

Table 1 Demographic and clinical characteristics according to COVID-19 status

	Confirmed (n = 306)	Suspected (n = 453)	χ^2/t	P
Gender n (%)				
Male	149 (48.7)	237 (52.3)	0.04	0.84
Female	157 (51.3)	216 (47.7)		
Age (years)	38.27 ± 10.99	35.61 ± 10.91	-3.27	0.001
Prevalence of depression n (%) [†]	70 (22.9)	84 (18.5)	1.86	0.17
Severity of depressive symptoms n (%)			14.09	0.003
None	121 (39.5)	239 (52.8)		
Mild	115 (37.6)	130 (28.7)		
Moderate	39 (12.8)	54 (11.9)		
Severe	31 (10.1)	30 (6.6)		
Prevalence of anxiety	74 (24.2)	97(21.4)	0.65	0.41
Severity of anxiety symptoms n (%) [†]			6.21	0.10
None	113 (36.9)	205 (45.3)		
Mild	119 (38.9)	151 (33.3)		
Moderate	45 (14.7)	66 (14.5)		
Severe	29 (9.5)	31 (6.9)		
Depression comorbid with anxiety n (%)	49 (16.0)	59 (13.0)	1.10	0.29

[†]Total scores ≥ 10 in PHQ-9 and GAD-7 were considered to define the presence of depression and anxiety respectively.

symptoms of anxiety and/or depression, and 33.6% reported no symptoms at all. Future studies might pay attention to the protective factors of those participants who did not present psychological symptoms even if they were experiencing confinement, isolation, mourning the loss of the loved ones, the presence of physical symptoms produced by COVID-19, or the lack of appropriate health care. To the authors best knowledge this is the first study presenting information about the mental health status of Ecuadorians in epidemiological surveillance during the pandemic, however, our data did not confirm that the presence of psychological symptoms was a product of being under surveillance. It is necessary to assess general population to reach such conclusions.

Acknowledgment







We thank all the staff of the mental health department of the MoPH who collaborated with us with personalized calls and the delivery of information to patients. The project was funded by the Dirección General de Investigación, Universidad de Las Américas, Quito, Ecuador.





Disclosure statement

The authors have no conflicts of interest to declare.

References

1. Prem K, Liu Y, Russell TW *et al.* The effect of control strategies to reduce social mixing on outcomes of the COVID-19 epidemic in Wuhan, China: A modelling study. *Lancet Public Heal.* 2020; **5**: e261–e270.
2. Ortiz-Prado E, Simbaña-Rivera K, Gómez-Barreno L *et al.* Epidemiological, socio-demographic and clinical features of the early phase of the COVID-19 epidemic in Ecuador. *medRxiv* 2020. <https://doi.org/10.1101/2020.05.08.20095943>
3. Kroenke K, Spitzer R, Williams J. Validity of a brief depression severity measure. *J. Gen. Intern. Med.* 2001; **16**: 606–613.
4. Spitzer RL, Kroenke K, Williams JBW, Löwe B. A brief measure for assessing generalized anxiety disorder: The GAD-7. *Arch. Intern. Med.* 2006; **166**. Available from: 1092–1097.
5. Zhang J, Lu H, Zeng H *et al.* The differential psychological distress of populations affected by the COVID-19 pandemic. *Brain Behav. Immun.* 2020; **87**: 49–50.

Clara Paz, PhD ¹, Guido Mascialino, PhD ¹, Lila Adana-Díaz, MSc ¹, Alberto Rodríguez-Lorenzana, MSc, PhD(c) ¹, Katherine Simbaña-Rivera, MD, MSc ², Lenin Gómez-Barreno, MD, MSc ²

Maritza Troya, BSc ³, María Ignacia Páez, BSc ³, Javier Cárdenas, MPH, PhD(c) ³, Rebekka M Gerstner, MSc, MPH ^{3,4} and Esteban Ortiz-Prado, MD, MPH, PhD(c) ²

¹School of Psychology, ²One Health Research Group, Faculty of Health Sciences, Universidad de Las Américas, ³National Department of Mental Health from the Ministry of Public Health Ecuador, Quito, and ⁴Department of Psico-etichs, Pontificia Universidad Católica del Ecuador, sede PUCE Santo Domingo Santo Domingo de los Tsachilas, Ecuador

Email: clara.paz@udla.edu.ec

Received 3 June 2020; revised 23 June 2020; accepted 24 June 2020.

Prevalence of anxiety and associated factors for Chinese adolescents during the COVID-19 outbreak

doi:10.1111/pcn.13102

The 2019 coronavirus disease (COVID-19) has become a public health emergency on a global scale. Fortunately, due to efforts on all parts from Chinese governmental bodies, medical workers, and local citizens, the peak has passed but the effects of COVID-19 on the mental health of Chinese people are ongoing and need to be further analyzed, especially those experienced by adolescents, who may have been overlooked during this public health emergency.¹ Anxiety is the most common form of mental illness among children and adolescents.² The risk of anxiety for adolescents is thought to be increasing due to the strict measures put in place during the COVID-19 outbreak, including the shutdown of schools, quarantine at home, cancelation of sporting events, and distance learning. Therefore, this study aims to illustrate anxiety and its associated factors among adolescents in China during the outbreak of COVID-19, which may provide a basis for further recommendations of

psychological interventions for adolescents in China as well as other countries.

A cross-sectional online survey was administered to assess levels of anxiety and associated factors among Chinese adolescents from 20 to 27 February 2020. The WeChat software platform and WJX.cn website platform (Changsha Renxing Science and Technology, Shanghai, China) were used to conduct the online survey through snowball sampling. Adolescents aged between 11 and 20 years who were living in Mainland China, attending junior or senior secondary schools, and were willing to participate were included in this study. Ethics approval for this study was obtained from the Medical Ethical Committee in the Beijing An Ding Hospital of the Capital Medical University in China. All participants and their guardians provided informed consent before participating in the study. The self-reported seven-item Generalized Anxiety Disorder (GAD-7) Scale was used to assess the symptoms of generalized anxiety disorder and the severity during the preceding 2 weeks according to the DSM-IV criteria. Participants were asked about seven core symptoms of generalized anxiety and responses were scored from 0 (*not at all*) to 3 (*nearly every day*), with a total score range from 0 to 21. Cut-off values for mild, moderate, and severe anxiety were 5, 10, and 15, respectively.³

A total of 9744 responders completed the questionnaire and 9554 were included in the analysis after removing unqualified data. In this study, 1814 adolescents suffered from anxiety (19.0%, 95% confidence interval = 18.2–19.8%; GAD-7 score ≥ 5). The prevalence rates of mild, moderate, and severe anxiety were 14.5%, 3.1%, and 1.5%, respectively. The multiple logistic regression revealed that female sex, senior secondary school students, sleep duration < 6 h every day, being concerned about graduation, and having more homework than before were all significantly associated with an

increased risk of anxiety. However, living in areas with 100–999 or 1000–9999 confirmed cases (divided according to the classification of the cumulative confirmed cases reported by the National Health Commission of the People’s Republic of China), being very concerned about COVID-19, sleep duration >8 h every day, and exercise duration of 30–60 min every day were associated with a decreased risk of anxiety (Table 1).

Regarding grade level, adolescents in senior secondary school and students who were worried about graduation reported higher risks of anxiety than junior school students, which might be attributed in part to the Chinese educational system.⁴ Adolescents in senior secondary school are often faced with significant academic pressure related to the university entrance examination, which could possibly increase the level of anxiety.⁵ Additionally, enough sleep, moderate physical exercise, and regular study duration (participating in distance learning) were found to be associated with decreased risks of anxiety for adolescents. Moreover, adolescents who were more concerned about the COVID-19 outbreak had a lower risk of anxiety, which was consistent with previous evidence showing that improving knowledge about the epidemic could reduce the fear and anxiety many individuals face.⁶ These results support the finding that having routines for study and daily life activities could work to reduce the risks of anxiety in adolescents.⁷ There were several limitations in this study. First, the participants were recruited through an online survey, so the sample cannot truly represent all Chinese adolescents. Second, some factors associated with anxiety, such as social support and physical health, could not be examined due to logistical reasons. Finally, this study used a cross-sectional study design and, therefore, causality between variables could not be examined.

In conclusion, anxiety was prevalent among adolescents during the COVID-19 outbreak, especially in girls and in senior secondary school

Table 1 Multiple logistic regression of associated factors with anxiety in adolescents during the outbreak of COVID-19

Variables	P	OR	95%CI for OR	
			Lower	Upper
Female sex	<0.001	1.298	1.164	1.448
Senior secondary school	<0.001	1.475	1.317	1.653
Living area at provincial level (No. of infected patients)				
10–99	Ref.			
100–999	0.005	0.830	0.729	0.944
1000–9999	<0.001	0.687	0.578	0.817
≥10 000	0.956	0.993	0.775	1.273
Acquaintance got infected	0.122	1.232	0.946	1.606
Being concerned about COVID-19	0.008	0.840	0.739	0.956
Sleep duration/day				
6–8 h	Ref.			
<6 h	<0.001	2.270	1.844	2.795
>8 h	<0.001	0.756	0.673	0.850
Exercise duration/day				
<30 min	Ref.			
30–60 min	<0.001	0.715	0.638	0.802
>60 min	0.215	0.886	0.732	1.073
Study duration/day ≥4 h	0.398	0.939	0.811	1.807
Participation in distance learning	0.646	0.951	0.767	1.179
Being concerned about graduation	<0.001	1.752	1.575	1.950
Quantity of homework				
About the same	Ref.			
Lower than before	0.285	1.073	0.943	1.220
Higher than before	<0.001	1.916	1.664	2.207

Due to collinearity between age and grade, age group was not entered in the multiple logistic regression analysis.

Bolded values, P < 0.05.

CI, confidential interval; OR, odds ratio.

students, suggesting that timely screening and appropriate interventions are urgently needed to reduce anxiety in adolescents.

Acknowledgments


The study was supported by the National Key R&D Program of China (2017YFC1311100) and the Beijing Municipal Science & Tech Commission (D171100007017001).

Disclosure statement

The authors declare no conflict of interest.

References

1. Danese A, Smith P, Chitsabesan P, Dubicka B. Child and adolescent mental health amidst emergencies and disasters. *Br. J. Psychiatry* 2020; **216**: 159–162.
2. Beesdo K, Knappe S, Pine DS. Anxiety and anxiety disorders in children and adolescents: Developmental issues and implications for DSM-V. *Psychiatr. Clin. North Am.* 2009; **32**: 483–524.
3. Spitzer RL, Kroenke K, Williams JB, Löwe B. A brief measure for assessing generalized anxiety disorder: The GAD-7. *Arch. Intern. Med.* 2006; **166**: 1092–1097.
4. Sun MY, Liu K. Analysis of the mediating effect of loneliness on social anxiety and depression in middle school students. *Chin. J. Health Stat.* 2018; **35**: 926–928 in Chinese.
5. Li H, Prevatt F. Fears and related anxieties in Chinese high school students. *Sch. Psychol. Int.* 2008; **29**: 89–104.
6. Xiang YT, Yang Y, Li W *et al.* Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *Lancet Psychiatry* 2020; **7**: 228–229.
7. Carter T, Morres ID, Meade O, Callaghan P. The effect of exercise on depressive symptoms in adolescents: A systematic review and meta-analysis. *J. Am. Acad. Child Adolesc. Psychiatry* 2016; **55**: 580–590.

Han Qi, MMed[†]  Rui Liu, PhD[†] Xu Chen, MD[†] Xiao-Fei Yuan, MD
Ya-Qiong Li, MD Huan-Huan Huang, MD Yi Zheng, MD, PhD and
Gang Wang, MD, PhD

The National Clinical Research Center for Mental Disorders & Beijing
Key Laboratory of Mental Disorders, Beijing Anding Hospital & The
Advanced Innovation Center for Human Brain Protection, Capital
Medical University, Beijing, China
Email: wanggang_sua@sina.com

[†]These authors contributed equally to the work.

Received 9 June 2020; revised 18 June 2020; accepted 24 June 2020.

Dramatic reduction of psychiatric emergency consultations during lockdown linked to COVID-19 in Paris and suburbs

doi:10.1111/pcn.13104

On 17 March 2020, a national lockdown began in France in response to the COVID-19 pandemic. Loneliness and social isolation caused by social distancing are long-established major risk factors for a number of psychiatric disorders.^{1,2} Quarantine and lockdown have other psychological consequences, such as boredom, irritability, and sleep dysregulation, which are associated with first-episode emergence of psychiatric disorders as well as the exacerbation of pre-existing psychiatric conditions.^{3,4} Contamination fear has additional

stress associations, for example anxious and obsessional symptoms, or delusional symptoms.⁵

In addition, psychiatric services have had to be reorganized^{5,6} to reduce contact among patients and between patients and professionals; for example, restricting consultations to severe cases; reorganization of health care via teleconsultation; early hospital release and restrictions on new hospitalizations; and closure of daily care facilities. Consequently, patients may have experienced difficulties in accessing psychiatric services or worry about being fined for non-compliance of lockdown rules. Overall, such factors may create a treatment gap and/or lead to a break in follow-up and ongoing treatment, thereby increasing emergency consultations during lockdown.⁷

This study aimed to compare the number and characteristics of emergency psychiatric consultations during the first 4 weeks of the lockdown in three psychiatric emergency services from Paris and its suburbs, and to compare them to the same period in 2019.

Three psychiatric emergency centers took part in the study: one in Paris, and one each in adjacent suburban cities, Colombes and Créteil.

We assessed and compared the number and characteristics of emergency consultations during the first 4 weeks of the French lockdown and of the corresponding weeks of 2019. The data from the three centers were pooled. Concerning the categorical variables, the proportions of each sociodemographic, clinical, and outcome category were compared between 2019 and 2020 using two-tailed χ^2 -tests, with the null hypothesis of an absence of difference between 2019 and 2020. Additional details concerning the data collection and statistical analyses are available in the supplementary materials (Appendix S1).

The study was performed in accordance with the Declaration of Helsinki. The data were extracted anonymously from registers, in accordance with the ethical standards of the French National Data Protection Authority.

During the first 4 weeks of the national COVID-19-related lockdown, 553 emergency psychiatric consultations were carried out, representing less than half (45.2%) of the corresponding weeks in 2019 (1224 consultations). This decrease was evident in each of the three centers.

The decrease concerned all psychiatric diagnoses, especially for anxiety disorders (number of consultations in 2020 representing 36.1% of consultations in 2019), mood disorders (41.1%), and psychotic disorders (67.2%). Total suicide attempts also decreased in 2020 to 42.6% of those in 2019.

The diagnostic pattern of presentations significantly changed, with the percentage of consultations for psychotic disorders increasing (31.1% in 2020 vs 24.1% in 2019), and the percentage of anxiety and stress-related disorders decreasing (16.6% vs 20.8%). The rate of first-episode psychiatric consultations decreased (13.8% vs 20.1%). Hospitalization without patients' consent increased (54.2% vs 43.8%). More details are available in Table 1.

Given the multifaceted stressors associated with lockdown, the above results show a surprising 54.8% drop in the number of psychiatric emergency consultations during the first 4 weeks of the COVID-19 pandemic. This decrease is evident in the three considered emergency departments and across all psychiatric diagnosis categories, and also concerns suicide attempts.

This decrease is not specific to psychiatry: a greater than 50% decrease in daily total consultations was reported in the West China Hospital emergency,⁸ and similarly in England.⁹ Clearly, a fear of contamination in emergency departments has contributed to this. Moreover, unnecessary hospital emergency department visits may have decreased. In France, and elsewhere, recent decades have seen a significant increase in the number of emergency department consultations.¹⁰ This increase is contributed to by multiple complex factors, including a deterioration in accessibility of primary care services, leading to unnecessary visits. The treatment gap in psychiatry, the gap between experiencing a psychiatric disorder and using treatment services for this disorder, has already been described.⁷ Our results seem in line with this, given the significant increased proportion of