Suicidal ideation, anxiety, social capital, and sleep among colombians in the first month of COVID-19-related physical isolation

Ideación suicida, ansiedad, capital social y calidad de sueño en colombianos durante el primer mes de aislamiento físico por COVID-19

PSICOGENTE

ISNN 0124-0137
EISSN 2027-212X

RESEARCH ARTICLE

Ubaldo Enrique Rodríguez de Avila - Zuleima Lucía León Valle Guillermo Augusto Ceballos ospino
Universiad del Magdalena

Authors' correspondence details:
rodriguez.ubaldo@gmail.com
zuleimaleon@gmail.com
guillermoceballos@gmail.com

Received: 04-20-20
Accepted: 12-03-20
Published: 01-01-21

Abstract

Objective: To explore suicidal ideation, anxiety, social capital, and quality of sleep among men and women, according to age, in Colombia during the COVID-19 pandemic.

Method: An exploratory online study with 484 subjects was conducted. Four scales were used: Okasha's Suicidality Scale (Okasha-IS), Zung's Self-Rating Anxiety Scale-15 (SAS-15), Personal Social Capital Scale (PSCS), and Pittsburgh Sleep Quality Index (PSQI). The instruments were registered on the internet and administered through WhatsApp, Facebook, and e-mail.

Results: A mild to severe suicidal ideation rate was found among 40% of participants; a mild to severe anxiety rate among 97% of participants; and regular personal social capital among 81% of participants; furthermore, 23% of the participants reported poor sleep quality. Age was inversely associated with IS, SAS, and PSQI values ($p < 0.01$) and directly associated with PSCS ($p < 0.05$). Sex was positively correlated with SAS-15 ($p < 0.01$) and PQSI ($p < 0.05$). The analysis of variance showed a significant difference in IS and PQSI values ($p < 0.01$) in men, whereas a significant difference is identified in IS, SAS-15, and PQSI values ($p < 0.01$) in different age groups of women.

Conclusions: Women are more prone to anxiety and suicidal ideation associated with physical isolation and low social capital, which can trigger major psychological problems. Young people under 20 years of age are at greater risk of suffering from profound psychopathologies, triggering suicide. Based on the results, we recommend the use of the term physical distancing rather than social isolation considering that social relationships are maintained at levels different from physical contact.

Keywords: Suicidal ideation; Anxiety; Social capital; Sleep quality; COVID-19 and physical distancing; Colombia.

Resumen

Objectivo: explorar los niveles de ideación suicida, ansiedad, capital social y calidad de sueño en hombres y mujeres, según edades, en población colombiana durante el primer mes de Aislamiento Físico por pandemia de Covid-19.

Metodo: Estudio exploratorio y en línea, con 484 sujetos. Se utilizaron cuatro Escalas: Escala de Okasha para Suicidalidad (Okasha-IS), ZungSelf-Rating Anxiety Scale-15 (SAS-15), The Personal Social Capital Scale (PSCS) y Pittsburgh Sleep Quality Index (PSQI). Los instrumentos se registraron en la Web y se suministró mediante WhatsApp, Facebook y E-mail.

Resultados: Se encontró un índice de ideación suicida del 40% entre leve a severa. 97% de ansiedad leve a severa. Capital social personal regular (81%) y 23% con poca calidad de sueño. La edad se asoció de manera inversa con valores de IS, SAS y PSQI ($p<0,01$) y de manera directa con PSCS ($p<0,05$). Sexo se correlacionó positivamente con SAS-15 ($p<0,01$) y PQSI ($p<0,05$). Mediante Análisis de Varianza se encontró diferencia significativa en hombres en los valores del IS y PQSI ($p<0,01$) y en mujeres hay diferencia significativa en los valores de IS, SAS-15 y PQSI ($p<0,01$) en diferentes grupos de edades.

Conclusions: Las mujeres son más propensas a sentir ansiedad e ideación suicida asociados con Aislamiento Físico y bajo capital social, lo que puede desencadenar problemas psicológicos mayores. Los jóvenes menores de 20 años siguen siendo un grupo de mayor riesgo a padecer psicopatologías profundas, desencadenando suicidios. El presente estudio se adhiere a la idea de usar el término de distanciamiento Físico y no Aislamiento Social, dado que las relaciones sociales se mantienen desde niveles diferentes al contacto físico.

Palabras clave: Ideación suicida, ansiedad, capital social, calidad de sueño, COVID-19 Y distanciamiento físico Colombia.

How to cite this article (APA):
Rodríguez De Avila, U., León Valle, Z. & Ceballos Ospino, G.. (2021). Ideación suicida, ansiedad, capital social y calidad de sueño en colombianos durante el primer mes de aislamiento físico por COVID-19.[Traducción] *Psicogente 24*(45), 1-18. https://doi.org/10.17081/psico.24.45.4075

1. INTRODUCTION

By the end of December 2019, an outbreak of pneumonia of unknown etiology was spreading in Wuhan (Hubei, China), the causative agent of which was subsequently identified as a new coronavirus and the disease was named COVID-19. It is considered to be related to severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome, caused by a betacoronavirus called SARS-CoV-2 that affects the lower respiratory tract and manifests as pneumonia in humans (Sohrabia, Alsafib, O'Neilla, Khanb, Kerwanc, Al-Jabirc, Iosifidisa, & Aghad, 2020). During February 2020, the COVID-19 pandemic was raging in China's Hubei province, and physical distancing measures were adopted. This circumstance spread throughout the world, and physical isolation became the fundamental strategy to contain the expansion rate of COVID-19 and to prevent health systems in countries like Colombia from collapsing.

Although previous research has emphasized the significant role of social contact in the spread of COVID-19 (Bayer & Kuhn, 2020; Mossong, Hens, Jit, Beutels, Auranen, Mikolajczyk, Massari, Salmaso, Scalia-Tomba, Liu, Eggo, & Kucharski, 2020; Bi, Wu, Mei, Ye, Zou, Zhang, Liu, Wei, Truelove, Zhang, Gao, Cheng, Tang, Wu, Wu, Sun, Huang, Sun, Zhang, Ma, Lessler, & Feng, 2020), social relationships are also recognized as important determinants of health (Berkman & Glass, 2014). Studies have shown the association between social isolation and risky behaviors such as unhealthy dietary intake, smoking, high alcohol intake, and physical inactivity, among multiple other health risk behaviors (Kaplan, Lazarus, Cohen & Leu, 1991; Locher, Ritchie, Roth, Baker, Bodner, & Allman, 2005; Shankar., McMunn, Banks, & Steptoe, 2011; Weyers, Dragano, Mobus, Beck, Stang, Mohlenkamp, & Siegrist, 2010). Most studies have focused on social isolation and loneliness as independent factors, and a few have focused on the relationship between the two as associated factors for mental health (Holst-Algren, Ekholm, Nielsen, Kjær-Ersbøll, Kronborg-Bak, & Tanggaard-Andersen, 2020; Holt-Lunstad, Smith, Baker, Harris, & Stephenson, 2015; Shankar et al., 2011). Social isolation and loneliness can be considered different constructs (Holst-Algren et al., 2020) in that some people may feel lonely despite having frequent social contact while others with infrequent contact may not feel lonely. The social characteristics of interrelationship are based on physical distance and not on social isolation.

Research demonstrates that loneliness and social isolation are associated with a greater risk of mortality (Holst-Algren et al., 2020; Holt-Lunstad et al., 2015), including unhealthy behaviors (Berkman & Glass, 2014; Berkman, Glass, Brissette & Seeman, 2000; Cacioppo, Hawkley, Crawford, Ernst,

Burleson, Kowalewski & Berntson, 2002; Hawkley & Cacioppo, 2010). Living alone and having infrequent social contacts with family and friends are some of the markers of social isolation (Perissinotto & Covinsky, 2014; Shankar, McMunn, Banks, & Steptoe, 2011). While social isolation is an objective and quantifiable measure (Holt-Lunstad et al., 2015), loneliness is the subjective experience of being alone, related to dissatisfaction with the discrepancy between the desired and actual frequency of social contact (De Jong Gierveld & Havens, 2004; Peplau & Perlman, 1982).

Suicidal Ideation has been addressed from multiple perspectives, such as mental health and characteristics of adolescents (Bahamón, Alarcón-Vásquez, Reyes-Ruiz, Uribe-Alvarado, García-Galindo, & Trejos-Herrera, 2018; Rodríguez, Rodrigues de França Campos, Chionbacanga-Nafital, Ceballos-Ospino, & Paba-Barbosa, 2019). Empirical evidence based on daily life suggests that various problems can lead to suicide, and to counteract it during a pandemic, its possibility must be identified in the ideation phase (i.e., suicidal thoughts).

Various studies have shown that large outbreaks of new or serious infectious diseases are associated with levels of anxiety posing much greater risk than getting infected or dying from infection (Leung, Lam, Ho, Ho, Chan, Wong & Hedley, 2003). In addition to the health problems that the COVID-19 pandemic has brought, there is evidence of the symptoms of anxiety (Xiao, Zhang, Kong, Li & Yang, 2020A, 2020B; Cai, Tu, Ma. Chen, Fu, Jiang & Zhuang, 2020) and anxiety and depression (Liu, Yang, Zhang, Xu, Dou, Zhang, 2020; Zhu, Sun, Zhang, Wang, Fan, Yang, Xiao & Li, 2020) resulting from it in addition to other significant psychological or mental impacts (Liu, Ren, Yan, Li, Xu, Yu, Qu, Wang, Tian, Yang, Yao, Tan, Jiang & Tan, 2020; Gao, Zheng, Jia, Chen, Mao, Chen, Wang, Fu & Dai, 2020; Brooks, Webster, Smith, Woodland, Wessely, Greenberg & Rubin, 2020; Guo, Liao, Wang, Li, Guo, Tong, Guan, Zhou, Wu, Zhang & Gu, 2020; Liu, Liu & Zhong, 2020).

It is now known that psychological well-being and sleep quality are affected by various factors. Social variables such as financial burden, family support, social support, and social capital are significant in this context (Mehnert, Lehmann, Graefen, Huland, & Koch, 2010). Several recent studies have focused on the influence of social factors on mental health (Guruge, Thomson, George, & Chaze, 2015), but there is little research on the relationship between social capital and health (McDonald, 2018; Prati & Pietrantoni, 2010).

The concept of *social capital* was first proposed by the French sociologist, Portes, in 1980 (Portes, 1998), and in 1997, Lynch developed the concept of social capital as the will to generate social cohesion, trust, and participation in community activities (Xiao, Zhang, Kong, Li, & Yang, 2020A, 2020B; Lynch

& Kaplan, 1997). Studies make a distinction between social support and social capital. Social support represents the size and source of social networks of people who help others, as well as emotional, material, and informational support functions (Khazaeian, Kariman, Ebadi, & Nasiri, 2017). Social capital includes social trust, belonging, and social participation. The effect of social capital on psychological well-being has been demonstrated by previous studies (Harpham, Grant & Rodríguez, 2017).

Sleep quality is also a key indicator of individuals' health, emotional adjustment, and overall performance (Machado-Duque, Echeverri-Chabur & Machado-Alba, 2015; Niño, Barragán, Ortiz, Ochoa, & González, 2018; Prichard & Hartmann, 2019). Good quality sleep maintains optimal immune function to prevent infections (Lange, Dimitrov & Born, 2010). Thus, aspects of psychological well-being such as anxiety and sleep are affected by significant social factors (Yao, Yu, Cheng, & Chen, 2008; Brugha, 1990; Prati & Pietrantoni, 2010; Kent de Grey, Uchino, Trettevik, Cronan, & Hogan, 2018; Peng, Lee, Tsai, Yang, Morisky, Tsai, Weng, & Lyu, 2010). Current studies have reported the relationship between psychological factors such as anxiety, for which suicidal ideation is included as an important psychological symptom, and stress and the quality of sleep (Bandura, 1977; Dahlgren, Kecklund & Akerstedt, 2005; Chen, Zhang & Xu, 2019).

In a study conducted in China (Yuan, Liao, Huang, Jiang, Zhang, Wang & Zhao, 2020), over a period of two weeks, it was found that frontline health workers and other inhabitants of the Hubei province were less anxious about the COVID-19 pandemic; however, their sleep quality did not improve. Researchers point out that despite public awareness, high anxiety levels affect quality of life during epidemics, including periods when sections of the population are under quarantine. Therefore, health education should be combined with psychological counseling for people with vulnerabilities.

The COVID-19 pandemic became a stressor, particularly because it was a new viral infection without a vaccine that could only be treated based on symptoms. In Colombia, there are no robust studies on the role of social capital in well-being or the ways in which suicidal ideation and anxiety manifest themselves in individuals subjected to physical isolation, even affecting their sleep quality, especially in the context of acute infectious diseases. Therefore, this study aimed to explore suicidal ideation, anxiety, social capital, and sleep quality in men and women, segmented by age, as risk factors for a Colombian sample during physical isolation in the context of the COVID-19 pandemic. The exploratory hypothesis is that there are significant differences between levels of suicidal ideation, anxiety, and social capital between men and women and among different age ranges.

2. METHOD

2.1. Design

A quantitative, exploratory online study was conducted. The instruments were registered on the internet and administered through WhatsApp, Facebook, and e-mail. The study took place between 2:00 PM on March 29, 2020, and 2:00 PM on April 6, 2020 (Colombian local time), during the period of mandatory physical isolation decreed by the Colombian government in the event of the COVID-19 pandemic.

2.2. Instruments

The different instruments used in this study are described in detail below.

2.2.1. Okasha's Suicidality Scale (1981)

This instrument measures the suicidal ideation index and consists of four items, which are answered on a Likert-type scale ranging from 1 to 4 (i.e., never, rarely, occasionally, and frequently). In the present study, the total score is averaged to obtain the ranges of suicidal ideation (<1 = Normal; 1.01–2 = Mild to moderate; 2.01–3 = Moderate to severe; 3.01–4 = Extreme). In the exploratory factor analysis, the Cronbach's alpha (α) of the suicidal ideation index and the Kaiser–Meyer–Olkin (KMO) measurement sample or the KMO coefficient (Kaiser, 1974) were adequate (α = 0.85; KMO = 0.793). Bartlett's sphericity test was also adequate [X2 (6) = 583.504; p < 0.01], and the total variance explained for a single identified factor was 62.83%. This allows us to conclude a good psychometric performance of the suicidal ideation index, confirming a good psychometric fit.

2.2.2. Zung's Self-Rating Anxiety Scale-15 (SAS-15), Spanish version

The SAS-15 is a measure designed by Zung (1971) to quantify the level of anxiety of subjects experiencing its related symptoms. It is a self-administered test originally containing 20 questions, scored on a scale of 1–4 (Never, Sometimes, Most of the time, and Always). This scale has been widely used in the scientific community and is currently being increasingly adopted because of the COVID-19 pandemic situation (Xiao et al., 2020A, 2020B). In the present study, the total score is averaged to obtain the SAS-15 ranges (<1 = Normal; 1.01–2 = Mild to moderate; 2.01–3 = Moderate to severe; 3.01–4 = Extreme). Through a previous pilot in which 449 subjects participated, the AFE allowed the scale to be reduced to 15 factors with an adequate psychometric adjustment, where α = 0.81 and KMO = 0.876. Further, the Bartlett's sphericity test was also adequate [X^2 (119) = 1179; p < 0.01], and the total variance explained with a single identified factor was

27.9%, which confirms a good psychometric fit.

2.2.3. Personal Social Capital Scale

The PSCS is a Chinese scale (Chen, Stanton, Gong, Fang & Li, 2009) based on a conceptual framework that social capital is the part of a person's network connections that are trustworthy, reciprocal, and rich in resources (Bourdieu, 1986; Coleman, 1988; De Silva, McKenzie, Harpham & Huttly, 2005; Harpham, Grant & Thomas, 2002; Putnam, 1995). To the best of our knowledge, there is no Spanish version of the PSCS. This version consists of 42 items measuring 10 subconstructs (factors), of which 5 subconstructs measure social capital and another 5 subconstructs measure bridging social capital. The responses are given inversely in Likert-type form, ranging from 4 to 0 (i.e., many, more than average, less than average, average, and few for two subconstructs and all, most, some, few, and none for eight subconstructs). For both the subconstructs and the general PSCS index, the scores were averaged to obtain the ranges of the PSCS in Spanish (<1 = Low; 1.01–2 = Regular; 2.01–3 = Moderate; 3.01–4 = Optimal). Strict psychometric evaluation for the original Chinese scale, including confirmatory factor analysis, indicated that the PSCS had excellent reliability, clear structural validity, and adequate predictive validity (Chen et al., 2009). In this research, the AFE verified an $\alpha = 0.94$ and a KMO = 0.89 and the Bartlett's sphericity test was also adequate [X^2 (861) = 13524.551; $p < 0.01$], and the total variance explained with 10 identified factors was 69.4%, which confirms a good psychometric fit.

2.2.4. Pittsburgh Sleep Quality Index (PSQI) Spanish version

The PSQI (Buysse et al., 1989) contains a total of 19 questions, grouped into 10 questions. The 19 questions are combined to form 7 areas (PSQI1: Subjective sleep quality, PSQI2: Sleep latency, PSQI3: Sleep duration, PSQI4: Habitual sleep efficiency, PSQI5: Sleep disturbance, PSQI6: Sleep medication, PSQI7: Dysfunction during the day), with their corresponding scores showing a range between 0 and 3 points. In all cases, a score of "0" indicates ease while a score of "3" indicates severe difficulty within a respective area. The scores of the 7 areas are finally added to give an overall PSQI score (PSQI-Total), which ranges from 0 to 21 points. "0" reflects ease of sleeping and "21" implies severe difficulty in all areas. These values were didactically grouped into four ranges: 1 = severely easy (1–5 points), moderately easy (6–10 points), moderately difficult (11–15), severely difficult (16–21 points). In this research, the AFE verified an $\alpha = 0.724$ and a KMO = 0.784; the Bartlett's sphericity test was also adequate [$X^2(21) = 674.183$; $p < 0,01$], and the total explained variance was 39.6%, which confirms a good psychometric fit.

2.3. Participants

Initially, 550 subjects, who were selected through convenience sampling, participated in the study. Of these, 66 subjects were excluded because they were inhabitants of countries other than Colombia. The sample was made up of 484 Colombian subjects, aged between 16 and 70 years (mean = 30; standard deviation = 11). They were categorized into four age groups, in relation to the different control segments in the face of physical isolation under the COVID-19 pandemic conditions in Colombia: Group 1 (24.4%): <20 years old; Group 2 (37.6%): 21–30 years old; Group 3 (20%): 31–40 years old; and Group 4 (18%): >40 years of age. In the sample, 26% were men and 74% women. Approximately 70% of the participants live in the Colombian Caribbean and 30% reside in the rest of the country. The disproportion in the number of men and women is due to the type of sampling and does not entirely reflect the situation.

2.4. Data analysis

Percentage descriptive analysis was used. The mean and standard deviation were estimated for all interval or proportional variables. The Kolmogorov–Smirnov test was applied to these variables to determine their distribution, and non-normal distribution was verified for all variables. For this reason, it was decided to carry out the Spearman's correlation study; for the dichotomous variable (gender), the Kendall Tau-b correlation was calculated. The independent variables for this study are gender and age, and the variables anxiety, suicidal ideation, social capital, and sleep quality are treated as dependent variables. For all variables, inter-group variance was verified using the Kruskal–Wallis and U Mann–Whitney tests with adjusted probability as a post hoc analysis. The entire statistical analysis was performed using the IBM-SPSS version 22 program.

2.5. Ethical considerations

The research was carried out in accordance with Resolution 8430 that regulates health research and following the rules of the Colombian College of Psychologists, in agreement with Law 1090 of 2006. The online informed consent was signed, and confidential handling of all the information collected was ensured.

2.6. Procedure

The problem was defined, and the questionnaire was created online; it was distributed through WhatsApp, Facebook, and e-mail. The information was collected from 2:00 PM on March 29, 2020, to 2:00 PM on April 6, 2020 (Colombian local time).

3. RESULTS

The data related to the variables studied are described below.

(Table 1)

Table 1.

Descriptive statistics of the variables

SCALE	TOTAL	GENDER		AGE (YEARS)			
		MEN (N = 126)	WOMEN (N = 358)	<20 (N = 118)	21–30 (N = 182)	31–40 (N = 97)	>40 (N = 87)
Okasha-SI (M;SD)	1.40; 0.61	1.29; 0.54	1.40; 0.61	1.63; 0.75	1.43; 0.59	1.20; 0.44	1.09; 0.22
Normal (%)	58.2	63.5	56.4	37.3	52.2	75.3	80.5
Mild to moderate(%)	28.9	27	29.6	39	33	17.5	19.5
Moderate to severe (%)	10.5	7.1	11.7	16.9	13.2	7.2	0
Extreme (%)	2.3	2.4	2.2	6.8	1.6	0	0
SAS-15 (M;SD)	1.61; 0.40	1.45; 0.32	1.61; 0.40	1.75; 0.41	1.60; 0.38	1.46; 0.45	1.38; 0.26
Normal (%)	2.5	3.2	2.2	0	1.6	6.2	3.4
Mild to moderate(%)	84.9	91.3	82.7	77.1	84.6	87.6	93.1
Moderate to severe (%)	12.4	4.8	15.1	22.9	13.2	6.2	3.4
Extreme (%)	2	0.8	0	0	0.5	0	
PSCS (M;SD)	1.69; 0.64	1.72; 0.59	1.69; 0.64	1.57; 0.58	1.75; 0.62	1.70; 0.67	1.77; 0.64
Low (%)	14.3	9.7	15.9	22.9	9.3	15.5	11.8
Regular (%)	56.2	68.5	52	54.2	56.6	56.7	57.6
Moderate (%)	25.9	16.9	29.1	22	30.2	21.6	27.1
Optimal (%)	0.4	4.8	3.1	0.8	3.8	6.2	3.5
PSQI-Total (M;SD)	7.7: 4.02	6.81; 3.72	7.71; 4.02	8.61; 3.8	7.77; 3.9	6.70; 3.8	6.21; 4.01
Severely easy (%)	36.4	39.7	35.2	21.2	32.6	49.5	50.6
Moderately easy (%)	40.4	42.9	39.4	44.9	43.6	35.1	33.4
Moderately difficult (%)	20.3	15.9	21.8	28.8	21.5	13.4	13.8
Severely difficult (%)	2.9	1.6	3.4	5.1	2.2	2.1	2.3

M = Mean; SD = Standard Deviation

Nine significant correlations were validated between the variables studied. Further, a significant difference was found in relation to gender for the anxiety (SAS-15) and sleep quality (PSQI-Total) variables and in relation to age; a significant difference was found for the suicidal ideation index (Okasha-IS), anxiety (SAS-15), and sleep quality (PSQI-Total) (Table 2).

Table 2.

Correlation and variance for gender and age

SCALE	CORRELATION COEFFICIENT				INTRA-GROUP ANALYSIS OF VARIANCE			
	GENDER			AGE				
	OKASHA-IS	SAS-15	PSCS	PSQI-TOTAL	X2 (GL)	P	X2 (Df)	P
Okasha-IS					3.228(1)	0.073	58.161(3)	<0.01**
SAS-15	0.355				16.277(1)	<0.01**	56.863(3)	<0.01**
PSCS	−.029	−.062			0.087(1)	0.768	6.534(3)	0.08
PSQI-Total	.319	.583	−.049		4.265(1)	0.039*	26.963(3)	<0.01**
Gender	.075	.154	−.011	.080				
Age	−.353	−.333	.099	−.223				

X^2 = Chi square of Kruskal–Wallis; Df = Degrees of freedom; p = Probability

*p < 0.05, **p = 0.01

Grouping the results related to gender according to age, a significant difference was for the anxiety variable only in the groups of subjects under 20 years of age and those in the 21–30 years age range (Table 3).

Table 3.

Analysis of variance for age grouped by gender

SCALE	AGE (GROUPED BY GENDER)			
	<20 (N=118)	21-30 (N=182)	31-40 (N=97)	>40 (N=87)
Okasha-IS [U (p)]	1460 (0,37)	3713.5 (0.08)	934 (0.52)	743 (0.85)
SAS-15 [U (p)]	1802 (0.003)*	4129.5 (0.003)*	1063 (0.11)	2817 (0.66)
PSCS [U (p)]	5234 (0.99)	3582 (0.24)	691 (0.12)	629 (0.35)
PSQI-Total [U (p)]	5321 (0.59)	3620 (0.16)	934 (0.62)	958 (0.05)

U = U Mann–Whitney chi square; p = probability

* significant probability

After a post hoc analysis for independent samples with non-normal distribution, with the adjusted probability of the Kruskal–Wallis test, grouped by gender and comparing age groups, a significant difference was found in men for the suicidal ideation and sleep quality variables. As for women, a significant difference was found in the suicidal ideation, anxiety, and sleep quality variables for different age groups (Figure 1).

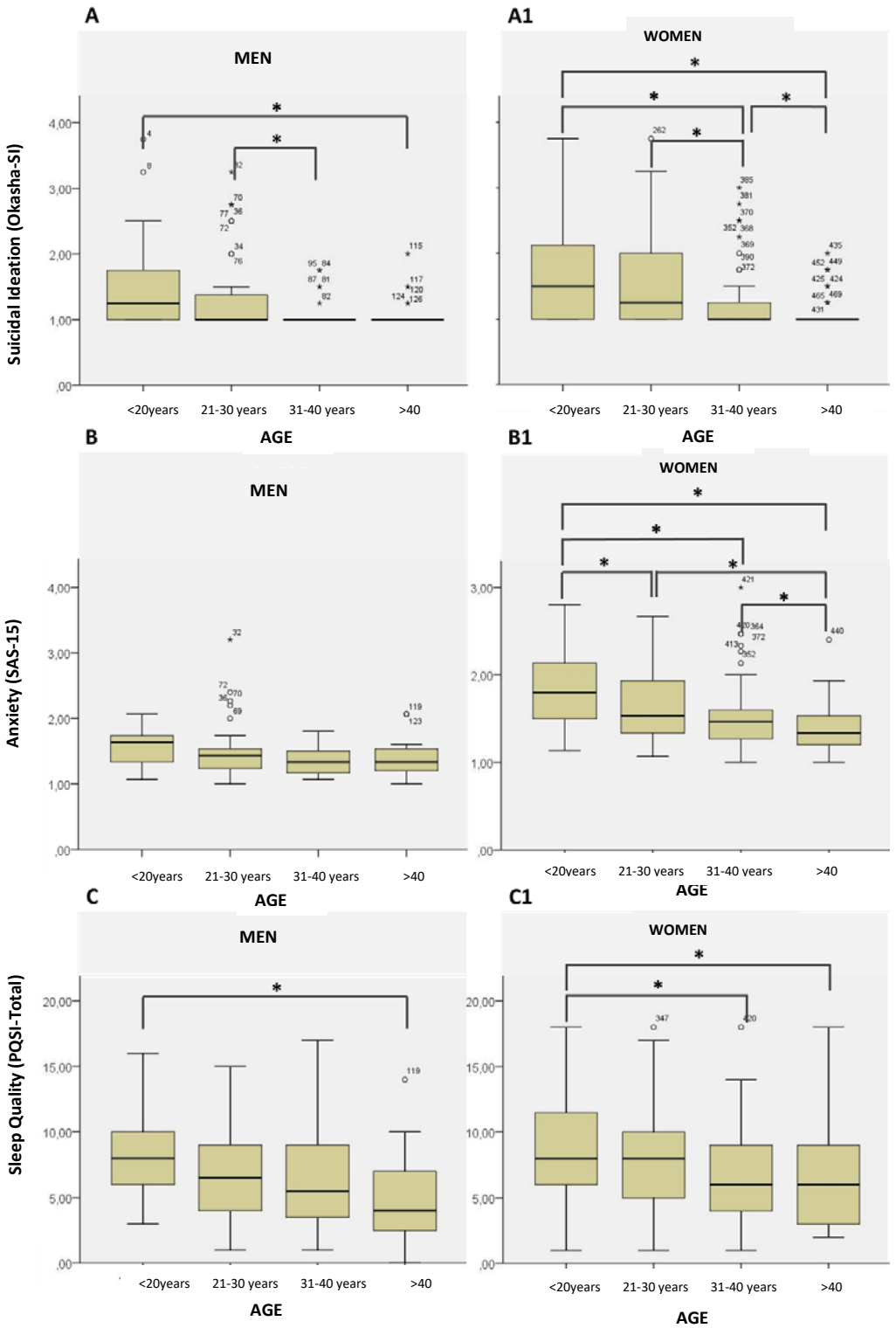

Figure 1. Boxplot and post hoc analysis of the study variables segmented by gender and age.

A, B, and C: Boxplot for men for the different variables analyzed. **A1, B1, and C1:** Boxplot for women for the different variables analyzed. *****p < 0.01 (Kruskal–Wallis test was applied, and the adjusted probability *p* was determined).

4. DISCUSSION

The results show that around 40% of the subjects present mild to severe suicidal ideation and 2% present severe suicidal ideation, with women showing the highest rate of suicidal ideation. The subgroup under 20 years old represents the highest risk group for extreme suicidal ideation, with 6.8%. However, the analysis of variance does not show a significant difference for the gender groups, while a significant difference was found for the age subgroups. The post hoc analysis confirms a significant difference between the different age groups, such that young people under 20 years of age (men and women) are the highest risk group for suicidal ideation.

The SAS score shows that around 97% of participants present mild to severe anxiety, and women have the highest levels in relation to men, which is confirmed by analysis of variance. The post hoc analysis shows that there is a significant difference between men and women; however, the adjusted probability of Kruskal–Wallis indicates that there is no significant difference in the age subgroup of men while, for women, the highest risk group is younger women, with anxiety levels decreasing as age increases. These results are consistent with recent research findings (Xiao et al., 2020A, 2020B; Cai et al., 2020; Liu, D, et al., 2020; Zhu et al., 2020; Liu, X, et al. 2020; Gao et al., 2020; Brooks et al., 2020; Guo et al., 2020; Liu, Liu & Zhong, 2020).

It was found that personal social capital is close to 81% at a normal to moderate level, and women present higher levels. People between the ages of 31 and 40 years show the best indices at the optimal level in the PSCS score. The analysis of variance does not allow us to identify a significant difference in terms of gender and age. However, it can be considered a possible predictive factor of anxiety, suicidal ideation, and sleep quality, as shown in previous results (Bayer & Kuhn, 2020; Liu et al., 2020; Bi et al., 2020). Further, 23% of the participants had difficulty sleeping. The analysis of variance using the adjusted Kruskal–Wallis probability shows that there is a significant difference between the subgroups of ages under 20 and over 40 years. For women, the behavior of the sleep quality score is the same as for men, in addition to the difference between those under 20 years old and the group of 31–40 years old. Differences based on gender could not be

evidenced. This proves that young people have an easier time sleeping than adults; the findings of this study confirm previous results (Xiao et al., 2020A, 2020B).

5. CONCLUSION

The Colombian women studied during the first month of the pandemic were found to be more prone to feeling anxiety and suicidal ideation, which, combined with physical isolation and low social capital, can trigger greater problems in psychological adjustment.

Young people under 20 years of age are at higher risk of suffering profound psychopathologies, which can lead to suicides. It is necessary to design emotional support programs and strengthen existing ones, opening comprehensive care mechanisms that consider psychological and social factors so that the situation is addressed at the medical and epidemiological levels.

It is recommended that future research should focus on the expansion of other study variables to include family formation, depressive symptoms, and other sociological variables, to determine the relationship between variables.

Further, the term physical distancing, rather than social isolation, is recommended in this study, considering that the latter condition occurs when a person involuntarily distances themselves completely from their environment. In the current scenario, social relations are maintained online through different social networks. Thus, social isolation is a complex construct that has different connotations from the meaning popularized by informative and governmental systems, in accordance with previous research findings (Holst-Algren et al., 2020; Holt-Lunstad et al., 2015).

Conflict of interest: The researchers have no conflicts of interest to declare.

Acknowledgments: We would like to thank the Cognition and Education group and the Health Psychology and Psychiatry Research Group from the Faculty of Health Sciences, Department of Psychology, Magdalena University, Santa Marta, Colombia.

Funding: This work received funding from Magdalena University.

REFERENCES

Bahamón, M. J., Alarcón-Vásquez, Y., Reyes Ruiz, L., Uribe Alvarado, J. I., & García Galindo, C. (2018). Prácticas parentales como predictoras de la ideación suicida en adolescentes colombianos [Parenting practices as predictive factors of suicidal ideation in Colombian adolescents]. *Psicogente*, *21*(39), 50–61. https://doi.org/10.17081/psico.21.39.2821

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191–215. https://doi.org/10.1037/0033-295x.84.2.191

Bayer, C., & Kuhn, M. (2020). Intergenerational ties and case fatality rates: A cross-country analysis. ECONtribute. https://selten.institute/wpcontent/uploads/2020/03/ECONtribute_corona_bayer_kuhn_study_2020.pdf

Berkman, L. F., & Glass, T. (2014). Social integration, social networks, social support, and health. *Social Epidemiology*, *1*, 137–173. https://doi.org/10.4135/9781412952576.n192

Berkman, L. F., Glass, T., Brissette, I., & Seeman, T. E. (2000). From social integration to health: Durkheim in the new millennium. *Social Science and Medicine*, *51*(6), 843–857. https://doi.org/10.1016/S0277-9536(00)00065-4

Bi, O., Wu, Y., Mei, S., Ye, C., Zou, X., Zhang, Z., Liu, X., Wei, L., Truelove, S., Zhang, T., Gao, W., Cheng, C., Tang, X., Wu, X., Wu, Y., Sun, B., Huang, S., Sun, Y., Zhang, Y., Ma, T., Lessler, J., & Feng, T. (2020). Epidemiology and transmission of Covid-19 in Shenzhen China: Analysis of 391 cases and 1,286 of their close contacts. *medRxiv*, reprint https://doi.org/10.1101/2020.03.03.20028423

Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241–258). Greenwood Press. http://www.socialcapitalgateway.org/sites/socialcapital-gateway.org/files/data/paper/2016/10/18/rbasicsbourdieu1986-theformsofca-pital.pdf

Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *The Lancet*, *395*(10227), 912–920. https://doi.org/10.1016/S0140-6736(20)30460-8

Brugha, T. (1990). Social networks and social support. *Current Opinion in Psychiatry*, *3*, 264–268. https://psycnet.apa.org/record/2011-28192-020

Buysse, D. J., Reynolds, C. F., Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh Sleep Quality Index: A new instrument for psychiatric practice and research. *Psychiatry Research*, *28*(2), 193–213. https://doi.org/10.1016/0165-1781(89)90047-4

Cai, H., Tu, B., Ma., Chen, L., Fu, L., Jiang, Y., & Zhuang. (2020). Psychological impact and coping strategies of frontline medical staff in Hunan between January and March 2020 during the outbreak of coronavirus disease 2019 (COVID19) in Hubei, China. *Med SciMonit*, *26*, e924171. https://doi.org/10.12659/MSM.924171

Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, *94*(S 1), S95–S120. https://doi.org/10.1086/228943

Chen, X., Stanton, B., Gong, J., Fang, X., & Li, X. (2009). Personal Social Capital Scale: An instrument for health and behavioral research. *Health Education Research*, *24*(2), 306–317. https://doi.org/10.1093/her/cyn020

Chen, X., Zhang, Y., Xu, X., Wang, W., Yan, H., Li, S., & Yang, N. (2019). Mediating roles of anxiety, self-efficacy, and sleep quality on the relationship between patient-reported physician empathy and inflammatory markers in ulcerative colitis

patients. *Medical Science Monitor*, *25*, 7889–7897.
Cacioppo, J. T., Hawkley, L. C., Crawford, L. E., Ernst, J. M., Burleson, M. H., Kowalewski, R. B., Malarkey, W. B., Van Cauter, E., & Berntson, G. G. (2002). Loneliness and health: Potential mechanisms. *Psychosomatic Medicine*, *64*(3), 407–417
Dahlgren, A., Kecklund, G., & Akerstedt, T. (2005). Different levels of work-related stress and the effects on sleep, fatigue and cortisol. *Scandinavian Journal of Work, Environment and Health*, *31*(4), 277–285. https://www.jstor.org/stable/40967503?seq=1
De Jong Gierveld, J., & Havens, B. (2004). Cross-national comparisons of social isolation and loneliness: Introduction and overview. *Canadian Journal on Aging*, *23*(2), 109–113. https://doi.org/10.1353/cja.2004.0021
De Silva, M. J., McKenzie, K., Harpham, T., & Huttly, S. R. (2005). Social capital and mental illness: A systematic review. *Journal of Epidemiology and Community Health*, *59*(8), 619–627. https://doi.org/10.1136/jech.2004.029678
Gao, J., Zheng, P., Jia, Y., Chen, H., Mao, Y., Chen, S., Wang, Y., Fu, H., & Dai, J. (2020). Mental health problems and social media exposure during COVID-19 outbreak. *The Lancet*. http://doi.org/10.2139/ssrn.3541120
Guo, J., Liao, L., Wang, B., Li, X., Guo, L., Tong, Z., Guan, Q., Zhou, M., Wu, Y., Zhang, J., & Gu, Y. (2020). Psychological effects of COVID-19 on hospital staff: A national cross-sectional survey of China Mainland. *The Lancet*. https://doi.org/10.2139/ssrn.3550050
Guruge, S., Thomson, M. S., George, U., & Chaze, F. (2015). Social support, social conflict, and immigrant women's mental health in a Canadian context: A scoping review. *Journal of Psychiatric and Mental Health Nursing*, *22*(9), 655–667. https://doi.org/10.1111/jpm.12216
Harpham, T., Grant, E., & Thomas, E. (2002). Measuring social capital within health surveys: Key issues. *Health Policy and Planning*, *17*(1), 106–111. https://doi.org/10.1093/heapol/17.1.106
Harpham, T., Grant, E., & Rodriguez, C. (2017). Mental health and social capital in Cali, Colombia. *Social Science and Medicine*, *58*(11), 2004: 2267–2277. https://doi.org/10.1016/j.ssmph.2020.100546
Hawkley, L. C., & Cacioppo, J. T. (2010). Loneliness matters: A theoretical and empirical review of consequences and mechanisms. *Annals of Behavioral Medicine*, *40*(2), 218–227. https://doi.org/10.1007/s12160-010-9210-8
Holst-Algren, M., Ekholm, O., Nielsen, L., Kjær-Ersbøll, A., Kronborg-Bak, C., & Tanggaard-Andersen, P. (2020). Social isolation, loneliness, socioeconomic status, and health-risk behaviour in deprived neighbourhoods in Denmark: A cross-sectional study. *SSM – Population Health*, *10*, 1–9.
Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: A meta-analytic review. *Perspectives on Psychological Science*, *10*(2), 227–237. https://doi.org/10.1177/1745691614568352
Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, *39*(1), 31–36. https://doi.org/10.1007/BF02291575
Kaplan, G. A., Lazarus, N. B., Cohen, R. D., & Leu, D. J. (1991). Psychosocial factors in the natural history of physical activity. *American Journal of Preventive Medicine*, *7*(1), 12–17. https://www.ncbi.nlm.nih.gov/pubmed/1867895
Kent de Grey, R. G., Uchino, B. N., Trettevik, R., Cronan, S., & Hogan, J. N. (2018). Social support and sleep: A meta-analysis. *Health Psychology*, *37*(8), 787–798. https://doi.org/10.1037/hea0000628
Khazaeian, S., Kariman, N., Ebadi, A., & Nasiri, M. (2017). The impact of social capital and social support on the health of female-headed households: A systematic review. *Electronic Physician*, *9*(12), 6027–6034. https://doi.org/10.19082/6027
Lange, T., Dimitrov, S., & Born, J. (2010). Effects of sleep and circadian rhythm on the

human immune system. *Annals of the New York Academy of Sciences*, *1193*, 48–59. https://www.jimmunol.org/content/158/9/4454.long

Leung, G. M., Lam, T. H., Ho, L. M., Ho, S. Y., Chan, B. H., Wong, I. O., & Hedley, A. J. (2003). The impact of community psychological responses on outbreak control for severe acute respiratory syndrome in Hong Kong. *Journal of Epidemiology and Community Health*, *57*(11), 857–863. https://doi.org/10.1136/jech.57.11.857

Liu, C., Yang, Y., Zhang, X., Xu, X., Dou, Q., & Zhang, W. (2020). The prevalence and influencing factors for anxiety in medical workers fighting COVID-19 in China: A cross-sectional survey. *The Lancet*. http://doi.org/10.2139/ssrn.3548781

Liu, D., Ren, Y., Yan, F., Li, Y., Xu, X., Yu, X., Qu, W., Wang, Z., Tian, B., Yang, F., Yao, Y., Tan, Y., Jiang, R., & Tan, S. (2020). Psychological impact and predisposing factors of the 2019 coronavirus disease pandemic (COVID-19) on the general public in China. http://doi.org/10.2139/ssrn.3551415

Liu, X., Liu, J., & Zhong, X. (2020). Psychological state of college students during COVID-19 epidemic. *The Lancet*. http://doi.org/10.2139/ssrn.3552814

Liu, Y., Eggo, R., & Kucharski, A. (2020). Secondary attack rate and superspreading events for sars-cov-2. *The Lancet*, *395*, 30462–30461.

Locher, J. L., Ritchie, C. S., Roth, D. L., Baker, P. S., Bodner, E. V., & Allman, R. M. (2005). Social isolation, support, and capital and nutritional risk in an older sample: Ethnic and gender differences. *Social Science and Medicine*, *60*(4), 747–761. https://doi.org/10.1016/j.socscimed.2004.06.023

Lynch, J. W., & Kaplan, G. A. (1997). Understanding how inequality in the distribution of income affects health. *Journal of Health Psychology*, *2*(3), 297–314. https://doi.org/10.1177/135910539700200303

Machado-Duque, M. E., Echeverri Chabur, J. E., & Machado-Alba, J. E. (2015). Somnolencia diurna excesiva, mala calidad del sueño y bajo rendimiento académico en estudiantes de Medicina [Excessive daytime sleepiness, poor sleep quality and low academic performance in medical students]. *Revista Colombiana de Psiquiatría*, *44*(3), 137–142. https://doi.org/10.1016/j.rcp.2015.04.002

McDonald, K. (2018). Social support and mental health in LGBTQ adolescents: A review of the literature. *Issues in Mental Health Nursing*, *39*(1), 16–29. https://doi.org/10.1080/01612840.2017.1398283

Mehnert, A., Lehmann, C., Graefen, M., Huland, H., & Koch, U. (2010). Depression, anxiety, post-traumatic stress disorder and health-related quality of life and its association with social support in ambulatory prostate cancer patients. *European Journal of Cancer Care*, *19*(6), 736–745. https://doi.org/10.1111/j.1365-2354.2009.01117.x

Mossong, J., Hens, N., Jit, M., Beutels, P., Auranen, K., Mikolajczyk, R., Massari, M., Salmaso, S., Scalia-Tomba, G., Wallinga, J., Heijne, J., Sadkowska-Todys, M., & Rosinska, M. (2008). Social contacts and mixing patterns relevant to the spread of infectious diseases, *PLoS Medicine*, *5*(3).

Niño, J., Barragán, M., Ortiz, J., Ochoa, M., & González, H. (2018). Factores asociados con somnolencia diurna excesiva en estudiantes de Medicina de una institución de educación superior de Bucaramanga [Factors associated with excessive daytime sleepiness in medical students attending a higher education institution from Bucaramanga]. *Revista Colombiana de Psiquiatría*, *260*, 1–10. https://doi.org/10.1016/j.rcp.2017.12.002

Okasha, A., Lotaif, F., & Sadek, A. (1981). Prevalence of suicidal feelings in a sample of nonconsulting medical students. *Acta Psychiatrica Scandinavica*, *63*(5), 409–415. https://www.ncbi.nlm.nih.gov/pubmed/7315487

Peng, E. Y., Lee, M. B., Tsai, S. T., Yang, C. C., Morisky, D. E., Tsai, L. T., Weng, Y. L., & Lyu, S. Y. (2010). Population-based post-crisis psychological distress: An example from the SARS outbreak in Taiwan. *Journal of the Formosan Medical Association*, *109*(7), 524–532. https://doi.org/10.1016/S0929-6646(10)60087-3

Peplau, L. A., & Perlman, D. (1982). Loneliness: A sourcebook of current theory, research, and therapy. Wiley.

Perissinotto, C. M., & Covinsky, K. E. (2014). Living alone, socially isolated or lonely–what are we measuring? *Journal of General Internal Medicine*, *29*(11), 1429–1431. https://doi.org/10.1007/s11606-014-2977-8

Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology*, *24*(1), 1–24. Retrieved from https://www.annualreviews.org/doi/abs/10.1146/annurev.soc.24.1.1

Prati, G., & Pietrantoni, L. (2010). The relation of perceived and received social support to mental health among first responders: A meta-analytic review. *Journal of Community Psychology*, *38*(3), 403–417. https://doi.org/10.1002/jcop.20371

Prichard, J. R., & Hartmann, M. E. (2019). Follow-up to Hartmann & Prichard: Should universities invest in promoting healthy sleep? A question of academic and economic significance. *Sleep Health*, *5*(4), 320–325.

Putnam, R. D. (1995). Tuning in, tuning out: The strange disappearance of social capital in America. *PS: Political Science and Politics*, *28*(4), 664–683. https://doi.org/10.1017/S1049096500058856

Rodríguez, U., Rodrigues-deFrança Campos, F., Chionbacanga-Nafital, A., Ceballos-Ospino, G., & Paba-Barbosa, C. (2019). Las inteligencias, emociones y cronotipo, ¿explican el desempeño académico en universitarios? [Do intelligencies, emotions and chronotype affect the academic performance of university students]. *Educación y Humanismo*, *22*(38), 1–21. https://doi.org/10.17081/eduhum.22.38.3636

Shankar, A., McMunn, A., Banks, J., & Steptoe, A. (2011). Loneliness, social isolation, and behavioral and biological health indicators in older adults. *Health Psychology*, *30*(4), 377–385. https://doi.org/10.1037/a0022826

Sohrabi, C., Alsafi, Z., O'O'Neill, N., Khan, M., Kerwan, A., Al-Jabir, A., Iosifidis, C., & Agha, R. (2020). World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). *International Journal of Surgery*, *76*, 71–76. https://doi.org/10.1016/j.ijsu.2020.02.034

Weyers, S., Dragano, N., Möbus, S., Beck, E. M., Stang, A., Möhlenkamp, S., … Siegrist, J., Erbel, R., & Siegrist, J. (2010). Poor social relations and adverse health behaviour: Stronger associations in low socioeconomic groups? *International Journal of Public Health*, *55*(1), 17–23. https://doi.org/10.1007/s00038-009-0070-6

Xiao, H., Zhang, Y., Kong, D., Li, S., & Yang, N. (2020a). Social Capital and Sleep Quality in Individuals Who Self-Isolated for 14 days during the coronavirus disease 2019 (Covid-19) Outbreak in January 2020 in China. *Medical Science Monitor*, *26*, e923921. https://doi.org/10.12659/MSM.923921

Xiao, H., Zhang, Y., Kong, D., Li, S., & Yang, N. (2020b). 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*, *26*, e923549. https://doi.org/10.12659/MSM.923549

Yao, K. W., Yu, S., Cheng, S. P., & Chen, I. J. (2008). Relationships between personal, depression and social network factors and sleep quality in community-dwelling older adults. *Journal of Nursing Research*, *16*(2), 131–139. https://doi.org/10.1097/01.JNR.0000387298.37419.ff

Yuan, S., Liao, Z., Huang, H., Jiang, B., Zhang, X., Wang, Y., & Zhao, M. (2020). Comparison of the Indicators of Psychological Stress in the Population of Hubei Province and non-endemic Provinces in China During Two Weeks during the coronavirus disease 2019 (COVID-19) Outbreak in February 2020. *Medical Science Monitor*, *26*, e923767. https://doi.org/10.12659/MSM.923767

Zhu, J., Sun, L., Zhang, L., Wang, H., Fan, A., Yang, B., Xiao, S., & Li, W. (2020). Prevalence and influence factors of anxiety and depression symptoms in frontline medical personnel fighting against COVID-19 in Gansu. SSRN Electronic Journal.

http://doi.org/10.2139/ssrn.3550054

Zung, W. W. K. (1971). A rating instrument for anxiety disorders. *Psychosomatics*, *12*(6), 371–379. https://doi.org/10.1016/S0033-3182(71)71479-0