

## Men's Mental Health in the COVID-19 Pandemic: The Role of Intolerance of Uncertainty and Social Support

Emanuel Missias Silva Palma<sup>1</sup> 

Anderson Reis de Sousa<sup>2</sup> 

Franciane Andrade de Morais<sup>3</sup> 

Jules Ramon Brito Teixeira<sup>4</sup> 

Álvaro Francisco Lopes de Sousa<sup>5</sup> 

**Abstract:** The COVID-19 pandemic exerted a tremendous toll on individuals' mental health. This study aimed to examine the associations between men's common mental disorders (CMD), intolerance of uncertainty (IU), and social support (SS). A cross-sectional online study was carried out in all Brazilian states. Participants were 1.006 adult men recruited through social media using a snowball technique. Men completed the Self-Report Questionnaire-20, the Intolerance of Uncertainty Scale, the Two-Way Social Support Scale, and a sociodemographic questionnaire. In addition, a t-Test and a regression analysis were performed. Men in the clinical group reported significantly higher levels of IU and lower levels of SS. Furthermore, SS moderated the relationship between IU and CMD, suggesting that SS might help protect men's mental health against the deleterious effects of IU in a pandemic scenario. These results indicate that different forms of social support seem to be a promising focus of psychosocial intervention in this context.

**Keywords:** mental health, men, suffering, social support, COVID-19

## Saúde Mental de Homens na Pandemia de COVID-19: O Papel da Intolerância à Incerteza e do Apoio Social

**Resumo:** A pandemia da COVID-19 impactou consideravelmente a saúde mental dos indivíduos. Este estudo teve por objetivo examinar associações entre transtornos mentais comuns (TMC) de homens, a intolerância à incerteza (II) e apoio social (AS). Trata-se de um estudo transversal online realizado em todos os estados brasileiros, com 1.006 homens adultos recrutados em redes sociais mediante a técnica de bola de neve. Os participantes responderam ao Self-Report Questionnaire-20, à Escala de Intolerância à Incerteza, à Escala de Apoio Social Two-way e a um questionário sociodemográfico. Teste t e análise de regressão foram realizados. Os homens do grupo clínico relataram significativamente níveis maiores de II e níveis inferiores de AS. Além disso, o AS moderou a relação entre II e TMC, sugerindo que AS protege a saúde mental dos homens contra efeitos deletérios da II na pandemia. Esses resultados sugerem que o apoio social parece ser um foco promissor de intervenção psicossocial nesse contexto.

**Palavras-chave:** saúde mental, homens, sofrimento, apoio social, COVID-19

## La Salud Mental de los Hombres en la Pandemia de COVID-19: El Papel de la Intolerancia a la Incertidumbre y del Apoyo Social

**Resumen:** La pandemia de COVID-19 afectó considerablemente la salud mental individual. Este estudio examinó las asociaciones entre los trastornos mentales comunes (TMC) de los hombres, la intolerancia a la incertidumbre (II) y el apoyo social (AS). Es un estudio transversal online realizado en los estados brasileños, con 1.006 hombres adultos reclutados en redes sociales mediante la técnica de bola de nieve. Respondieron el Self-Report Questionnaire-20, la Escala de Intolerancia a Incertidumbre, la Escala de Apoyo Social Two-way y un cuestionario sociodemográfico. Se realizaron el test t y el análisis de regresión. Hombres del grupo clínico informaron significativamente niveles superiores de II e inferiores de AS. Además, AS moderó la relación entre II y TMC, lo que sugiere que AS protege la salud mental de los hombres contra los efectos nocivos de II en la pandemia. Estos resultados sugieren que el apoyo social es un foco prometedor de intervención psicossocial en este contexto.

**Palabras clave:** salud mental, hombres, sufrimiento, apoyo social, COVID-19

<sup>1</sup>Escola Bahiana de Medicina e Saúde Pública, Salvador-BA, Brazil

<sup>2</sup>Universidade Federal da Bahia, Salvador-BA, Brazil

<sup>3</sup>Instituto Federal Baiano, Salvador-BA, Brazil

<sup>4</sup>Universidade Estadual de Feira de Santana, Feira de Santana-BA, Brazil

<sup>5</sup>Instituto de Higiene e Medicina Tropical, Universidade Nova de Lisboa, Lisboa, Portugal

Correspondence address: Anderson Reis de Sousa. Universidade Federal da Bahia. Rua Professor Aristides Novis, nº 03, Salvador-BA, Brazil. CEP 40.110-060. E-mail: son.reis@hotmail.com

The new coronavirus (SARS-CoV-2) pandemic has become an enormous public health concern. It has demanded economic, human, and material resources never seen before in the recent history of humankind and has exacerbated mental health problems worldwide (Ornell, Schuch, Sordi, & Kessler, 2020). In this context, researchers have invariably identified increasing levels of stress, depression,

and anxiety in people of all ages, social-economic statuses, and nationalities (Cullenm, Gulati, & Kelly, 2020; Wang et al., 2020). This context has required unprecedented efforts to mitigate the deleterious physical effects of the virus and the damaging consequences associated with common mental disorders (CMD). CMDs involve conditions that meet the nosological criteria of the ICD-10 and the DSM-5 for mental disorders, such as anxiety, depression, and substance abuse (Santos, Araújo, Pinho, & Silva, 2010).

Men have been more likely to be affected by COVID-19 worldwide due to their biological, hormonal, and immunological specificities and health-related behaviors (Bwire, 2020; Rozenberg, Vandromme, & Martin, 2020). For instance, men are more susceptible to virus transmission, hospitalization, and deaths associated with COVID-19 and its complications, such as Severe Acute Respiratory Syndrome (SARS) (Ministério da Saúde, 2020). This might result from men's tendency to move around public spaces more often than women, neglect prevention and sanitary control measures, and be involved in jobs with a greater likelihood of occupational hazards (Bwire, 2020; Ferreira et al., 2020; Rozenberg et al., 2020). In addition, from the onset, research has evidenced greater susceptibility to psychological disorders in men, as observed in countries such as Bangladesh (Mamun & Griffiths, 2020), Colombia (Gonzalez-Dias et al., 2020), and India (Goyal, Chauhan, Chhikara, Gupta, & Singh, 2020). Moreover, these studies have shown an increase in the suicide rate among men. In Brazil, in turn, a study involving a male sample demonstrated that, during the pandemic, men reported experiencing more intense negative emotions and adopting different coping strategies, such as emotion-focused, problem-focused, and meaning-focused strategies (Sousa et al., 2020). In this regard, the literature has called attention to the roles played by intraindividual and interindividual variables in mental health, such as intolerance of uncertainty (IU) and social support (SS). It is believed that these variables might either worsen or protect an individual's psychological functioning.

Intolerance of uncertainty (IU) consists of a tendency to react in a dysfunctional way to uncertain contexts regardless of the possibility of occurrence of events. This reaction might involve cognitive, behavioral, and emotional components. IU can be conceptualized as consisting of two dimensions or subcomponents: prospective IU and inhibitory IU. Prospective IU involves fear and anxious feelings associated with future events. In contrast, inhibitory IU refers to inaction or inability to act (paralysis) in the face of uncertain events (Wheaton, Messner, & Marks, 2021).

Research has consistently identified a strong link between IU and a host of behavioral problems (McEvoy & Mahoney, 2012). Thus, IU can be considered a stable cognitive trait and a risk factor for developing mental disorders. In addition, studies have shown that IU interacts with adverse environmental events, resulting in greater psychological suffering (Dar, Iqbal, & Mushtaq, 2017; Saulnier, Allan, Raines, & Schmidt, 2020). For example, IU has been linked to obsessive-compulsive symptoms, worry, and health anxiety

during the COVID-19 pandemic (Wheaton et al., 2021). Similarly, a study found significant associations between IU and the cognitive and somatic components of depression in the adult population (Saulnier et al., 2020). However, further investigation is required to understand how other variables might mitigate the effects of IU on mental health indicators. One such variable is social support.

Social Support (SS) can be defined as the actual or perceived assistance provided by a network that consists primarily of other people (e.g., friends, family, neighbors, health care workers) (Taylor, 2019). It might involve different dimensions, such as instrumental and emotional. SS is expected to promote positive physical and mental health by regulating behavior, nurturing a sense of meaning in life, and encouraging a healthy lifestyle (Callaghan & Morrissey, 1993).

Research has also indicated that social support might contribute to individual well-being by moderating the effects of adverse life events (Alloway & Bebbington, 1987; Taylor, 2019). For example, a Chinese study found that, during the COVID-19 outbreak, higher levels of social support were significantly associated with lower psychological distress (Yu et al., 2020). Likewise, social support was related to higher self-efficacy and sleep quality and lower anxiety and stress for medical staff treating COVID-19 patients (Xiao, Zhang, Kong, Li, & Yang, 2020). Taken together, these findings highlight the protective role SS can play during crises situations and traumatic events. They also demonstrated that SS could be an effective intervention in these contexts. They also support the buffer theory of SS. According to this model, SS generally moderates the relationship between adverse psychosocial events and illness (Alloway & Bebbington, 1987). Therefore, SS is expected to decrease the likelihood of psychological suffering in a context permeated with adversity.

The objective of the present study was to examine the associations between men's mental health outcomes (i.e., common mental disorders – CMD - indicators), intolerance of uncertainty (IU), and social support (SS) in the context of the COVID-19 pandemic. It was hypothesized that men high in CMD (i.e., men in the clinical group) would present higher levels of IU and lower levels of SS. It was also predicted that SS would moderate the relationship between IU and CMD, buffering the effects of the former on the latter.

## Method

This is a cross-sectional population-based study. It is a part of a larger project entitled *Saúde mental de homens no contexto da pandemia do novo coronavírus no Brasil* coordinated by the research group *Grupo de Estudos sobre o Cuidado em Saúde* at the Universidade Federal da Bahia.

## Participants

Participants were 1.006 men, most of whom self-identified as heterosexual 434 (43.1%) followed by 409 (40.7%) who self-identified as homosexual. Most participants also self-identified

as cisgender, 938 (93.2%), were between 29 and 39 years old, 454 (45.1%), black, 593 (58.9%), single, 646 (64.2%), had a college degree, 742 (73.8%) and lived in the Northeast of Brazil, 611 (60.7%). In addition, most men reported using the Public Health System either/or having health insurance, 708 (70.4%). Seventeen men reported being diagnosed with COVID-19 by a health care professional.

## Instruments

*Sociodemographic Questionnaire.* This consists of items regarding men's gender and sexual identity, race, age, marital status, schooling, occupation, residence, and COVID-19 status (diagnosed or not).

*The Self-Reporting Questionnaire 20 (SRQ-20)* (Carmo et al., 2018). This is a psychiatric disorders screening test consisting of 20 items in a yes/no format, generally used for non-psychotic mental disorders (e.g., depression, anxiety, somatic symptoms, and reduced vital energy). This measure is a common tool for screening CMD. In the present study, the measure's reliability was assessed using Cronbach's alpha ( $\alpha = .88$ ).

*Intolerance of Uncertainty Scale (IUS-12)* (Kretzmann & Gauer, 2020). This is the short version of the IUS original scale and is rated on a 5-point Likert scale (1 = not at all characteristic of me; 5 = entirely characteristic of me). It has two factors: prospective IU (7 items, e.g., *It frustrates me not having all the information I need.*) and inhibitory IU (5 items, e.g., *When it's time to act, uncertainty paralyzes me.*). In the present study, the IUS-12 demonstrated very good internal consistency ( $\alpha = .89$ ) overall and in terms of its dimensions: prospective IU ( $\alpha = .80$ ) and inhibitory IU ( $\alpha = .84$ ).

*2-Way Social Support Scale (2-Way SSS)* (Shakespeare-Finch & Obst, 2011). This scale consists of four subscales measuring the individual perceptions of both giving and receiving emotional and instrumental support. It was adapted in the Brazilian context by Bastianello and Hutz (2016). Participants indicate the frequency of their experience of giving and receiving social support using a 5-point scale rated from 1 (*not at all*) to 5 (*always*).

Higher scores indicate greater levels of social support. In the present study, only the perception of the receiving social support scale was used: Emotional Support (ES) (7 items, e.g., *There is someone I can talk to about the pressures in my life.*) and Instrumental Support (IS) (4 items, e.g., *There is someone who can help me fulfill my responsibilities when I am unable.*). Both dimensions showed excellent internal consistency in the present study (ES,  $\alpha = .93$ ) and (IS,  $\alpha = .83$ ). The scores of both can be summed up to give a total score of an individual's perception of reception of social support. This higher-order scale demonstrated excellent internal consistency ( $\alpha = .93$ ).

## Procedures

**Data collection.** For the sample size calculation, the following parameters were considered: the population of Brazilian men with internet access ( $N = 64,520,660$ ) (NIC.br, 2020),

the expected prevalence of the outcome of 50% because it is an event of unknown nature, 95% confidence level, 5% precision, 80% power, study design effect of 2, and 20% addition for losses. A minimum sample of 923 participants was estimated. A self-report online questionnaire containing measures of all the study variables was designed and widely sent through social media to individuals meeting inclusion criteria (i.e., adult men living in Brazil). The period of data collection extended from May to September 2020. During this period, the epidemiological curve of the number of cases and deaths caused by COVID-19 increased steadily in Brazil and around the world. As a result, preventive measures and sanitary control were implemented, such as quarantine, lockdown, the closing of schools, and blocking or cancellation of air and road travel.

Campaign hospitals were built, and the Brazilian Ministry of Health set guidelines for caring for the diseased and the general population to control the spread of the Sars-CoV-2, such as using masks, hand sanitization, and social distancing. After reading the informed consent form and accepting to participate in the study, men completed the questionnaire. Before completing each study measure, men were instructed to think about their health status over the last four weeks to encompass their perceptions of the pandemic context.

**Data analysis.** First, a correlation analysis (i.e., Pearson's correlation coefficients) was used to assess the associations among the study variables. Then participants were divided into two groups (a clinical and a non-clinical group) according to their scores on the SRQ-20. Participants who scored five or higher were included in the clinical group (i.e., individuals who are more likely to be suffering from a CMD). After dividing participants into two groups, an independent *t*-test was carried out to test their mean differences in the study variables: IU and its subdimensions and reception of SS and its subdimensions. As the variables in the study were not normally distributed, a bootstrapping procedure was used with 1000 bootstrap samples, using bias-corrected accelerated 95% confidence intervals. The effect size was calculated using Cohen's *d*. Finally, a regression analysis using the Process Macro (Hayes, 2018) was carried out to test the moderating effects of total SS levels in the relationship between total IU and CMD.

## Ethical Considerations

The present study was approved by the Ethics Committee of the Escola de Enfermagem at Universidade Federal da Bahia (CAAE n° 4.087.611/2020) and followed the guidelines of Resolution 466/2012 set forth by the National Council of Health.

## Results

Table 1 shows the correlations among study variables. There were significant positive relationships between the IU scores and the CMD scores and significant negative relationships between SS scores and CMD ( $p < .001$ ).

Men high in inhibitory and prospective IU were more likely to report greater levels of CMD indicators. Conversely, men who perceived greater instrumental and emotional support were less likely to report greater levels of CMD.

Table 2 shows the mean differences between the clinical and the non-clinical group in the study variables. As can be seen, men in the clinical group experienced greater levels of total IU and its subdimensions than men in the non-clinical group. All these differences were significant ( $p < .001$ ) and represented large effect sizes, with Cohen's  $d$  ranging from 0.84 to 1.18. Inversely, in terms of SS, men in the

non-clinical group perceived greater levels of social support (instrumental, emotional, and total) than men in the clinical group. Again, all the differences were significant ( $p < .001$ ) and represented medium effect sizes, with Cohen's  $d$  ranging from 0.41 to 0.44.

Table 3 shows a significant interaction between total SS and total IU, which indicates moderation. To better understand this effect, the moderating variable was divided into three levels, according to Hayes (2018). As shown in Figure 1, as the levels of SS increase, the relationship between total IU and CMD becomes weaker.

Table 1  
Descriptive Statistics and Correlations for Study Variables

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. CMD	5.99	4.72	-						
2. PIU	3.34	0.84	.44 ***	-					
3. IIU	2.65	1.00	.59***	.70***	-				
4. IUT	3.03	0.85	.56***	.92***	.91***	-			
5. ISS	3.96	0.97	-.26***	-.17***	-.24***	-.22***	-		
6. ESS	4.23	1.00	-.24***	-.15***	-.25***	-.21***	.67***	-	
7. TSS	4.09	0.91	-.28***	-.18***	-.27***	-.24***	.91***	.92***	-

Note. CMD = Common Mental Disorders; PIU = Prospective Intolerance of Uncertainty; IIU = Inhibitory Intolerance of Uncertainty; IUT = Intolerance of Uncertainty Total Score; ISS = Instrumental Social Support; ES = Emotional Social Support; TSS = Total Social Support; \*\*\* $p < .001$ .

Table 2  
Means, Standard Deviations, and *t* Tests Comparing the Clinical and Non-clinical Groups

Measure	Clinical Group ( <i>n</i> = 546)		Non-clinical group ( <i>n</i> = 460)		<i>t</i> (2, 1004)	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Prospective IU	3.64	0.76	2.99	0.80	-13.03***	.84
Inhibitory IU	3.11	0.92	2.10	0.78	-18.68***	1.18
Total IU	3.41	0.76	2.59	0.73	-17.47***	1.10
Emotional SS	4.03	1.08	4.43	0.85	6.03***	.41
Instrumental SS	3.76	1.03	4.18	0.85	7.09***	.44
Total SS	3.91	0.97	4.30	0.77	7.18***	.44

Note. IU = Intolerance of Uncertainty; SS = Social Support; Mean scores range from 1 to 5 for all scales;  $d$  = Cohen's  $d$  (measure of effect size used in the present study); \*\*\* =  $p < .001$ .

Table 3  
Effects of the Moderation Model

	Coefficient ( <i>b</i> )	Standard Error	<i>t</i>	<i>p</i>
Constant	-3.902	2.146	-1.818	0.069
IU (X)	4.208	0.625	6.731	0.001
SS (W)	0.198	0.497	0.399	0.689
IU * SS (X*W)	-0.302	0.148	2.039	0.042
Conditional Effects (W)				
3.179 (16th - Lower)	3.179	3.249	0.200	0.001
4.375 (50th - Medium)	4.375	2.888	0.151	0.001
4.929 (84th - High)	4.929	2.721	0.189	0.001

Note. IU = Intolerance of Uncertainty; SS = Social Support.

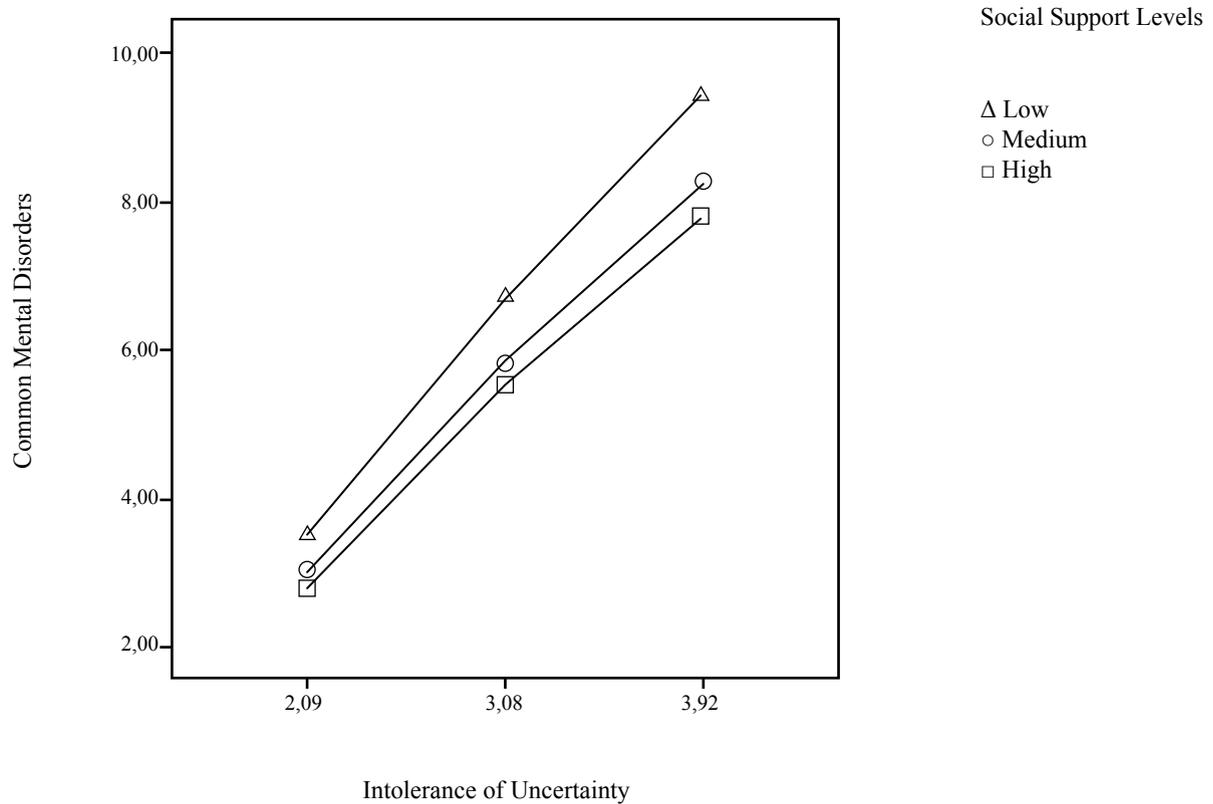


Figure 1. The Moderating Effect of Social Support on the Relationship Between Intolerance of Uncertainty and Common Mental Disorders.

### Discussion

This study set out to examine the associations between men's mental health outcomes (CMD) and intolerance of uncertainty and social support in the context of the COVID-19 pandemic. It was hypothesized that men high in CMD (i.e., in the clinical group) would present higher levels of IU and lower levels of SS. It was also predicted that SS would moderate the relationship between IU and CMD, buffering the effects of the former on the latter. The results of the current study corroborated all the hypotheses.

Literature has consistently shown that individuals with high levels of IU and its prospective and inhibitory dimensions are more susceptible to mental health disorders, such as anxiety and depression (Saulnier et al., 2020). Therefore, authors have conceptualized IU as an intraindividual risk factor for psychological suffering (Saulnier et al., 2020). In a pandemic context, it seems that this trait may become more salient because of the uncertainties and concerns that generally characterize this scenario (Taylor, 2019).

Other studies also seem to corroborate our findings. For instance, Ferreira et al. (2020) found that IU and its subscales significantly predicted higher levels of stress, anxiety, and depression in the initial phases of the COVID-19 pandemic in Brazil. In a similar vein, Tull et al. (2020) found

that IU was associated with higher levels of health anxiety, concerns about COVID-19, and obsessive-compulsive symptoms during the COVID-19 pandemic in the United States. Taken together, these findings seem to highlight that IU might function as a vulnerability factor playing a significant role in the development and maintenance of mental health suffering for some individuals, especially in uncontrollable and unpredictable contexts (Tull et al., 2020).

In sum, the association between IU and CMD highlights critical clinical implications and points to future research regarding the treatment and follow-up of emotional and behavioral disorders occasioned by the COVID-19 pandemic (Taylor, 2019). In this sense, it is recommended that assessing and intervening in the affective and social risk factors might mitigate negative consequences associated with COVID-19, such as health-related anxiety (Grey et al., 2020).

SS is a recognized protective factor of an individual's mental and physical health. For instance, it has been consistently linked to higher levels of psychological well-being and lower levels of depression, anxiety, and stress (Haliwa, Spalding, Smith, Chappell, & Strough, 2021). By perceiving and experiencing a supportive network in which one is cared for, emotionally validated, and instrumentally helped, individuals may become more resilient to the adverse consequences of everyday life. This might

help explain, in part, why men in the non-clinical group reported higher levels of both emotional and instrumental support. That is, experiencing emotional and instrumental support (e.g., sharing your problems and worries with someone and having someone help you with daily chores) may reduce the levels of emotional distress, such as insomnia, irritability, depression, and anxiety. Other study findings seem to corroborate this hypothesis. For instance, Saltzman, Hansel, and Bordnick (2020) reported that perceived social support was associated with lower levels of depression, irritability, sleep problems, and loneliness during the quarantine imposed by the COVID-19 pandemic.

Perhaps the most striking finding of the current study regards the significant interaction between IU and SS in the regression model. Furthermore, this finding helps support the buffer theory in that it demonstrates how SS mechanisms might play a role in mitigating the effects of adversity on individual well-being. More specifically, SS could function as a protective factor for men's mental health during the pandemic, leading to lower levels of psychological distress in a context permeated with uncertainties. By perceiving a social network that offers both emotional and instrumental support, men might become less sensitive to the adverse effects of IU on their mental health.

We highlight the novelty of this study. Its findings represent important implications for men's health in critical contexts and reveal the need to implement health measures in different domains, such as education, work, and community, to strengthen social support networks (Sousa et al., 2020). Furthermore, other studies have suggested that social support will play a crucial role in reducing the deleterious effects of the COVID-19 pandemic and help individuals adapt to their everyday routines following the pandemic (Xiao et al., 2020). It is essential to note that social distancing has been one of the major strategies used to contain the spread of the virus. In this regard, authors have claimed that physical distancing may be a more appropriate term and that access to technology may help promote new social support methods, thus reducing the likelihood of mental health problems associated with the COVID-19 pandemic (Sousa et al., 2020).

The current study has some limitations that should be considered: (a) cross-sectional designs do not sustain conclusions regarding causality as might be the case with longitudinal studies; (b) data were collected using an online questionnaire, which might have hampered the participation of men without access to the Internet; and (c) non-probabilistic sample size was not calculated, which does not allow for the generalization of the study findings to other contexts and countries. Nevertheless, despite such limitations, the results of this study provide a situational diagnosis of men's mental health during the COVID-19 pandemic in Brazil. This might help advance future research on this issue and create public health policies for men.

## References

- Alloway, R., & Bebbington, P. (1987). The buffer theory of social support—a review of the literature. *Psychological Medicine, 17*(1), 91-108. doi:10.1017/s0033291700013015
- Bastianello, M. R., & Hutz, C. S. (2016). Escala de Suporte Social Percebido [Perceived Social Support Scale]. In C. S. Hutz (Ed.), *Avaliação em psicologia positiva: Técnicas e medidas* [Assessment in positive psychology: Techniques and measures] (pp. 40-60). São Paulo, SP: Hogrefe.
- Bwire, G. M. (2020). Coronavirus: Why men are more vulnerable to COVID-19 than women? *Springer Nature Comprehensive Clinical Medicine, 2*(7), 874-876. doi:10.1007/s42399-020-00341-w
- Callaghan, P., & Morrissey, J. (1993). Social support and health: a review. *Journal of Advanced Nursing, 18*(2), 203-210. doi: 10.1046/j.1365-2648.1993.18020203.x
- Carmo, M. B. B., Santos, L. M., Feitosa, C. A., Fiaccone, R. L., Silva, N. B., Santos, D. N., ... Amorim, L. D. (2018). Screening for common mental disorders using the SRQ-20 in Brazil: What are the alternative strategies for analysis? *Brazilian Journal of Psychiatry, 40*(2), 115-122. doi:10.1590/1516-4446-2016-2139
- Cullenm, W., Gulati, G., & Kelly, B. D. (2020). Mental health in the COVID-19 pandemic. *QJM: An International Journal of Medicine, 113*(5), 311-312. doi:10.1093/qjmed/hcaa110
- Dar, K. A., Iqbal, N., & Mushtaq, A. (2017). Intolerance of uncertainty, depression, and anxiety: Examining the indirect and moderating effects of worry. *Asian Journal of Psychiatry, 29*, 129-133. doi: 10.1016/j.ajp.2017.04.017
- Ferreira, D. C. S., Oliveira, W. L., Delabrida, Z. N. C., Faro, A., & Cerqueira-Santos, E. (2020). Intolerance of uncertainty and mental health in Brazil during the COVID-19 pandemic. *Suma Psicológica, 27*(1), 62-69. doi:10.14349/sumapsi.2020.v27.n1.8
- Goyal, K., Chauhan, P., Chhikara, K., Gupta, P., & Singh, M. P. (2020). Fear of COVID 2019: First suicidal case in India. *Asian Journal of Psychiatry, 49*, 101989. doi:10.1016/j.ajp.2020.101989
- Grey, I., Arora, T., Thomas, J., Saneh, A., Tohme, P., & Abi-Habib, R. (2020). The role of perceived social support on depression and sleep during the COVID-19 pandemic. *Psychiatry Research, 293*, 113452. doi:10.1016/j.psychres.2020.113452
- Haliwa, I., Spalding, R., Smith, K., Chappell, A., & Strough, J. (2021). Risk and protective factors for college students' psychological health during the COVID-19 pandemic. *Journal of American College Health, 1-5*. Advance online publication. doi:10.1080/07448481.2020.1863413

- Hayes, A. F. (2018). Partial, conditional, and moderated moderated mediation: Quantification, inference, and interpretation. *Communication Monographs, 85*(1), 4-40. doi:10.1080/03637751.2017.1352100
- Kretzmann, R. P., & Gauer, G. (2020). Psychometric properties of the Brazilian Intolerance of Uncertainty Scale–Short Version (IUS-12). *Trends in Psychiatry and Psychotherapy, 42*(2), 129-137. doi:10.1590/2237-6089-2018-0087
- Mamun, M. A., & Griffiths, M. D. (2020). First COVID-19 suicide case in Bangladesh due to fear of COVID-19 and xenophobia: Possible suicide prevention strategies. *Asian Journal of Psychiatry, 51*, 102073. doi:10.1016/j.ajp.2020.102073
- McEvoy, P. M., & Mahoney, A. E. (2012). To be sure, to be sure: intolerance of uncertainty mediates symptoms of various anxiety disorders and depression. *Behavior therapy, 43*(3), 533-545. doi: 10.1016/j.beth.2011.02.007
- Ministério da Saúde. Secretaria de Vigilância em Saúde. (2020). Doença pelo Coronavírus COVID-19 [Coronavirus disease COVID-19]. *Boletim Epidemiológico Especial, (42)*. Retrieved from [https://www.gov.br/saude/pt-br/media/pdf/2020/dezembro/24/boletim\\_COVID\\_42\\_24dez20.pdf](https://www.gov.br/saude/pt-br/media/pdf/2020/dezembro/24/boletim_COVID_42_24dez20.pdf)
- Núcleo de Informação e Coordenação do Ponto BR (NIC. br). Pesquisa sobre o uso das tecnologias de informação e comunicação: Pesquisa TIC Domicílios, ano 2019: Tabelas. São Paulo: 2020. Available online: <http://cetic.br/pt/arquivos/domicilios/2019/individuos/#tabelas> (accessed on 30 April 2021).
- Ornell, F., Schuch, J. B., Sordi, A. O., & Kessler, F. H. P. (2020). Pandemic fear and COVID-19: Mental health burden and strategies. *Brazilian Journal of Psychiatry, 42*(3), 232-235. doi:10.1590/1516-4446-2020-0008
- Rozenberg, S., Vandromme, J., & Martin, C. (2020). Are we equal in adversity? Does COVID-19 affect women and men differently? *Maturitas, 138*, 62-68. doi:10.1016/j.maturitas.2020.05.009
- Saltzman, L. Y., Hansel, T. C., & Bordnick, P. S. (2020). Loneliness, isolation, and social support factors in post-COVID-19 mental health. *Psychological Trauma: Theory, Research, Practice, and Policy, 12*(S1), S55-S57. doi:10.1037/tra0000703
- Santos, K. O. B., Araújo, T. M., Pinho, P. S., & Silva, A. C. C. (2010). Avaliação de um instrumento de mensuração de morbidade psíquica: Estudo de validação do Self-Reporting Questionnaire (SRQ-20) [Evaluation of a psychological morbidity measurement instrument: Validation study of the Self-Reporting Questionnaire (SRQ-20)]. *Revista Baiana de Saúde Pública, 34*(3), 544-560. Retrieved from <http://files.bvs.br/upload/S/0100-0233/2010/v34n3/a1881.pdf>
- Saulnier, K. G., Allan, N. P., Raines, A. M., & Schmidt, N. B. (2019). Depression and intolerance of uncertainty: Relations between uncertainty subfactors and depression dimensions. *Psychiatry, 82*(1), 72-79. doi:10.1080/00332747.2018.1560583
- Shakespeare-Finch, J., & Obst, P. L. (2011). The development of the 2-way social support scale: A measure of giving and receiving emotional and instrumental support. *Journal of Personality Assessment, 93*(5), 483-490. doi:10.1080/00223891.2011.594124
- Sousa, A. R., Santana, T. S., Moreira, W. C., Sousa, A. F. L., Carvalho, E. S. S., & Craveiro, I. (2020). Emotions and coping strategies of men to the COVID-19 pandemic in Brazil. *Texto & Contexto-Enfermagem, 29*, e20200248. doi:10.1590/1980-265X-TCE-2020-0248
- Taylor, S. (2019). *The psychology of pandemics: Preparing for the next global outbreak of infectious disease*. Newcastle upon Tyne, United Kingdom: Cambridge Scholars.
- Tull, M. T., Barbano, A. C., Scamaldo, K. M., Richmond, J. R., Edmonds, K. A., Rose, J. P., & Gratz, K. L. (2020). The prospective influence of COVID-19 affective risk assessments and intolerance of uncertainty on later dimensions of health anxiety. *Journal of Anxiety Disorders, 75*, 102290. doi:10.1016/j.janxdis.2020.102290
- Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020). Immediate psychological responses and associated factors during the initial stage of the 2019 Coronavirus Disease (COVID-19) epidemic among the general population in China. *International Journal of Environmental Research and Public Health, 17*(5), 1729. doi:10.3390/ijerph17051729
- Wheaton, M. G., Messner, G. R., & Marks, J. B. (2021). Intolerance of uncertainty as a factor linking obsessive-compulsive symptoms, health anxiety and concerns about the spread of the novel coronavirus (COVID-19) in the United States. *Journal of Obsessive-Compulsive and Related Disorders, 28*, 100605. doi:10.1016/j.jocrd.2020.100605
- Xiao, H., Zhang, Y., Kong, D., Li, S., & Yang, N. (2020). The effects of social support on sleep quality of medical staff treating patients with coronavirus disease 2019 (COVID-19) in January and February 2020 in China. *Medical Science Monitor: International Medical Journal of Experimental and Clinical Research, 26*, e923549. doi:10.12659/MSM.923549
- Yu, H., Li, M., Li, Z., Xiang, W., Yuan, Y., Liu, Y., ... Xiong, Z. (2020). Coping style, social support, and psychological distress in the general Chinese population in the early stages of the COVID-19 epidemic. *BMC Psychiatry, 20*(1), 426. doi:10.1186/s12888-020-02826-3

*Emanuel Missias Silva Palma* is a Professor of Psychology at Escola Bahiana de Medicina e Saúde Pública, Salvador-BA, Brazil.

*Anderson Reis de Sousa* is a Professor of the Escola de Enfermagem at Universidade Federal da Bahia, Salvador-BA, Brazil.

*Franciane Andrade de Morais* is a Psychologist at Instituto Federal Baiano, Salvador-BA, Brazil.

*Jules Ramon Brito Teixeira* is a Professor of the Universidade Estadual de Feira de Santana, Feira de Santana-BA, Brazil.

*Álvaro Francisco Lopes de Sousa* is a Reseacher of the Instituto de Higiene e Medicina Tropical, Universidade Nova de Lisboa, Lisboa, Portugal.

*Authors' Contribution:*

All authors made substantial contributions to the conception and design of this study, to data analysis and interpretation, and to the manuscript revision and approval of the final version. All the authors assume public responsibility for content of the manuscript.

*Associate editor:*

Adriana Martins Saur

*Received:* Aug. 15, 2021

*1st Revision:* Nov. 29, 2021

*Approved:* Mar. 16, 2022

*How to cite this article:*

Palma, E. M. S., Sousa, A. R., Morais, F. A., Teixeira, J. R. B., & Sousa, A. F. L. (2022). Men's mental health in the COVID-19 pandemic: The role of intolerance of uncertainty and social support. *Paidéia (Ribeirão Preto)*, 32, e3217. doi:<https://doi.org/10.1590/1982-4327e3217>