



# Low Psychological Well-being in Men Who Have Sex with Men (MSM) During the Shelter-in-Place Orders to Prevent the COVID-19 Spread: Results from a Nationwide Study

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## Abstract

**Introduction** Little is known about how sheltering in place to contain the spread of COVID-19 over extended periods affects individuals' psychological well-being. This study's objective was to analyze the factors associated with MSM's (men who have sex with men) low psychological well-being in the COVID-19 pandemic context.

**Method** This cross-sectional study was conducted online across Brazil (26 states and federal district) in April and May 2020. The participants were recruited using snowball sampling and Facebook posts. Data were collected using social media and MSM dating apps. We estimated the prevalence, crude prevalence ratio (PR), and the respective confidence intervals (CI95%).

**Results** The prevalence of low psychological well-being found in the sample was 7.9%. Associated factors were belonging to the youngest group (PR 2.76; CI95% 1.90–4.01), having polyamorous relationships (PR 2.78; CI95% 1.51–5.11), not complying with social isolation measures (PR 6.27; CI95% 4.42–8.87), not using the social media to find partners (PR 1.63; CI95% 1.06–2.53), having multiple sexual partners (PR 1.80; CI95% 1.04–3.11), having reduced the number of partners (PR 2.67; CI95% 1.44–4.95), and group sex (PR 1.82; CI95% 1.23–2.69)

**Conclusion** The well-being of MSM living in Brazil was negatively affected during the social distancing measures intended to control the spread of COVID-19. The variables that contributed the most to this outcome include social isolation, relationships established with partners, and sexual behavior.

**Policy Implications** Planning and implementing public policies and actions to promote psychological well-being are needed to improve MSM's resilience by adopting safe strategies and behavior.

**Keywords** Psychological well-being · Well-being · Men who have sex with men · Gay man · COVID-19 · SARS-CoV-2

## Introduction

Due to its very nature, few health situations will impact the world in this century as the COVID-19 pandemic has. More than 60 million people had been infected worldwide by the end of November 2020 (WHO, 2020), and its impact is apparent in all countries. The populations' psychosocial health has been significantly affected (Serafini et al., 2020), especially among those who are acutely vulnerable to the virus, such as the homeless, migrants and refugees, the elderly, drug users, and indigenous populations (Xiong et al., 2020). Brazil is currently facing a disheartening situation. It ranks third in the number of COVID-19 cases; by the end of November, Brazil recorded more than 170,000 deaths (Brazil, 2020a).

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The COVID-19 pandemic has affected daily life, imposing changes beyond the health sphere, as social, economic, cultural, and political aspects have experienced impact that is unprecedented in the recent history of epidemics (Chakraborty & Maity, 2020). The large number of people who have been infected and died from infection directly impacts the capacity of health systems, also challenging countries' economies and populations, in general (Araújo, Oliveira & Freitas, 2020). Continuous and prolonged quarantine causes a strain on people's mental health, as it restricts access to essential goods, such as food, medicine, and transportation, among others (Oliveira et al., 2020). Such a context affects the individuals' psychological well-being, significantly decreasing quality of life (Serafini et al., 2020). These problems are heightened by mandatory social isolation measures intended to control the virus' spread. The damage caused to human well-being is undeniable and has drawn the attention of researchers, lawmakers, health authorities, and public managers, who have acted to minimize its impact.

The pandemic's harmful impact, heightened by social isolation, is quite noticeable in the individuals' physical, mental, social, and environmental spheres (Forte, Favieri, Tambelli & Casagrande, 2020). In this context, sexual and gender minorities are subject to greater vulnerability, given the historical inequality they face in terms of health and violence, a conditioning factor (Gibb et al., 2020). That is, these groups are relegated to a marginal position within the society, and, as a consequence, a safety net system and psychosocial support are not always provided or available to them.

Hornet (Greenhalgh, 2020) conducted a global survey among men who have sex with men (MSM), revealing considerable levels of loneliness and depression associated with shelter-in-place measures. The impact of these measures on the individuals' mental health produces considerable impairment in terms of psychological and social well-being throughout the pandemic. The literature has addressed the pandemic's impact on the maintenance of affective and sexual practices, including the establishment of barriers impeding access to health services that are necessary to maintain therapeutic processes and care technologies (Sousa et al., 2020a, b, c; Carvalho et al., 2020; Torres et al., 2020). From this perspective, there is a lack of concrete governmental action directed to MSM during the COVID-19 pandemic. Given this population's context and the repercussions of the novel socio-historical phenomenon caused by the COVID-19 worldwide on the individuals' psychological well-being, this study's objective was to analyze the factors associated with low psychological well-being among MSM living in Brazil during the COVID-19 pandemic.

## Methods

### Study Design

This cross-sectional study addresses data from the "40TENA" project, conducted in all 26 Brazilian states and the Federal District from May to April 2020, when restrictive public health measures, such as social isolation and sheltering-in-place, were in force. Brazilian health agencies instructed the population to shelter at home, avoiding close/personal contact with people outside one's household. Essential activities such as trade and some services were maintained with restrictions. Up to the time of this study, none of the Brazilian states had imposed full lockdown.

### Population, Sample, and Eligibility Criteria

A total of 2646 Brazilian MSM participated in this study. Due to the pandemic, the participants were recruited online using snowball sampling. In this method, the participants themselves are responsible for recruiting other individuals with similar situations via social media. Following the method's criteria, 15 MSM with different characteristics were selected, namely, the state of residence (we chose the most populated state in each of the five Brazilian regions), race (Caucasian/non-Caucasian); age (young, adult, or elderly), and educational level (high school, undergraduate, or graduate studies). These were the first participants and were called "seeds." Each participant received a link to the survey and was instructed to invite other MSM from their social network until a significant sample was obtained. The seeds were identified through two geo-location-based dating applications (Grindr and Hornet) via direct chat with online users. The first individuals available online in each of the two applications and who met the inclusion criteria were included (Queiroz et al., 2019a, 2019b; Sousa et al., 2019).

The researchers also promoted the survey on Facebook, directing it to the MSM population aged from 18 to 60 years old (a Facebook-imposed age restriction), using a fixed post on the official page of the survey (<https://www.facebook.com/taafimdeque/>), accompanied by an electronic link that granted access to a free and informed consent form and the survey's questionnaire. Facebook was used as an additional resource due to its ability to access people located in the countryside, which is absolutely necessary in the case of a continent-spanning country like Brazil. Only individuals who identified themselves as men (cisgender or transgender) and aged 18+ years old were included. Tourists and non-Portuguese speaking individuals were excluded.

## Data Collection Instrument

The instrument used to collect data was developed by this study's authors, considering the research variables and the participants' characterization. It was content validated by a panel of judges specializing in the topic and method. The instrument was divided into four sections with 46 questions. Most were multiple-choice questions, and some were mandatory; without answering those questions, the participant could not proceed with the questionnaire. The questions addressed:

1. Sociodemographic data (age, gender identity, education, sexual orientation, type of relationship, country, state, place of residence);
2. Psychological well-being and coping strategies used during the shelter-in-place orders.

The 5-item World Health Organization Well-Being Index (WHO-5), validated for the Brazilian context (Souza & Hidalgo, 2012), was used to assess psychological well-being. It comprises five items rated on a 5-point Likert scale, with a total score ranging from 0 to 25. WHO-5 was designed to measure psychological well-being for the 2 weeks prior to completing the scale. Scores below 20 indicate the presence of depressive disorder (Souza & Hidalgo, 2012), and scores equal to or lower than 13 indicate impaired well-being (Bech, 2004). Thus, psychological well-being was classified as low ( $\leq 13$  points), moderate (14 to 19 points), or high ( $\geq 20$  points).

3. Sexual practices and activities during the pandemic, i.e., casual sex (Carvalho et al., 2020), sex with the consumption of drugs (Souza et al., 2020a, b)' use of condoms, protection strategies, the strategy used to search for partners, frequency of sexual encounters, and protective measures against COVID-19.
4. Sexual practice and activities before the pandemic (use of HIV pre-exposure prophylaxis and post-exposure prophylaxis; strategies to search for partners; knowledge regarding STIs and testing), were assessed retrospectively.

Adherence to social distance measures was defined as avoiding personal contact with people outside one's household for non-essential activities. "Partial" isolation was considered when an individual had direct and recurrent contact with people outside his/her household, and total isolation when there was no direct contact. The guidelines concerning the presence of signs and symptoms and other clinical variables provided by the Brazilian Ministry of Health were used to define suspect cases of COVID-19 (Brazil, 2020b). For security reasons, the form used to collect data was hosted by a specific site that enabled only one response per IP (Internet protocol).

## Data Analysis

Data Analysis and Statistical Software (STATA), version 12.0 was used for data analysis. Descriptive and inferential statistics were used. Bivariate analysis was performed using the chi-square test, estimating prevalence and crude prevalence ratio (PR), with a 95% confidence interval.

Multivariate analysis was performed using Poisson's regression analysis with robust variation. The outcome variable (psychological well-being) was included in the analysis, along with each of the associated independent variables with  $p$  value  $\leq 0.20$ . The stepwise procedure was used. The sequence in which each term was inserted in the model was determined by a simultaneous analysis of theoretical relevance criteria and statistical significance obtained in the bivariate analysis. Each term was added or removed from the model after identifying the statistical significance ( $p$  value  $< 0.05$ ), stability of the power of association, and Akaike information criterion (AIC), defining the useful subset of terms. All variables with a 5% statistical significance remained in the final model. To determine the best final model, the one with the lowest AIC value was selected.

## Ethical and Legal Aspects

The research project was approved by the Institutional Review Board at the Universidade Nova de Lisboa and the University of São Paulo. All the users signed free and informed consent forms before proceeding with the questionnaire.

## Results

A total of 2646 men who have sex with men participated, 1921 (72.6%) of whom were referred by their partners or friends from other social networks. A plurality of the men presented moderate psychological well-being (47.7%), followed by those with high well-being (44.4%), while a prevalence ratio of 7.9% experienced low well-being. Most were aged from 18 to 29 years old (69.9%), with an average age of 31 years old (min. 18 and max. 60;  $SD \pm 8.4$ ). Most were single (67.2%) and fully complying with shelter-in-place orders (72.1%), with a duration of social isolation between 30 and 45 days (58.1%), and decreased consumption of alcohol (43.1%) (Table 1).

The bivariate analysis of factors associated with psychological well-being showed statistical association with age ( $p < 0.001$ ), relationship status ( $p < 0.001$ ), and social isolation ( $p < 0.001$ ).

**Table 1** Distribution of men according to sociodemographic characteristics, adherence to social isolation measures, sexual behavior, and COVID-19-related characteristics. Brazil, 2020 ( $N=2646$ )

Variables	Number	Percent
<b>Sociodemographic characteristics</b>		
Age group		
18 to 29 years old	1850	69.9
30 years old or older	796	30.1
Relationship status		
Stable relationship	802	30.3
Polyamorous relationship	66	2.5
Single	1778	67.2
<b>Social isolation characteristics</b>		
Social isolation		
Total	1908	72.1
Partial	664	26.1
No	74	2.8
Duration of social isolation ( $N=2586$ )		
< 30 days	483	16.7
30 to 45 days	1504	58.1
> 45 days	599	23.2
Alcohol consumption		
Decreased	1140	43.1
Did not change	974	36.8
Increased	532	20.1
<b>Sexual behavior</b>		
Live with a partner ( $N=2011$ )		
No	1723	85.7
Yes	288	14.3
Use social media to find partners ( $N=2478$ )		
Yes	2164	87.3
No	314	12.7
Frequency of sexual practice		
Did not change	493	18.6
Increased	427	16.2
Decreased	1726	65.2
Number of partners		
None	719	27.2
1	921	34.8
2 or more	1006	38.0
Variation in the number of partners ( $N=2645$ )		
Did not change	1395	52.7
Decreased	921	34.8
Increased	329	12.5
Casual sex		
No	1239	46.8
Yes	1407	53.2
Group sex		
No	2195	83.0
Yes	451	17.0
Chemsex practice		
No	1612	60.9

**Table 1** (continued)

Variables	Number	Percent
Yes	1034	39.1
<b>COVID-19-related characteristics</b>		
Presence of symptoms		
No	1,282	48.4
Yes	1364	51.6
COVID-19 testing		
Yes	218	8.2
No	2428	91.8
Tested positive for COVID-19		
No	2520	95.2
Yes	126	4.8

*COVID-19* coronavirus disease 2019

Being 18 to 29 years old, in a polyamorous relationship, and not complying with shelter-in-place orders, the prevalence of low psychological well-being increased by a multiple of 3, 2, and 7, respectively. Social isolation increased the frequency of low psychological well-being by 47%. Other findings are presented in Table 2.

The variable “type of partner” was excluded from the multivariate analysis because it presented collinearity with relationship status ( $VIF=7.37$ ). The association between the presence of COVID-19 symptoms and testing for COVID-19 was not statistically significant but remained in the model as a confounding adjustment because the model presented a lower AIC.

The following variables were associated with low psychological well-being: being in the youngest age group (PR 2.76; CI95% 1.90–4.01), being in a polyamorous relationship (PR 2.78; CI95% 1.51–5.11), not complying with social isolation measures (PR 6.27; CI95% 4.42–8.87), not using social media to find partners (PR 1.63; CI95% 1.06–2.53), having a higher number of sexual partners (PR 1.80; CI95% 1.04–3.11), having a reduced number of sexual partners (PR 2.67; CI95% 1.44–4.95), and group sex (PR 1.82; CI95% 1.23–2.69) (Table 3).

## Discussion

MSM living in Brazil experienced a lower sense of well-being during the shelter-in-place orders implemented to restrain the spread of COVID-19, as more than half of the participants presented some level of impairment in terms of psychological well-being. The variables that most frequently contributed to this outcome include those related to social isolation/distancing (adherence to social distancing measures and use of social media to find sexual partners during the sheltering-in-place period) and variables

**Table 2** Bivariate analysis between psychological well-being and sociodemographic characteristics, adherence to social isolation, sexual behavior, and COVID-19-related characteristics. Brazil, 2020

Variables	<i>n</i>	<i>P</i> (%)	<i>p</i> value*	PR	CI95%
Sociodemographic characteristics					
Age group					
18 to 29 years old ( <i>N</i> =1849)	183	9.9	<0.001	3.03	2.03–4.5
30 years old or older ( <i>N</i> =796)	26	3.3		1.00	-
Relationship status					
Stable relationship ( <i>N</i> =801)	79	9.9	<0.001	1.00	-
Polyamorous relationship ( <i>N</i> =66)	13	19.7		2.00	1.18–3.39
Single ( <i>N</i> =1778)	117	6.6		0.67	0.51–0.88
Social isolation characteristics					
Social isolation					
Total ( <i>N</i> =1907)	117	6.1	<0.001	1.00	-
Partial ( <i>N</i> =664)	60	9.0		1.47	1.10–2.0
Not complying ( <i>N</i> =74)	32	43.2		7.05	5.15–9.65
Duration of social isolation					
<30 days ( <i>N</i> =483)	38	7.9	0.158	1.00	-
30 to 45 days ( <i>N</i> =1503)	97	6.5		0.82	0.57–1.18
>45 days ( <i>N</i> =599)	30	5.0		0.64	0.40–1.01
Alcohol consumption					
Decreased ( <i>N</i> =1139)	103	9.0	0.148	1.00	-
Did not change ( <i>N</i> =974)	71	7.3		0.81	0.60–1.08
Increased ( <i>N</i> =532)	35	6.6		0.73	0.50–1.05
Social behavior					
Live with a partner					
Yes ( <i>N</i> =288)	31	10.8	0.032	1.00	-
No ( <i>N</i> =1722)	123	7.1		1.51	1.04–2.19
Use social media to find partners					
Yes ( <i>N</i> =2164)	152	7.0	0.009	1.00	-
No ( <i>N</i> =313)	35	11.2		1.59	1.12–2.25
Frequency of sexual practice					
Increased ( <i>N</i> =427)	39	9.1	0.091	1.00	-
Did not change ( <i>N</i> =493)	48	9.7		0.77	0.55–1.09
Decreased ( <i>N</i> =1725)	122	7.1			
Number of partners					
None ( <i>N</i> =719)	38	5.3	0.009	1.00	-
1 ( <i>N</i> =920)	80	8.7		1.64	1.13–2.39
2 or more ( <i>N</i> =1006)	91	9.1		1.71	1.19–2.47
Variation in the number of partners					
Did not change ( <i>N</i> =1394)	134	9.6	0.002	1.00	-
Decreased ( <i>N</i> =921)	59	6.4		1.32	0.77–2.56
Increased ( <i>N</i> =329)	16	4.9		1.98	1.19–3.27
Casual sex					
No ( <i>N</i> =1239)	84	6.8	0.045	1.00	-
Yes ( <i>N</i> =1406)	125	8.9		1.31	1.00–1.71
Group sex					
No ( <i>N</i> =2194)	154	4.0	<0.001	1.00	-
Yes ( <i>N</i> =451)	55	12.2		1.74	1.30–2.32
Chemsex practice					
No ( <i>N</i> =1612)	114	7.1	0.048	1.00	-
Yes ( <i>N</i> =1033)	95	9.2		1.30	1.00–1.69
COVID-19 characteristics					
Presence of symptoms					

**Table 2** (continued)

Variables	<i>n</i>	<i>P</i> (%)	<i>p</i> value*	PR	CI95%
No ( <i>N</i> =1281)	115	9.0	0.047	1.00	-
Yes ( <i>N</i> =1364)	94	6.9		0.77	0.59–0.99
COVID-19 testing					
Yes ( <i>N</i> =218)	8	3.7	0.016	1.00	-
No ( <i>N</i> =2427)	201	8.3		2.26	1.13–4.51
Tested positive for COVID-19					
No ( <i>N</i> =2519)	203	8.1	0.181	1.00	-
Yes ( <i>N</i> =126)	6	4.8		0.59	0.27–1.30

\**p* value obtained with the chi-square test

COVID-19 coronavirus disease 2019, *P* prevalence, *PR* prevalence ratio, *CI95%* confidence interval of 95%

related to adopted sexual behaviors (with a variation in the number of partners, having a casual sexual partner, having a polyamorous relationship, or having group sex during the sheltering-in-place period). The declining indicators of

**Table 3** Multivariate analysis of factors associated with psychological well-being. Brazil, 2020

Variables	PR	CI95%
Sociodemographic characteristics		
Age group		
18 to 29 years old	2.76	1.90–4.01
30 years old or older	1.00	-
Relationship status		
Stable relationship	1.00	-
Polyamorous relationship	2.78	1.51–5.11
Single	0.99	0.64–1.53
Social isolation characteristics		
Social isolation		
Yes	1.00	-
No	6.27	4.42–8.87
Use social media to find partners		
Yes	1.00	-
No	1.63	1.06–2.53
Sexual behavior		
Number of partners		
None	1.00	-
1	1.36	0.82–2.24
2 or more	1.80	1.04–3.11
Variation in the number of partners		
Did not change	1.00	-
Decreased	2.67	1.44–4.95
Increased	2.42	1.47–4.01
Group sex		
No	1.00	-
Yes	1.82	1.23–2.69
AIC	0.4935822	

Model adjusted for the presence of COVID-19 symptoms and COVID-19 testing

*PR* prevalence ratio, *CI95%* confidence interval of 95%

psychological well-being among MSM are worth noting. In a devastating context, such as that of a pandemic, access to psychosocial support networks and the individuals' socio-affective network is considerably weakened and even absent in some instances, potentially intensifying these individuals' vulnerability from the perspective of mental health and social well-being. For instance, the sudden rupture in socio-affective networks caused by the COVID-19 pandemic, not having access to nightlife or leisure activities, not meeting friends and not participating in groups of belonging, not having intimate and sexual encounters, not being able to maintain affective relationships, and the restriction of interactions to a virtual environment or small groups, may be quite challenging.

For this reason, the context of the current pandemic requires we consider the quality or lack of social interactions and how these situations impact the psychological well-being of people as psychological triggers. Factors such as loneliness, change in routine, sense of abandonment, fear, loss of financial stability, or unemployment might be intensified (Schmidt et al., 2020). This context is likely to cause anxiety, decision conflicts, decreased self-esteem and interest in life, suicidal behavior, eating and sleep disorders, and alcohol or drug abuse among MSM (Pedrosa et al., 2020; Leung et al., 2020). These individuals may become involved in risk practices and expose themselves to the SARS-CoV-2 because they are too distressed over the prolonged social distancing measures, miss social interaction with people, or find restricted mobility to be objectionable (Sousa et al., 2020a, c). Additionally, opportunities to find affective and sexual partners decreased during the period of social isolation, with such efforts largely restricted to online platforms and social networks. This may also negatively affect these individuals' psychological well-being and impact their mental health (Sousa et al., 2020a; Carvalho et al., 2020).

In this study, a greater prevalence of low psychological well-being was found among MSM who did not report the use of social media to find partners, revealing that even though social media is considered to be associated with sex,



it may play a protective role in times of social distancing by enabling social interactions, even if remotely. The results from a multi-center study show that 95% of its MSM sample was (totally or partially) complying with social distancing measures, which resulted in a drop in the number of partners and relationships. At the same time, though, there was an increase in online interactions (Sousa et al., 2020b). The study also reports that MSM devised strategies to keep interactions during the social distancing measures, reinforcing this study's findings that interactions, whether to seek or exchange content, are essential for MSM's psychological well-being. The study mentioned above addressed only sexual interactions, though, so inferences concerning other types of relationships are not possible.

Interestingly, having a polyamorous relationship (three people or more) was associated with low psychological well-being. One hypothesis is that polyamorous relationships do not always occur under the same roof, implying that those involved may have to deal with distancing measures; that is, their contact with each other may be limited for lengths of time. Additionally, polyamorous relationships allow new people, outside one's place of shelter and with a possibly different history of exposure, to be included. In the case of physical contact, all those involved are exposed, which results in fear, and decreased psychological well-being. Consensual non-monogamy or polyamorous relationships have become an increasingly accepted affective and sexual experience, which contrasts with monogamous relationship patterns that are usually considered ideal in stable and committed relationships (Costa & Ribeiro-Gonçalves, 2020; Jowett, 2020). This context has been intensified among sexual minorities, including MSM. We believe that the fact these individuals are involved in polyamorous relationships and are currently experiencing the impossibility of maintaining the frequency of affective and sexual encounters during the pandemic (impaired affective and sexual dynamics) are coupled with reduced leisure opportunities usually afforded by these relationships, decrease these men's psychological well-being. One cannot rule out the fact that MSM in polyamorous relationships usually have to live with stigma. This experience may be heightened in a pandemic, considering that exclusion and stigma among LGBT populations usually starts at home, within the family. These individuals may experience rejection and be ejected from their homes, causing some even to become homeless (Conley, Piemonte, Gusakova & Rubin, 2018; Conley, Matsick, Moors & Ziegler, 2017).

In line with this hypothesis, this study shows that having a larger number of sexual partners and practicing group sex was associated with low psychological well-being, which reinforces the hypothesis that having sex with casual partners implies exposure, which now includes the risk of acquiring sexually transmissible infections and/or

COVID-19 (Stephenson et al., 2020). Sex is a pleasurable practice to satisfy one's desire and improves an individual's general well-being. Group sex, which is usually a source of satisfaction, in a pandemic context, can lead to psychological distress afterward due to a fear of having being infected by COVID-19 (Sousa et al., 2020a, b, c). Although these sexual practices, in the context of COVID-19, may incur risks, we have to bear in mind that such practices are diverse and vary in terms of the configurations and relationships involved, which requires a positive approach considering the specificities of each MSM group. Exposure to often unknown partners, or familiar partners who do not effectively adopt preventive measures, including those against COVID-19, increases the fear of being contaminated or anxiety over the possibility of presenting signs and symptoms of the disease, leading to low psychological well-being (Newman & Guta, 2020; Suen, Chan & Wong, 2020; Brennan, Card, Collicot, Jolimore & Lachowsky, 2020).

Increased levels of anxiety, stress, uncertainty, worry, and fear may result in having multiple sexual partners and/or having group sex, considering the constraining role of affective and sexual practices coupled with the advent of a novel infectious disease, for which an effective treatment or cure has not been devised thus far. Additionally, the COVID-19 epidemiological curve in Brazil at the time of data collection was ascending, with an expressive number of new cases and deaths (Silva et al., 2020). Concomitantly, there was an increase in the amount of information provided by the media, exposing the complexity of the disease and virulence of SARS-CoV-2, which also negatively impacts the individuals' psychological well-being (Gao et al., 2020).

The prevalence of low psychological well-being was approximately six times greater among MSM who did not comply or could not comply with the social isolation measures, reinforcing the hypothesis that even though the individuals may not comply with social distancing measures to seek interactions, exposure still may cause concerns (Sousa et al., 2020c; Newman & Guta, 2020). This finding should be interpreted with caution, as this study did not assess the context in which people violated social isolation measures, socialized with roommates, family, or co-workers, or how people interpreted the questions. Additionally, we should consider that seeking social interactions might not be a matter of choice but rather a compulsive behavior, even though it implies a subsequent decrease in psychological well-being (Sanchez et al., 2020).

Nonetheless, having a small number of partners also negatively affected these individuals' psychological well-being. If, on the one hand, the individuals want to decrease exposure to protect themselves, on the other hand, not having the social support provided by relationships and partners, which would decrease the pandemic's harmful effects, could negatively affect these individuals' mental

health (Sanchez et al., 2020; Carrico et al., 2020; Newman & Guta, 2020). Although we know that social support is not only provided by relationships and partners, in a context of restricted interactions as experienced in the current pandemic context, these individuals assume a prominent role.

Variation in the number of affective and sexual partners may have influenced and decreased the psychological well-being of MSM and is associated with the low psychosocial support resulting the measures imposed by Brazilian agencies to protect people or minimize the impact of the pandemic on mental health. Longitudinal studies are needed to investigate this finding in more detail. In Brazil, stress has been intensified among minority social groups, as their “invisibility” has been exposed along with a denial of rights, cuts in budgets previously designated for the LGBTQIA + population, and naturalized institutional homophobia (Folha de São Paulo, 2020).

A lack of directives in public policy mainly affects the youngest segment of the MSM population, which in this study presented the highest prevalence of low psychological well-being, almost three times higher than among older MSM. The World Health Organization has shown concern with the youngest population segment within the overall context of the COVID-19 pandemic, mainly because these are the most vulnerable from not adhering to social isolation measures. An increase in the number of new COVID-19 cases, agglomerations, and non-adherence to public health measures to control the spread of Sars-CoV-2 has been found in countries already in the summer season (Young minds, 2020; Cohen & Bosk, 2020).

The Inter-Agency Standing Committee (IASC) has proposed specific guidelines to promote mental health and strengthen psychosocial support in emergencies, as is the case for the COVID-19 pandemic. These guidelines focus on promoting people’s psychological well-being and preventing and/or treating mental diseases (IASC, 2007). These goals are achieved by employing multiple approaches that take into account biological, sociocultural, educational, and community characteristics, which should focus on reducing harm, promoting human rights and equality, social participation, and valorization of local resources and competencies, work via integrated support systems, and rehabilitation (Dong, Du, & Gardner, 2020; Fukuti et al., 2020). Socio-affective networks are a significant source of access to protection, sociability, exchange, and the maintenance of MSM’s psychological well-being and health. In the pandemic context, and even after the pandemic, supporting, strengthening, and disseminating these networks may be an effective strategy to improve levels of psychological well-being, decreasing the impact of social isolation, such as feelings of loneliness, heightened anxiety, and stress.

This study’s limitations include its design. Cross-sectional studies do not support conclusions regarding causality; that is, longitudinal studies would allow better evidence of associations. Additionally, due to the need to comply with social distancing measures, population-based face-to-face interviews were not possible, except for the MSM who did not have access to the Internet and could not complete the electronic form. Finally, a probabilistic sampling procedure was not adopted here, which impedes the generalization of results to other contexts or countries, though the results do provide a situational diagnosis of the MSM’s psychological well-being in the pandemic context.

## Conclusion

The factors associated with the MSM’s low psychological well-being were as follows: belonging to the youngest age group, being in a polyamorous relationship, not complying with the social isolation measures, not using social media to find partners, having multiple sexual partners, having reduced the number of partners, and group sex.

The planning and implementation of public policies and actions generally to promote psychological and mental well-being, intended to increase resilience among MSM are needed. Safe sexual strategies and behavior need to be promoted, along with the use of digital technologies to facilitate social relationships by enabling remote interactions. These measures can alleviate the harmful effects of the intensified psychological needs accruing from the pandemic context, social isolation measures, and maladaptive coping strategies.

**Author Contribution** Sousa AFL and IACM conceptualized the study. Sousa AFL, IACM, and ELSC implemented the study and supported data collection. Sousa AFL, IACM, ELSC, BIAO, ARS, and JRBT analyzed the data and drafted the manuscript. All authors write, read, and approved the final manuscript.

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**Data Availability** The datasets used and/or analyzed during this study are available from the corresponding author upon reasonable request.

## Declarations

**Informed Consent** All the participants signed free and informed consent forms online before proceeding with the questionnaire.

**Research Involving Human Participants and/or Animals** All ethical guidelines concerning research involving human subjects were complied with and the Institutional Review Boards at the Universidade



Nova de Lisboa and the University of São Paulo approved the research project before data collection began.

**Conflicts of Interest** The authors declare that they have no conflicts of interest.

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