2-Sancez

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Psychological Impact during Covid-19. A Study on Socio-Demographic Risk Factors

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ABSTRACT

Background: The emergence of the COVID-19 pandemic has generated a significant impact on the physical and mental health of the population. The effects of the disease and the measures taken by countries around the world have resulted in a notable change in people's lifestyle and an increase in psychological problems.
Method: This study aimed to assess the psychological impact caused by the pandemic in a sample of 210 adults. An online questionnaire that included socio-demographic variables and concerns about physical and mental health, and the Perceived Stress Scale (PSS), was used.
Results: The results showed moderate-high levels of stress in the sample, especially significant in the group of women; 90% of the participants felt that the pandemic had negatively affected their mental health. The psychological impact was greater in women, younger people and those with a higher level of education.
Conclusions: It is concluded that the pandemic is generating significant levels of stress in the population and a significant psychological impact that affects people's quality of life. The importance of assessing psychological well-being and detecting those profiles of higher risk is pointed out, in order to establish prevention and treatment strategies at present, and for traumatic situations in the future.

Keywords: *Stress; COVID-19; Mental Health; EEP-10*

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Introduction

In the last year, the coronavirus pandemic (COVID-19) has become the most severe public health problem worldwide due to its impact on the physical and psychological health of people, and the economic consequences for nations around the world, a global crisis that is spreading to all areas. COVID-19 is a new viral infection that started in China in late 2019 and was declared a public health emergency of international concern in January 2020 (WHO, 2020). Today, the outbreak continues to spread throughout the world and the number of cases continues to increase as this virus is characterized by rapid person-to-person transmission (Yu and Yang, 2020).

The consequences of COVID-19 on the world's population have been devastating. On the one hand, there was an increase in morbidity and mortality, and on the other hand, there were important changes in physical and/or psychological well-being of the people, either because of having suffered the disease, because of the fear of being infected, or by changes in daily routines and lifestyle. To the individual risks we must add the risks related to the family environment (Li et al, 2021) such as: suspicion of infection of family members, estrangement from relatives, loss of loved ones, and the economic ones (loss of job and/or decrease in income in many cases).

In addition, the authorities of most of the countries have taken measures, and continue to do so at the moment, to restrict the mobility of citizens (isolation, social distancing and quarantines), public health measures aimed at stopping the transmission of the virus. Such measures had a significant impact on the psychological health of the population and have disrupted the lives of many people across the world. Citizens have been in this situation for more than a year now, with the consequent increase in stress levels, deterioration in quality of life and psychological well-being (Hou et al, 2021, Valiente et al, 2021; Li et al, 2021). It is for this reason why the evaluation of the stress levels of the population has become an important concern (Qiu et al, 2020; Rehman et al. 2021; Pearman et al, 2021), given that the outbreak of the disease and the stress generated is associated with psychological and mental health problems (WHO, 2020).

Stress has been defined as a set of particular relationships between the person and the environment that is regarded by the person as something that exceeds their resources and endangers their well-being (Lazarus and Folkman, 1999). Stress, therefore, appears when a person perceives that the demands of the environment exceed their own adaptive capacity. Perceived stress has been defined as an outcome variable that measures the level of stress experienced in function of objective stressful events, coping processes, and personality factors. (Cohen et al, 1983). These authors constructed the Perceived Stress Scale (PSS), an instrument that in its different versions has been widely used in research, in the clinic, and in various populations: elderly (Jiang et al, 2017), infertile women (Maroufi Zadeh et al, 2018), students (Denovan et al, 2019), adolescents (Khafagy et al, 2020), etc. Furthermore, since the beginning of the COVID-19 pandemic, the PSS has been used in numerous studies to assess stress levels in the population (Jahrami et al, 2020; Aslan et al, 2020; Son et al, 2020).

Prolonged exposure to stressful situations tends to produce all kinds of psychological alterations that can increase the risk of suffering from multiple medical and mental pathologies (Allan et al, 2020; Soraci et al, 2021; Alzueta et al, 2021). Moreover, prolonged confinement situations can increase inactivity behaviors that lead to higher levels of stress (Chen et al, 2020; Amekran, El Hangouche, 2021). Stress is one of the most relevant characteristics of what the WHO has coined as 'pandemic fatigue' (WHO, 2020b). In the literature, there are references on stress and the consequences of it for psychological health during other epidemics (Moscoso, 1994).

In a health emergency such as the current one, it is therefore convenient to assess the effects of COVID-19 on the emotional well-being of citizens, using valid and proven measures. The purpose of this study was to examine the impact of the pandemic and the associated social restrictions on the stress levels of the adult population, the perception of perceived risk on physical and mental health, and its relationship with demographic risk factors that are examined as predictors of the psychological well-being of individuals.

Although the identification of the sociodemographic factors related to psychological well-being is complex, some authors (Chyi and Mao, 2012; Vera et al. 2012) acknowledge that well-being interacts with factors such as income, work activity, educational level, lifestyle, sex, age and health among others. The results of this study could help to detect risk profiles in the population and, therefore, in the establishment of prevention and treatment strategies in similar present and / or future stressful and traumatic situations. It is expected to find moderate-high levels of stress and perceived risk for physical and mental health in the entire sample, and especially in some groups such as women. Other sociodemographic variables are also expected to be related to higher levels of psychological distress.

Method

Participants

From April 8 to 15, 2021, an online survey was launched with the participation of 217 people. Of the total number of surveys obtained, seven were excluded because they did not meet the minimum inclusion age criteria (over 18 years of age). The survey did not allow people to leave questions blank, so missing data did not have to be considered. The study adheres to ethical standards. The participants gave their informed consent to participate in the study completely anonymously and confidentially. There was no potential harm to the participants, so approval from an ethics committee was not required. The informed consent forms were completed before accessing the survey and the anonymity of the participants was guaranteed.

Procedure and measures

A 20-item questionnaire was used, comprised of three sections:

1) The first section provided information related to sociodemographic variables (8 items): age, sex, educational level, work situation, place of residence, way of life and the environment of people affected by COVID-19. Besides, an additional item that assessed the perception of the risk of contagion was added. A scale with a Likert-type response format of five alternatives with a range of 0 (very low risk) to 5 (very high

risk) was used to evaluate the perception of the participants of their risk of infection, and the question for the participants, as it has been used in other works (Oducado et al. 2021), was: "How would you describe your risk of getting COVID-19?.

2) The second section was made up of two items. These items were used to assess self-reported health, specifically the perception of perceived risk on general health and on mental health. Self-reported health is frequently used as a health measure when broader measurements are lacking, and has been used in various studies (Lorem et al, 2020; Peters et al, 2020). In this case, a scale with a Likert-type response format was used, with a response range (0-3) ("not affected to very affected"). The participants were asked: "How do you think the pandemic has affected your general health?, and also " How do you think the pandemic has affected your mental state (anxiety, depressed mood, insomnia ...)?

3) The third section of the questionnaire was related to the psychological impact measured by the stress level (10 items). Cohen et al (1983), constructed the Perceived Stress Scale (PSS), an instrument that estimates the degree to which life situations are valued as stressful by people. An adapted version has recently been developed, the Pandemic-related Perceived Stress Scale (PSS-10-C) (Campo-Arias et al, 2020), whose validity has been confirmed and improved in a later version, and has a good internal consistency (Cronbach's alpha = 0.755) (Hernandez-Garcia et al. 2021). This adapted version is the one used in this work. The scale scores from 0 to 40. Scores from 0 to 14 are considered low stress levels, scores from 15 to 24, moderate stress level, and scores from 25 to 40 are considered high stress levels.

Results

Statistics and data analysis

Means, standard deviations, frequencies and percentages were calculated to describe the data. To check the possible differences with statistical significance, the Mann-Whitney test and Kruskal-Wallis test were used. Statistical significance was established at $p < .05$. The analyses were carried out with the Statistical Package for Social Sciences, SPSS.

Sample characteristics

Table 1 shows the main characteristics of the sample (N = 210). The mean age of the participants was 31.17 years, the most frequent belonging to the age group of 18-24 years. 67.14% were women, and 60.5% had secondary education. 51.4% were students who lived with relatives (71.42%), and the most common was living in a small city with more than 5,000 inhabitants (45.23%). 88.5% knew people affected by COVID-19, and 46.20% considered that they had a moderate risk of contagion.

	Variables	f	%
Age (M = 31,17; SD=15,2)	emerging adults (range 18–24)	119	56.4
	young adults (range 25–39)	18	8.53
	middle-aged adults (range 40–59)	66	31,3
	older adults (range 60–79)	8	3.82
Sex	Male	69	32.86
	Female	141	67.14
Level of studies completed	Primary studies	12	5.71
	Secondary studies	128	60,5
	University studies	70	33,3
Occupation	Student	108	51.4
	Unemployed	8	3,81
	Self-employed	13	6,20
	Employee	77	36,6
	Pensioner	4	1,90
Place of residence	Small town (up to approximately 5,000 population)	61	29.04
	Large town (+ 5,000 population approximately)	95	45.23
	City (+ 50,000 population approximately)	54	25.71
Way of life	I live alone	16	7.61
	I live with friends	7	3.33
	I live with my family	150	71.4
	I live with a partner	37	17.6
I know people affected by COVID	Yes	186	88.5
	No	24	11.4
Risk of becoming infected with COVID-19	Very low risk	8	3.81
	Low risk	50	23.81
	Moderate risk	97	46.20
	High risk	41	19.52
	Very high risk	14	6.67

Table 1. Sample characteristics (N = 210)

Perceived stress, general health and self-reported mental health

Table 2 shows the results for the dependent variables of the study. The mean perceived stress for the participants was 19.07, as indicated above, the levels in the general population described by Cohen et al (1983), were less than 13.

Variables	M(Sd)	f	%
Perceived Stress Scale (PSS) (0-40)	19.07(7.1)		
Low level = 0-14		60	28.43
Moderate level = 15-24		102	48.34
High level = 25-40		49	23.22
General self-reported health (0-3)	1.32(0.7)		
Not at all		33	15.71
Slightly		95	45,24
Quite		68	32.38
Severely		14	6.67
Self-reported mental health (0-3)	1.33(0.8)		
I have not been affected at all		19	9.05
I have felt moderately affected		116	55.24
It has affected me significantly		65	30.95
It has affected me severely		10	4.76

Table 2 - Perceived stress, general health and self-reported mental health scores

More than 71% of the respondents presented moderate or high stress levels, specifically 48.25% had moderate levels, and 23.22% had high levels. Regarding general health and self-reported mental health, between 85% and 90% of the participants felt affected by the pandemic. Specifically 45.24% of the participants reported feeling moderately affected in their *general health,* 32.38% felt significantly affected and 6.67% felt severely affected. 55.4% felt moderately affected in their *mental health*, 30.95% felt significantly affected, and 4.76% felt severely affected.

Differences in perceived stress

Table 3 shows the results corresponding to the differences in perceived stress in relation to the rest of the variables.

	Variables	M	statistical	p-value
Age	emerging adults (range 18–24)	18.93	K=1.36†	0.71
	young adults (range 25–39)	20.89		
	middle-aged adults (range 40–59)	18.85		
	older adults (range 60–79)	18.71		
Sex	Male	17.59	U=4085*	0.04
	Female	19.78		
Level of studies completed	Primary studies	15.41	K=5.51†	0.06
	Secondary studies	18.80		
	University studies	20.09		
Occupation	Student	19.62	K=1.08†	0.89
	Unemployed	18.00		
	Self-employed	19.07		
	Employee	18.49		
	Pensioner	17.25		
Place of residence	Small town	18.72	K=0.06†	0.94
	Large town	19.24		
	City	19.15		
Way of life	I live alone	20.19	K=2.17†	0.53
	I live with friends	21.43		
	I live with my family	19.04		
	I live with a partner	20.19		
I know people affected by COVID	Yes	19.26	U=1968*	0.21
	No	17.54		
Risk of becoming infected with COVID-19	Very low risk	18.75	K=0.57†	0.96
	Low risk	19.24		
	Moderate risk	19.00		
	High risk	19.31		
	Very high risk	18.35		

*Mann-Whitney test. †Kruskal-Wallis test. p <.05

Table 3 - Differences in perceived stress

The highest stress scores were in young adults (mean = 20.89), women (mean = 19.78), people with university studies (mean = 20.09), students (mean = 19.62), people who lived in cities with a medium population (mean = 19.62), those who lived with friends (21.43), those who knew people affected by COVID (19.26), and those who perceived a high risk of infection (19.31). Statistically significant differences were found in the gender variable (mean stress 17.59 in men *vs*. 19.78 in women) (U=4085, p = 0.04).

Differences in general health and self-reported mental health

Table 4 shows the results for the variables self-reported general health and self-reported mental health. For the self-reported general health variable, the highest scores were for young adults (mean = 1.55), women (mean = 1.43), people with primary education (mean = 1.50), self-employed workers (mean = 1.46), those who lived in smaller cities (mean = 1.42), those who lived alone or with a partner (mean = 1.37), those who knew people affected by covid (mean = 1 , 37), and those who perceived a moderate risk of infection (mean = 1.48).

	General health			Mental health		
Variables	**M**	**statistical**	**p-value**	**M**	**statistical**	**p-value**
Age						
emerging adults (18–24)	1.35			1.37		
young adults (25–39)	1.55	K=2.07†	0.55	1.28	K=0.82†	0.84
middle-aged adults (40–59),	1.26			1.27		
older adults (60–79),	1.28			1.29		
Sex						
Male	1,14	U=3919*	0.01	1.21	U=4214*	0.08
Female	1.43			1.38		
Level of studies completed						
Primary studies	1.50			1.08		
Secondary studies	1.30	K=0.81†	0.66	1.30	K=3.18†	0.20
University studies	1.37			1.41		
Occupation						
Student	1.42			1.40		
Unemployed	1.37			1,25		
Self-employed	1.46	K=3.12†	0.53	1.46	K=4.95†	0.29
Employee	1.19			1.19		
Pensioner	1.25			1.50		
Place of residence						
Small town	1.42			1.34		
Large town	1.34	K=1.41†	0.49	1.36	K=0.99†	0.60
City	1.22			1.24		
Way of life						
I live alone	1.37			1.25		
I live with friends	1.00	K=1.09†	0.77	1.28	K=0.56†	0.90
I live with my family	1.34			1.32		
I live with a partner	1.37			1.37		
I know people affected by COVID						
Yes						
No	1.37	U=2299*	0.79	1.35	U=1944*	0.25
	1.33			1.16		
Risk of becoming infected with COVID-19						
Very low risk	0.75			1.25		
Low risk	1.06	K=13.09†	0.01	1.34	K=0.89†	0.93
Moderate risk	1.48			1.33		
High risk	1.41			1.36		
Very high risk	1.42			1.21		

*Mann-Whitney test. †Kruskal-Wallis test. p <.05

Table 4 - Differences in self-reported general health and mental health

Significant differences were found in the sex variable (mean for men 1.14 vs mean for women 1.43) (U=3919; p = 0.01), and in the variable perception of the risk of infection (K=13.09; p = 0.01). Regarding the self-reported mental health variable, the highest scores were obtained in younger adults (mean = 1.37),

women (mean = 1.38), those who had university studies (mean = 1.41), pensioners (mean = 1.50), those who lived in medium-sized cities (mean = 1.36), those who lived with a partner (mean = 1.37), those who knew people affected by covid (mean = 1.35), and those who perceived a high risk of infection (mean = 1.36).

Dicussion

Health sciences can benefit from surveys conducted remotely by reaching a large number of people and having data available in a very short time, what's more it is a useful and fast method. In line with this type of work, this study aimed to evaluate the levels of stress and the psychological impact in a sample of adults.

The results have shown that stress levels in general were moderate, although considerably higher than in the normal population, and significantly higher in women. These results have been found in previous studies and add to the emerging evidence that shows deterioration in mental health during the pandemic that is constant throughout the world. Qiu et al (2020), women showed a higher level of distress than men. Sareen et al (2013), they found that women were much more vulnerable to stress and more likely to develop PTSD. Garcia-Alvarez et al (2020), also found that female gender was a risk factor for increased anxiety during the pandemic. Yan et al (2021), found that higher perceived stress was associated with more emotional distress, depression, fear, compulsion, anxiety, neurasthenia and hypochondria. Similar results were found in the works of Limcaoco et al (2020), and Kecojevic et al, (2020). Garcia-Portilla et al (2020), found higher levels of emotional distress in older women who lived alone, and Kassim et al, (2021) found higher scores in anxiety and depression in women.

The psychological impact measured by the combination of stress and self-reported general and mental health, was found to be greater in younger people, as has been documented in other studies. It seems that the youngest are more affected by the interruption of the usual routines (Kneple et al, 2021) and by the new preventive routines of avoiding crowded places (How et al, 2021). In a recent study (Bruine et al, 2021), it was found that older adults appeared to have a more optimistic outlook and better mental health during the early stages of the pandemic; similar results were found by Adamson et al, (2020). Other authors such as Varma et al (2021), concluded that the younger age groups were more vulnerable to stress, depression and anxiety symptoms. However, other studies have pointed out that since the highest mortality rate occurs among older people during the pandemic, older people are more likely to be impacted. The lower rates of contagion in younger people, and home quarantine are acting as protective factors, but the greater ability of young adults to access information about the pandemic causes them more stress (Qui et al, 2020).

In this work, people with a higher level of education had higher scores on stress and a perception of a greater impact on their mental health. In a study by Qiu et al (2020), similar results were obtained, indicating that it was probably due to greater self-awareness of their health. We have found higher levels of stress in students, as has already been found in other studies (Li et al, 2021) that showed a very significant impact on this type of population.

An issue to consider in relation to our results is the moment in time when the survey was conducted. It is logical to assume that pandemic-related stress was at a higher level during the times of the greatest crisis and when very little was known about the new virus that hit the world (Oduato et al 2021), and at a lower level under current circumstances, with lighter restrictions and with ongoing immunization processes in many countries.

This study has shown that women, students and younger groups of age are more vulnerable to the consequences caused by this health crisis, to the psychological impact and to the perception of a greater impact on general and mental health. Students can also see their educational trajectories and their professional future truncated. Current findings (Hou et al, 2021), expand the evidence on the importance of maintaining daily routines to cope with stress and improve mental health (healthy eating, sleep, socialization, leisure activities and work / study), the regularization of these routines could benefit mental health in those who experience different levels of stress. The psychological and mental health services of each country must have specific assistance manuals for these most vulnerable groups and rapid intervention protocols for times of crisis, adapted to the cultural specificities of their environment. In addition to low-cost interventions that can be widely disseminated among the population. Psychological interventions have shown to be effective tools for crisis situations, and should be promoted as important assistance strategies in emergency situations.

Conclusion

The COVID-19 pandemic is generating a significant psychological impact on the world's population. The fear of contagion, the loss of loved ones, changes in daily routines and restrictions in social relationships are a dangerous breeding ground for mental health problems for many people. Therefore, it is important to detect those profiles with the highest risk in order to establish prevention and treatment strategies today, and in traumatic situations in the future. As indicated by international organizations (WHO, 2021), current investment in prevention and mental health care is very low, and as a consequence there is a huge gap between the need for treatment and its availability. There is a need for greater investment by governments and international agencies, investment in economic and human resources, in order to offer support to the most affected people, and create an adequate healthcare infrastructure to address this problem today and in future crises.

Future studies should take into account increasing the number of variables used for the analysis and also a greater number of cases. Since the number of cases in the sample used is not very high, this could influence the generalization and interpretation of the results. It could also be interesting to include other variables such as changes in lifestyle like teleworking or online teaching, which have been shown to explain the psychological impact on the population. Ongoing longitudinal studies are needed to examine the trajectory of the mental health burden over time. A future direction for clinical interventions should be include to detect risk profiles in the population and implement prevention and treatment strategies in similar present and / or

future stressful and traumatic situations as well as increasing specialized psychological, psychosocial and mental health support services.

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References

Adamson, M. M., Phillips, A., Seenivasan, S., Martinez, J., Grewal, H., Kang, X., ... & Spiegel, D. (2020). International prevalence and correlates of psychological stress during the global CoViD-19 pandemic. *International Journal of Environmental Research and Public Health*, *17*(24), 9248. https://doi.org/10.3390/ijerph17249248

Allan, S. M., Bealey, R., Birch, J., Cushing, T., Parke, S., Sergi, G., ... & Meiser-Stedman, R. (2020). The prevalence of common and stress-related mental health disorders in healthcare workers based in pandemic-affected hospitals: a rapid systematic review and meta-analysis. *European Journal of Psychotraumatology*, *11*(1), 1810903. https://dx.doi.org/10.1080%2F20008198.2020.1810903

Alzueta, E., Perrin, P., Baker, F. C., Caffarra, S., Ramos-Usuga, D., Yuksel, D., & Arango-Lasprilla, J. C. (2021). How the COVID-19 pandemic has changed our lives: A study of psychological correlates across 59 countries. *Journal of Clinical Psychology*, *77*(3), 556-570.

Amekran, Y., & El Hangouche, A. J. (2021). Coronavirus disease (COVID-19) and the need to maintain regular physical activity. *The Journal of Sports Medicine and Physical Fitness*, 61 (1), 159-160 https://doi.org/10.23736/S0022-4707.20.11524-X

Aslan, H., & Pekince, H. (2020). Nursing students' views on the COVID-19 pandemic and their percieved stress levels. *Perspectives in psychiatric care*. https://doi.org/10.1111/ppc.12597

Bruine de Bruin, W. (2021). Age differences in COVID-19 risk perceptions and mental health: Evidence from a national US survey conducted in March 2020. *The Journals of Gerontology: Series B*, *76*(2), e24-e29. https://doi.org/10.1093/geronb/gbaa074

Campo-Arias, A., Pedrozo-Cortés, M. J., & Pedrozo-Pupo, J. C. (2020). Pandemic-Related Perceived Stress Scale of COVID-19: An exploration of online psychometric performance *Revista Colombiana de Psiquiatría,* 49(4), 229. https://doi.org/10.1016/j.rcp.2020.05.005

Campo-Arias, A., Pedrozo-Pupo, J. C., & Herazo, E. (2021). Review of the COVID-19 Pandemic-related Perceived Stress Scale (PSS–10–C). *Revista Colombiana de Psiquiatría,* 50(3), 156-157. https://doi.org/10.1016/j.rcp.2021.02.002

Chen, P., Mao, L., Nassis, G. P., Harmer, P., Ainsworth, B. E., & Li, F. (2020). Coronavirus disease (COVID-19): The need to maintain regular physical activity while taking precautions. *Journal of Sport and Health Science*, 9(2), 103-104. https://doi.org/10.1016/j.jshs.2020.02.001

Chyi, H., Mao, S. (2012). The determinants of happiness of China's elderly population. *Journal of Happiness Studies*, *13*(1), 167-185. https://doi.org/10.1007/s10902-011-9256-8

Cohen, S., Kamarck, T. y Mermelstein, R. (1983). A global measure of per-ceived stress. *Journal of Health and Social Behavior, 24*, 385-396. https://doi.org/10.2307/2136404

Denovan, A., Dagnall, N., Dhingra, K., & Grogan, S. (2019). Evaluating the Perceived Stress Scale among UK university students: implications for stress measurement and management. *Studies in Higher Education*, *44*(1), 120-133. https://doi.org/10.1080/03075079.2017.1340445

García-Álvarez, L., de la Fuente-Tomás, L., García-Portilla, M. P., Sáiz, P. A., Lacasa, C. M., Dal Santo, F., ... & Bobes, J. (2020). Early psychological impact of the 2019 coronavirus disease (COVID-19) pandemic and lockdown in a large Spanish sample. *Journal of Global Health*, *10*(2). https://doi.org/10.7189/jogh.10.020505

García-Portilla, P., de la Fuente Tomás, L., Bobes-Bascarán, T., Jiménez Treviño, L., Zurrón Madera, P., Suárez Álvarez, M., ... & Bobes, J. (2021). Are older adults also at higher psychological risk from COVID-19?. *Aging & Mental Health*, 25 (7), 1297-1304. https://doi.org/10.1080/13607863.2020.1805723

Hernandez-Garcia, F., Gongora-Gomez, O., Gonzalez-Velazquez, V. E., Pedraza-Rodriguez, E. M., Zamora-Fung, R., & Herrera, L. A. L. (2021). Stress perceived by students of the medical sciences in Cuba toward the COVID-19 pandemic: results of an online survey. *Revista Colombiana de Psiquiatria,* 30, S0034-7450(21)00068. https://doi.org/10.1016/j.rcp.2021.02.011

Hou, W. K., Lee, T. M. C., Liang, L., Li, T. W., Liu, H., Tong, H., ... & Goodwin, R. (2021). Psychiatric symptoms and behavioral adjustment during the COVID-19 pandemic: evidence from two population-representative cohorts. *Translational psychiatry*, *11*(1), 1-11. https://doi.org/10.1038/s41398-021-01279-w

Jahrami, H., BaHammam, A. S., AlGahtani, H., Ebrahim, A., Faris, M., AlEid, K., ... & Hasan, Z. (2020). The examination of sleep quality for frontline healthcare workers during the outbreak of COVID-19. *Sleep Breath, 25*, 503-511. https://doi.org/10.1007/s11325-020-02135-9

Jiang, J. M., Seng, E. K., Zimmerman, M. E., Sliwinski, M., Kim, M., & Lipton, R. B. (2017). Evaluation of the reliability, validity, and predictive validity of the subscales of the perceived stress scale in older adults. *Journal of Alzheimer's Disease*, *59*(3), 987-996. https://doi.org/10.3233/jad-170289

Kassim, M. A. M., Pang, N. T. P., Mohamed, N. H., Kamu, A., Ho, C. M., Ayu, F., ... & Jeffree, M. S. (2021). Relationship between fear of COVID-19, psychopathology and sociodemographic variables in Malaysian population. *International journal of mental health and addiction*, 1-8. DOI: 10.1007/s11469-020-00444-4

Kecojevic, A., Basch, C. H., Sullivan, M., & Davi, N. K. (2020). The impact of the COVID-19 epidemic on mental health of undergraduate students in New Jersey, cross-sectional study. *PloS one*, *15*(9), e0239696 https://doi.org/10.1371/journal.pone.0239696

Khafagy, G., El Sayed, I., Abbas, S., & Soliman, S. (2020). Perceived Stress Scale Among Adolescents with Polycystic Ovary Syndrome. *International Journal of Women's Health*, *12*, 1253-1258. https://doi.org/10.2147/ijwh.s279245

Knepple Carney, A., Graf, A. S., Hudson, G., & Wilson, E. (2021). Age moderates perceived COVID-19 disruption on well-being. *The Gerontologist*, *61*(1), 30-35. https://doi.org/10.1093/geront/gnaa106

Lazarus, R.S. y Folkman, S. (1984). *Stress, appraisal, and coping*. Nueva York: Springer.

Li, X., Fu, P., Fan, C., Zhu, M., & Li, M. (2021). COVID-19 Stress and Mental Health of Students in Locked-Down Colleges. *International Journal of Environmental Research and Public Health*, *18*(2), 771. https://doi.org/10.3390/ijerph18020771

Limcaoco, R. S. G., Mateos, E. M., Fernandez, J. M., & Roncero, C. (2020). Anxiety, worry and perceived stress in the world due to the COVID-19 pandemic, March 2020. Preliminary results. *MedRxiv,* http://doi.org/10.1101/2020.04.03.20043992

Lorem, G., Cook, S., Leon, D. A., Emaus, N., & Schirmer, H. (2020). Self-reported health as a predictor of mortality: A cohort study of its relation to other health measurements and observation time. *Scientific reports*, *10*(1), 1-9. https://doi.org/10.1038/s41598-020-61603-0

Maroufizadeh, S., Foroudifard, F., Navid, B., Ezabadi, Z., Sobati, B., & Omani-Samani, R. (2018). The Perceived Stress Scale (PSS-10) in women experiencing infertility: A reliability and validity study. *Middle East Fertility Society Journal*, *23*(4), 456-459. https://doi.org/10.1016/j.mefs.2018.02.003

Moscoso, M. S. (1994). La psicología de la salud: Un enfoque multidisciplinario acerca del estrés y cambio conductal. *Revista de Psicología*, *12*(1), 47-72. https://doi.org/10.18800/psico.199401.003

Oducado, R. M., Rabacal, J., Moralista, R., & Tamdang, K. (2021). Perceived Stress Due to COVID-19 Pandemic Among Employed Professional Teachers. *International Journal of Educational Research and Innovation,(15)*, 305-316. http://dx.doi.org/10.46661/ijeri.5284

Pearman, A., Hughes, M. L., Smith, E. L., & Neupert, S. D. (2021). Age differences in risk and resilience factors in COVID-19-related stress. *The Journal of Gerontology: Series B*, *76*(2), e38-e44. https://doi.org/10.1093/geronb/gbaa120

Peters, A., Rospleszcz, S., Greiser, K. H., Dallavalle, M., & Berger, K. (2020). The impact of the COVID-19 pandemic on self-reported health—early evidence from the German National Cohort. *Dtsch Arztebl Int*, *117*, 861-867. https://doi.org/10.3238/arztebl.2020.0861

Qiu, J., Shen, B., Zhao, M., Wang, Z., Xie, B., & Xu, Y. (2020). A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: implications and policy recommendations. *General Psychiatry*, *33*(2). https://doi.org/10.1136/gpsych-2020-100213

Rehman, U., Shahnawaz, M. G., Khan, N. H., Kharshiing, K. D., Khursheed, M., Gupta, K., ... & Uniyal, R. (2021). Depression, anxiety and stress among Indians in times of Covid-19 lockdown. *Community Mental Health Journal*, *57*(1), 42-48. https://doi.org/10.1007/s10597-020-00664-x

Sareen J, Erickson J, Medved MI, et al. (2013). Risk factors for post-injury mental health problems. *Depression & Anxiety,* 30, 321-327. https://doi.org/10.1002/da.22077

Son, C., Hegde, S., Smith, A., Wang, X., & Sasangohar, F. (2020). Effects of COVID-19 on college students' mental health in the United States: Interview survey study. *Journal of Medical Internet research*, *22*(9), e21279. https://doi.org/10.2196/21279

Soraci, P., Lagattolla, F., Parente, G., Guaitoli, E., Chiodi, D., Cimaglia, R., ... & Ascanio, C. (2021). Interplay between COVID-19 outbreak and Psychological Maladjustment: a brief overview. *Journal of Clinical & Developmental Psychology, 3(2),*1-9. https://doi.org/10.6092/2612-4033/0110-2992

Varma, P., Junge, M., Meaklim, H., & Jackson, M. L. (2021). Younger people are more vulnerable to stress, anxiety and depression during COVID-19 pandemic: A global cross-sectional survey. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, *109*, 110236. https://doi.org/10.1016/j.pnpbp.2020.110236

Vera-Villarroel, P., Celis-Atenas, K., Pavez, P., Lillo, S., Bello, F., Díaz, N., López, W. (2012). Money, age and happiness: association of subjective wellbeing with socio-demographic variables. *Revista Latinoamericana de Psicología*, *44*(2), 155-163.

WHO. World Health Organization. (2020). *Mental health and psychosocial considerations during the COVID-19 outbreak (No. WHO/2019-nCoV/MentalHealth/2020.1)*.Retrieved from: https://apps.who.int/iris/handle/10665/331490

WHO. World Health Organization (2021). *Mental health investiment case: a guidance note*. Geneva: World Health Organization and the United Nations Development Programme. https://www.creativecommons.org/licenses/by-nc-sa/3.0/igo

Yan, L., Gan, Y., Ding, X., Wu, J., & Duan, H. (2021). The relationship between perceived stress and emotional distress during the COVID-19 outbreak: Effects of boredom proneness and coping style. *Journal of Anxiety Disorders*, *77*, 102328. https://doi.org/10.1016/j.janxdis.2020.102328

Yu, X., & Yang, R. (2020). COVID-19 transmission through asymptomatic carriers is a challenge to containment. *Influenza and Other Respiratory Viruses, 14(4), 474–475. https://doi.org/10.1111/irv.12743*

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