

**Table 5**  
*Differences Between HM and SMM in Sexual Activities and Related Satisfaction*

	Total (n = 471)	HM (n = 320)	SMM (n = 151)	$\chi^2$	p	V
	%	%	%			
<b>Behaviors developed during the lockdown</b>						
Traditional masturbation	80	76.6	87.4	7.56	.006	.13
Masturbation using sex toys	11	5.6	22.5	29.80	< .001	.25
Sex with a partner	30.6	35.3	20.5	10.56	.001	.15
Sex with a male housemate	0.2	0	0.7	2.12	.145	.07
Sex with a female housemate	0.2	0	0.7	2.12	.145	.07
Sex with another person skipping the lockdown	3.8	2.5	6.6	4.74	.029	.10
Online sexual activity	43.9	35.3	62.3	30.22	< .001	.25
Other	0.8	0.9	0.7	0.09	.761	.01
None	2.3	3.4	0	5.32	.021	.11
<b>Satisfaction of masturbation</b>						
Much less	6	6.5	5.1	4.33	.633	.11
Considerably less	8.6	7.7	10.3			
Slightly less	15.4	14.2	17.6			
About the same	53.3	55.9	48.5			
Slightly more	12	10.9	14			
Considerably more	4.2	4	4.4			
Much more	0.5	0.8	0			
<b>Satisfaction of sexual relationships</b>						
Much less	3.8	4.2	2.6	3.84	.698	.16
Considerably less	3.8	2.5	7.9			
Slightly less	14.2	18.4	15.2			
About the same	54.4	55	52.6			
Slightly more	9.5	10.8	5.3			
Considerably more	8.9	9.2	7.9			
Much more	4.4	4.2	5.3			

Note: HM = Heterosexual Men; SMM = Sexual Minority Men.

**Table 6**  
Differences Between HM and SMM in Emotional Impact During the Lockdown

	Total (n = 471)	HM (n = 320)	SMM (n = 151)	$\chi^2$	p	V
	%	%	%			
<b>Anxiety</b>						
Not at all	21.9	25	15.2	7.46	.059	.13
Somewhat	48	46.9	50.3			
Mostly	24.6	22.2	29.8			
A lot	5.5	5.9	4.6			
<b>Depression</b>						
Not at all	39.7	41.3	36.4	2.95	.399	.08
Somewhat	41	40	43			
Mostly	15.3	15.6	14.6			
A lot	4	3.1	6			
<b>Boredom</b>						
Not at all	19.7	18.1	23.2	2.92	.405	.08
Somewhat	39.7	41.6	35.8			
Mostly	27.2	27.8	25.8			
A lot	13.4	12.5	15.2			
<b>Stress</b>						
Not at all	24.6	26.6	20.5	10.38	.016	.15
Somewhat	44.8	47.5	39.1			
Mostly	21.4	17.8	29.1			
A lot	9.1	8.1	11.3			
<b>Unbearable</b>						
Not at all	27.4	28.4	25.2	4.92	.178	.10
Somewhat	44.8	46.6	41.1			
Mostly	18.3	15.6	23.8			
A lot	9.6	9.4	9.9			
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>T</i>	<i>p</i>	<i>D</i>
Total emotional impact (0-15)	5.6 (3.5)	5.4 (3.4)	5.9 (3.6)	-1.72	.086	.17

Note: HM = Heterosexual Men; SMM = Sexual Minority Men.

**Table 7**  
Parameter Estimates of the Impact on Sex Life of Men

	B	SE	Wald	df	p	OR	95% CI OR	
							Lower CI	Upper CI
<b>Improvement of the sex life</b>								
Intercept	-2.11	1.22	2.98	1	.084			
Being heterosexual	-0.34	1.25	0.07	1	.788	0.72	0.06	8.23
Living with a partner	0.34	0.66	0.26	1	.608	1.40	0.39	5.09
Having privacy	1.06	1.08	0.96	1	.327	2.89	0.35	24.18
Age	-0.03	0.02	3.06	1	.080	0.97	0.94	1.00
Emotional impact	0.06	0.05	1.11	1	.293	1.06	0.95	1.17
Being heterosexual*Living with a partner	1.68	0.80	4.41	1	.036	5.37	1.12	25.74
Being heterosexual*Having privacy	-0.56	1.23	0.20	1	.651	0.57	0.05	6.41
<b>Worsening of the sex life</b>								
Intercept	-0.68	0.56	1.49	1	.223			
Being heterosexual	-0.26	0.54	0.23	1	.629	0.77	0.27	2.20
Living with a partner	-0.87	0.50	3.01	1	.083	0.42	0.16	1.12
Having privacy	-0.49	0.46	1.14	1	.287	0.61	0.25	1.51
Age	-0.01	0.01	0.99	1	.320	0.99	0.97	1.01
Emotional impact	0.19	0.03	34.11	1	<.001	1.21	1.13	1.29
Being heterosexual*Living with a partner	0.32	0.57	0.32	1	.571	1.38	0.45	4.24
Being heterosexual*Having privacy	0.55	0.57	0.90	1	.342	1.73	0.56	5.31

Note: Pseudo R-square: Cox and Snell = .166; Nagelkerke = .195; McFadden = .096.

## Discussion

The COVID-19 pandemic has radically changed our lives. COVID-19 not only threatens life and health, but it can also change people's moods, the way they relate to each other, or the way they express affection and sexuality (Ballester-Arnal et al., 2021). One of the groups most vulnerable to this emotional impact are sexual minority men. Therefore, this study aimed to compare the sexual life of HM and SMM during the COVID-19 lockdown in Spain, one of the countries most affected by COVID-19 during the first months (Spanish Ministry of Health, Consumer Affairs and Social Welfare, 2020).

Very few studies have addressed differences by sexual orientation in men's sex lives during lockdown (Ko et al. 2020; Mumm et al., 2021). However, none of them took into account the characteristics of the lockdown, and only the study by Ko et al. (2020) evaluated the influence of emotional impact. Therefore, our study is the first to make a comparison between sexual minority and heterosexual men whilst also taking into account the emotional impact of lockdown, and the characteristics of both the sample and the lockdown situation.

In this study, some statistically significant differences by sexual orientation were observed in the people with whom they lived the lockdown. More SMM had lived the lockdown with their families of origin (brother/sisters, grandfather/grandmother) and housemates, while more HM have lived the lockdown with their partners and children. In addition, the results showed that the majority of the evaluated men had enough privacy to be able to engage in sexual activities in the place where they were confined, with no significant differences based on sexual orientation.

In terms of sexual desire, in a study conducted among a Chinese population aged 18-45 years, it was observed that 18% of HM had experienced an increase in sexual desire during the lockdown and 27% a decrease (Li et al., 2020). In a research carried out among the general population of Italy, it was observed that 79.2% of men had shown a reduction in sexual desire during the lockdown and 20.8% reported maintenance or increase (Cito et al., 2021). These sets of data differ somewhat from those obtained in our study, which showed that 39.5% of the men evaluated reported an increase in their sexual desire and 29.1% reported a reduction. This trend was observed in both HM and SMM, with no statistically significant differences between them. These differences may be due to differences in the characteristics of the sample, seeing as, in the study by Li et al. (2020), 50% of the men were married, and in the study by Cito et al. (2021), 96.8% of the participants had a stable partner. In contrast, in our study, only 20.8% were married and only 32.9% had a stable partner. Several studies have shown that relationship status is a factor to be taken into account when assessing sexual desire during the lockdown, for example in Karsiyakali et al. (2021). In another study, conducted with Chinese persons aged 16-35 years, it was observed that those in exclusive relationships reported a greater deterioration in their sexual desire during lockdown than those without a partner.

Nearly three-quarters of the subjects in our study experienced changes in the overall frequency of all types of activity, especially increases in frequency, although no differences were observed based on sexual orientation. A study carried out in China with people aged between 18 and 45 found that 17% of HM showed

an increase in the frequency of their sexual activities, compared to 32% who reported a decrease (Li et al., 2020). Again, sample characteristics may have been the explanation for this, as the sample in this Chinese study was composed of 50% married men, compared to 20.8% in our sample.

Overall, our results show that slightly more than half of the men evaluated do not experience a change in the quality of their sexual life. However, a worsening trend is observed. But these results showed no significant differences according to sexual orientation, contrary to what was expected in hypothesis 1.

As regards the types of sexual activity that took place during the lockdown, HM showed statistically more sexual intercourse with their partner during the lockdown than SMM. This trend could be explained by the fact that more HM had lived the lockdown with their partner compared to SMM. On the other hand, it is noteworthy that a percentage of men broke quarantine to have sex with a person with whom they were not living, being statistically more frequent among SMM than HM. This behavior had already been observed in men who have sex with other men in a study conducted in Israel (Shilo & Mor, 2020), as well as in another study performed in Australia (Hammoud et al., 2020). In addition, compared to their HM peers, SMM masturbated more during the lockdown, both with and without sex toys, and they were the ones who joined in more online sexual activities. These differences with the HM group had already been observed in other studies before the COVID-19 pandemic. For example, in Dodge et al. (2016) or Downing et al. (2017). However, if time spent in online sexual activities before the lockdown is taken into account and compared to that reported during it, statistically significant changes are observed, with an increase for both HM and SMM. Similar results were obtained in a study conducted in Israel with men who have sex with men. It was found that during lockdown they spent more time on dating apps, practiced more sexting, and consumed more pornography (Shilo & Mor, 2020). In the study of Sanchez et al. (2020), which was conducted with a sample of men who have sex with men in the United States, it was observed that the majority had seen a reduction in their number of sexual partners and that their use of dating and flirting applications had remained roughly the same during the lockdown. In another study conducted in the United States with gay and bisexual youth aged 14 to 17, it was observed that, during the months of the lockdown, the frequency of their masturbation and their consumption of pornography had increased. In contrast, the number of face-to-face encounters with sexual partners decreased, while sexting occurred at about the same frequency (Nelson et al., 2020). Although there are differences between the studies, probably due to the characteristics of the samples, there is a general trend towards an increase in masturbation and online sexual activities, accompanied by a decrease in actual sexual intercourse.

In terms of sexual satisfaction, a study carried out in the general population of Taiwan with people aged between 20 and 74 found that being male and not heterosexual was associated with lower sexual satisfaction during lockdown (Ko et al., 2020). However, this study did not take into account either the relationship status of those in the sample or the characteristics of their lockdown. In our study, slightly less than half of the men evaluated showed changes in their satisfaction with masturbation and sexual intercourse: satisfaction with masturbation mainly decreased and satisfaction with sexual intercourse increased and

decreased almost equally. In none of these variables were the differences based on sexual orientation.

In addition, both HM and SMM showed a statistically significant increase in the time they spent on online sexual activities. This trend had already been observed in previous studies. Lehmillier et al. (2021) observed an increase in sexting, and Sanchez et al. (2020) found that most SMM had increased use of dating apps to contact other men online.

Previous studies had observed that sexual minorities showed worse mental health than the heterosexual population during lockdown (Duarte & Pereira, 2021; Liu et al., 2022; Soria & Horgos, 2021). However, in the present study, sexual minorities only presented higher levels of stress. It should be noted that these differences based on sexual orientation were already observed before the COVID-19 lockdown (Cohen et al., 2016; Plöderl & Tremblay, 2015; Ross et al., 2018; Semlyen et al., 2016), so we cannot say that the lockdown had a more intense impact on the mental health of sexual minorities.

Lastly, this study also explored the variables that may predict the worsening or improvement in the sex lives of heterosexual and sexual minority men during the lockdown. These results partially confirm the predictions of hypothesis 2. On the one hand, the emotional impact explained part of the worsening of the sex lives of heterosexual and sexual minority men. Previous studies had already determined that mood affects sexuality (Bancroft et al., 2003; Kashdan et al., 2011). On the other hand, living with a partner during the lockdown was more associated with improved sex lives of heterosexual men compared to sexual minority men. This protective effect of living with a partner had already been observed in a previous study (Karsiyakali et al., 2021), in which married people or people with a stable sexual partner during lockdown presented a lower decrease in the frequency of sexual relations compared to divorced people, single people, or people without a stable sexual partner. It would be necessary to explore why sexual minority men benefit less from living with a partner during lockdown. These results could be explained by the fact that, among gay and bisexual men, having lived with a non-romantic roommate or friend was also a predictor of having had sex during lockdown (Griffin et al., 2022). It seems that gay and bisexual men do not need to live with a partner to the same extent as heterosexual men to have sexual relations.

Despite all the contributions made by this study, it also has some limitations. First of all, we have a modest sample, although sufficient to be able to better understand the sexual life of men according to their sexual orientation. In addition, different variables related to the participants' lockdown situation and the characteristics of the sample were explored and considered. However, both the wide range of ages and the differences due to sexual orientation in the characteristics of lockdown could be influencing some results. These variables should be taken into account in future studies. On the other hand, we must be careful when generalizing the results since the sample was obtained through social networks (convenience sampling). Not everyone has social networks, so it cannot be considered representative of the entire population. Second, the data were self-reported and sometimes retrospective, so there may potentially be some memory and social desirability biases. In future studies, it would be convenient to include new variables that may influence the sex life of the participants, such as the time at which they answered

the survey and how many days they had spent in lockdown so far. Also, to make the appropriate comparisons and attribute the results to the effects of the lockdown, it would have been interesting to have answers from before the lockdown for all variables. Lastly, some results may simply be reflecting the overall effects of the pandemic and not just the lockdown itself.

Several studies have highlighted the need to take into account gender and sexual minorities in these times of the pandemic, a time when discrimination, inequality, and the difficulty in accessing healthcare have been exacerbated for these most vulnerable populations (Gibb et al., 2020; Kline, 2020). Based on our results, it can be said that the emotional impact affects the sexual life of heterosexual men and sexual minority men in similar ways. However, characteristics of lockdown related to improvement in sexual life, such as living with a partner, have been more significant in heterosexual men. It seems that the sexual life of sexual minority men is more linked to emotional impact and mood than to other variables. The population with a minority sexual orientation typically shows poorer mental health due to the discrimination and stigma they experience (Meyer, 2003). Therefore, it becomes even more necessary to continue investigating what other protective variables could be useful to make up for the effects that lockdown has had on the sexuality of SMM, to have an impact on improving their quality of life.

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