Original article

Impact of COVID-19 on mental health in Uruguay

DOI: 10.5377/alerta.v6i2.16213

Graciela Castellano[1*], Guadalupe Herrera[2], Jimena Heinzen[3], Daniela Alfonso[4]

1-4. Department of Social and Preventive Medicine, Universidad de la República. Montevideo, Uruguay.

*Correspondence
sofiacastellano@gmail.com

1. 0000-0002-4381-0076
2. 0000-0001-6888-2343
3. 0000-0003-4052-3044
4. 0000-0001-9543-7085

Abstract

Introduction. The history of quarantines has pointed out impacts in the short and long term on mental health. Objective: Within the framework of the measures decreed to reduce the transmissibility of SarS-Cov2, we propose to analyze the repercussions on the mental health of the Uruguayan population. **Methodology.** Analytical design. Application of a self-administered web survey. Absolute and relative percentage frequencies and their confidence intervals (95 %) were analyzed. Binary logistic models were estimated for dichotomous variables and multinomial logistic models for «difficulty falling asleep». **Results.** Regarding anxiety elements, 27.1 % (95 % CI, 24.8-29.3) and 31.0 % (95 % CI, 28-33.3) responded feeling anxious in the first and second cut-off, respectively. 19.9 % (95 % CI, 17.6-21.7) and 31.4 % (95 % CI, 20.06-33.89) reported feeling sad in the first and second cut-off. Medium educational level was associated with the presence of anxiety ($p < 0.001$), while low educational level was associated with sadness ($p = 0.005$). A protective effect was observed in households with more than five members for the sadness variable with an OR of 0.41 (95 % CI, 0.22-0.75). Female gender was related to the presence of anxiety and sadness. Medium and high educational levels were related to the presence of anxiety and sadness was associated with unemployment. Sleep disorders were associated with female gender, unemployment and non-communicable diseases. **Conclusion.** The impact on mental health was unequal, especially affecting women from middle socio-educational sectors, between 35 and 59 years of age.

Keywords

COVID-19, Mental health, Anxiety, Depression, Sleep Wake Disorders.

Resumen

Introducción. Los antecedentes de cuarentenas han señalado impactos en el corto y largo plazo en la salud mental. **Objetivo.** Describir las repercusiones generadas en el área de la salud mental en la población uruguaya mayor de 18 años, de las variables ansiedad, tristeza y dificultades para conciliar el sueño, en el periodo comprendido entre el 13 de marzo de 2020 al 10 de junio de 2021. **Metodología.** Estudio transversal analítico. Se aplicó una encuesta web, auto-administrada. Se analizaron las frecuencias absolutas y relativas porcentuales y sus intervalos de confianza (95 %). Se estimaron modelos logísticos binarios para las variables dicotómicas y modelos logísticos multinomiales para «dificultad para conciliar el sueño». **Resultados.** En relación a los elementos de ansiedad, 27,1 % (IC 95 % 24,8-29,3) y 31,0 % (IC 95 % 28-33,3) respondieron sentirse ansiosos en el primer y segundo corte, respectivamente. El 19,9 % (IC 95 % 17,6 - 21,7) en el primer corte, mientras que el 31,4 % (IC 95 % 20,06-33,89) lo confirmaron en el segundo. El nivel educativo medio se asoció con la presencia de ansiedad ($p < 0,001$), mientras el bajo se asoció con tristeza ($p = 0,005$). Se observó un efecto protector en hogares con más de cinco miembros para la variable tristeza con un OR de 0,41 (IC 95 % 0,22 - 0,75). Se encontró relación entre el género femenino y la presencia de ansiedad y tristeza. Los niveles educativos medio y alto se vieron relacionados con la presencia de ansiedad y la tristeza se asoció con el desempleo. Los trastornos del sueño se asociaron al género femenino, desempleo y enfermedades no transmisibles. **Conclusión.** Los trastornos de ansiedad, la afectación del sueño y los sentimientos de tristeza fueron prevalentes, las familias de mayor número de miembros tuvieron un efecto protector sobre estas manifestaciones.

Palabras clave

COVID-19, Salud mental, ansiedad, depresión, trastornos del sueño.

OPEN ACCESS

Impacto de la COVID-19 sobre la salud mental en Uruguay

Suggested citation:
Castellano G, Herrera G, Heinzen J, Alfonso D. Impact of COVID-19 on mental health in Uruguay. Alerta. 2023;6(2):125-132. DOI: 10.5377/alerta.v6i2.16213

Received:
April 10, 2023.

Accepted:
May 23, 2023.

Published:
July 20, 2023.

Authors contribution:
GC[1], JH[3], DA[4]: study conception, literature search, data collection. GC[1], GH[2]: manuscript design, data management and analysis, literature search. GC[1], GH[2], JH[3]: writing, revising and editing.

Conflict of interests:
The authors declare there are no conflict of interests.

Introduction

The COVID-19 pandemic brought changes in the behavior of the world population. To prevent contagion, social distancing and quarantine measures were adopted[1]. In Uruguay, on March 13, 2020, the first four cases of SARS CoV-2 infection were confirmed. A sanitary emergency was immediately declared, and to reduce the spread of the virus, measures were adopted, which included the suspension of public events, the isolation of people with probable symptoms or positive COVID-19[2] test results; subsequently, to flatten the epidemic curve, social isolation measures were extended such as the suspension of classes at all levels of education and the promotion of teleworking[3].

Although quarantine was not mandatory for the entire population at the national level, the majority opted for voluntary quarantine. These confinement measures led to profound changes in daily life and in the basic routines of families, which, in addition to uncertainty and an increased workload, had an impact on mental health and socioeconomic aspects[3]. The worsening of mental health problems among adults led to an increase in child maltreatment and the possibility of domestic violence[4].

Previous experiences indicate that these measures tend to trigger different types of repercussions. In relation to the mental health of adults, an increase in psychological symptoms has been described during quarantines, even when these are brief. It is observed that the most affected are women and health personnel[5,6]. In the context of the COVID-19 quarantine, the prevalence of mental health disorders in the population was identified, including post-traumatic stress, anxiety, depression and somatization, which included reactions such as fear and sleep disorders[7,8].

Before the pandemic caused by COVID-19, mental disorders were among the main health problems worldwide. During the year 2020, major depressive disorder presented an increase of approximately 53.2 million cases, which is equivalent to an increment of 27.6 % of cases, and anxiety disorders had an increment of 25.6 %, with a higher prevalence in places where less human mobility was detected[9].

Furthermore, health personnel also presented alterations in their mental health, mainly due to factors related to direct contact with COVID-19 patients, the death of co-workers, and patients' family conflicts. The collaborative research study HEROES, led by the universities of Chile and Columbia, addressed the mental health situation of health personnel in 11 countries in the region: Argentina, Brazil, Chile, Colombia, the Plurinational State of Bolivia, Guatemala, Mexico, Peru, Puerto Rico, the Bolivarian Republic of Venezuela and Uruguay, and revealed the presence of high rates of depressive symptoms, suicidal thinking and psychological distress in health workers[10].

In light of the above, this study describes the repercussions generated in the area of mental health in the Uruguayan population over 18 years old, from a public health perspective, through the variables anxiety, sadness, and difficulties in falling asleep at two different moments during the period from March 13, 2020, to June 10, 2021.

Methodology

An analytical cross-sectional design was developed. The data collection instrument consisted of a survey elaborated on Facebook and disseminated through advertisements on the same social network, given that national data have reported that seven out of ten adults in Uruguay are users of this social network[11]. The population consisted of Internet users over 18 years old, users of the social network Facebook.

The survey was distributed to users of the social network at two time intervals, which were epidemiologically and socially differentiated, so that it was not answered at both times by the same participants.

The first segment took place over a period of nearly nine months, from March 13 to December 21, 2020. It started at the moment when the health emergency was established, with a low number of cases for the region and the world, but with a sense of uncertainty regarding the severity of the pandemic, as well as its duration, and the duration of the measures taken to control the expansion of cases[3].

The second segment was from January 2021 to June 10, 2021, one year after the pandemic was declared (with measures in place since that time). This period was characterized by an exponential increase in cases and deaths due to COVID-19 in Uruguay, as well as by the beginning of vaccination campaigns in the country[3].

The sample comprised a total of 2905 people; 1500 subjects in the first segment and 1405 in the second.

For sample selection, the population was segregated by sex, age, region, and educational level. The presence of quotas for these variables was controlled to ensure a significant number of cases for each category, and weightings were calculated according to the variables used for segmentation.

The sample analysis included five variables: age, gender, current job, non-communicable disease (NCD) status and type of household. Three groups of 18 to 34 years old, 35 to 59 years old and 60 years old or older were defined; educational level were classified into low (less than nine years of formal education), medium (between nine and 12 years of formal education) and high (more than 12 years of formal education); gender categorization divided into male and female; in addition, if the person had a job at the time of the survey, if they suffered from any NCD, and finally, the type of households, which were classified into one-person, two to four members and five or more members. Educational level was considered as a proxy variable for socioeconomic level[12].

Self-perceived symptoms of anxiety or depression in both survey segments were identified through the following block of questions: "I feel anxiety," "I feel sad," "I feel calm and in good spirits," "I feel fear or worry," "I feel more tired than usual." For each of these questions, the options "yes," "no," and "don't know/no answer" were provided. In addition, a question regarding difficulties in falling asleep was included, with the following response options: "no," "yes, sometimes," and "yes, always."

For each segment, the absolute frequency and percentages of the variables were analyzed, as well as their 95 % confidence intervals. Binary logistic models were estimated for the variables "anxiety" and "sadness." For the variable "difficulty falling asleep," multinomial logistic models were estimated. Both statistical and theoretical relevance criteria were used for the multiple model input. The relative quality of the models was assesed using the Akaike criterion, and the adjustment was analyzed through deviation. All estimates were obtained using sampling weights, and an $\alpha = 0.05$ was used as significance threshold. Data analysis was performed in R software (version 4.1.2)[13].

The project was registered at the General Directorate of Health, Health Evaluation Division of the Ministry of Public Health on August 8, 2020, under number 827113. The research team declares to have complied with the Declaration of Helsinki on ethical principles for medical research involving human subjects.

Results

Table 1 shows the characteristics of the population that participated in the survey at each segment. The sample in both cases was composed of 43 % of the population of Montevideo and 57 % from the rest of the country.

NCD were detected more frequently in respondents in the first segment; at this moment, 61.7 % of respondents stated that they had some NCD (95 % CI, 59.2-64.2) as opposed to 47.4 % in the second segment (95 % CI, 44.8-50.0), with a significant difference in this variable between the two time periods.

In the first segment, 27.1 % (95 % CI, 24.8-29.3) of the respondents answered that they felt anxiety, in contrast to 31 % (95 % CI, 28.0-33.3), in the second segment. Sadness was present in 19.9 % (95 % CI, 17.6-21.7) of respondents in the first segment, in contrast to 31.4 % (95 % CI, 20.1-33.9) who expressed feeling sad in the second segment.

Table 1. General characteristics of the population (first and second segments)

		First segment (n=1500)		Second segment (n=1405)	
		n (%)	95% CI	n (%)	95% CI
Age*	18-34	570 (38.0 %)	35.5-40.4	517 (36.8 %)	34.3-39.4
	35-59	690 (46.0 %)	43.4-48.5	657 (46.8 %)	44.2-49.4
	>=60	241(16.0 %)	14.2-17.9	231 (16.4 %)	14.6-18.5
Education level*	Low	449 (30.0 %)	27.7-32.3	421 (30.0 %)	27.7-32.4
	Medium	644 (42.9 %)	40.5-45.5	604 (43.0 %)	40.5-45.6
	High	404 (26.9 %)	27.4-29.2	379 (27.0 %)	24.7-29.4
Gender	M	707 (47.1 %)	44.6-49.6	662 (47.2 %)	44.6-49.9
	F	793 (52.9 %)	50.4-55.4	740 (52.8 %)	50.1-55.4
Current Job*	Yes	713 (47.5 %)	45.0-50.0	784 (56.6 %)	53.9-59.2
	No	787 (52.5 %)	49.9-55.0	601 (43.4 %)	40.8-46.1

CI= confidence interval, M=male, F=female.

*: For some of the variables, there were no responses from the total population in both segments.

Therefore, it should be noted that the manifestations of the emotional dimension corresponding to anxiety and depression syndromes were higher in the first segment. On the other hand, difficulties in falling asleep occasionally occurred in 40.8 % (95 % CI, 38.6-43.6), while in the first segment, 11.6 % (95 % CI, 10.0-13.3) reported having them continuously. These sleep disorders did not show significant differences between the two segments time of the survey. Medium educational level was associated with the presence of anxiety (p <0.01)(Table 2). Whereas low educational level was significantly associated with sadness (p <0.01)(Table 3).

It is worth noting the protective effect of households with five or more members for the sadness variable, as observed in the second survey cut-off, with an OR of 0.4 (95 % CI, 0.2-0.8)(Table 3).

On the other hand, female gender related to anxiety and sadness in the second segment of the survey. Those older than 34 presented an OR significantly lower than one for anxiety in both events. For ages older than 59, they were less associated with sadness in the adjusted models for both segments (Tables 2 and 3).

Medium and high levels of education were related to anxiety, and sadness was associated with unemployment. Non-

Table 2. Factors associated with feelings of anxiety during the Covid-19 pandemic in the first and second survey segments, Uruguay (2020 and 2021)

		First segment		Second segment	
		Raw OR (95% CI)	Adjusted OR (95% CI)	Raw OR (95% CI)	Adjusted OR (95% CI)
Gender	M	1		1	
	F	1.09 (0.87-1.38)	1.23 (0.96-1.58)	1.55 (1.23-1.95)	1.32 (1.04-1.68)
Age	18-34	1		1	
	35-59	0.67 (0.52-0.85)	0.59 (0.44-0.78)	0.55 (0.43-0.71)	0.54 (0.41-0.71)
	>=60	0.52 (0.36-0.73)	0.37 (0.24-0.54)	0.42 (0.29-0.59)	0.34 (0.22-0.50)
Education level	Low	1		1	
	Medium	1.61 (1.17.2.24)	1.62 (1.16-2.26)	1.75 (1.31-2.34)	1.59 (1.18-2.16)
	High	2.25 (1.64-3.12)	2.38 (1.66-3.43)	2.75 (2.02-3.77)	2.39 (1.73-3.33)
NCD	No	1		1	
	Yes	1.57 (1.25-1.98)	2.44 (1.86-3.20)	0.66 (0.53-0.83)	0.48 (0.37-0.61)

CI= Confidence interval, M=Male, F=Female, NCD= non communicable diseases.

Table 3. Factors associated with feelings of sadness during the Covid-19 pandemic in the first and second survey segments. Uruguay (2020 and 2021)

		First segment		Second segment	
		Raw OR (95% CI)	Adjusted OR (95% CI)	Raw OR (95% CI)	Adjusted OR (95% CI)
Gender	M	1		1	
	F	1.11 (0.85-1.45)	0.97 (0.73-1.28)	1.55 (1.16-2.07)	1.36 (1.01-1.85)
Age	18-34	1		1	
	35-59	1.10 (0.83-1.48)	0.87 (0.63-1.19)	0.84 (0.62-1.14)	0.64 (0.46-0.90)
	>=60	1.09 (0.74-1.60)	0.65 (0.42-0.99)	0.85 (0.55-1.28)	0.43 (0.26-0.68)
Current job	Si	1		1	
	No	1.47 (1.13-1.91)	1.42 (1.07-1.88)	1.76 (1.32-2.34)	1.80 (1.33-2.44)
NCD	No	1		1	
	Si	1.85 (1.42-2.42)	1.96 (1.45-2.64)	2.30 (1.72-3.09)	2.62 (1.90-3.63)
Household	One-person			1	
	2 a 4 members			0.86 (0.59-1.27)	0.78 (0.53-1.17)
	5 + members			0.55 (0.30-0.97)	0.41 (0.22-0.75)

CI= Confidence interval. M=Male. F=Female. NCD= non communicable diseases.

communicable diseases were associated with the symptom of anxiety in the first cut-off and sadness in both cut-offs. Anxiety in patients with NCDs showed a decrease in the second cut-off (Tables 2 and 3).

Difficulty falling asleep was significantly associated with female gender, unemployment, and the presence of noncommunicable diseases in both survey periods, in both the simple and adjusted models (Table 4).

Discussion

The international literature concerning the impact of quarantines has shown that this type of measure usually generates individual and collective repercussions of different kinds[9].

The prevalence of mental health problems was higher in women for both survey segments. This trend is consistent with the reports of multiple studies affirming that manifestations of anxiety and, or depression are predominantly found in women and, in particular, in young and middle-aged women[14-16].

The survey on children, time use, and gender in the context of the UN Women in Uruguay health emergency reported a higher frequency of symptoms in the area of mental health for the female gender due to a combination of factors; on the one hand, the suspension of attendance at all educational levels and the recommendations to "stay at home" determined an overload in terms of child and adolescent care. This demand generated a higher burden on women, with the consequent widening of gender gaps in domestic chores, increasing the number of hours dedicated to unpaid work. Furthermore, women reported a higher loss of paid employment in terms of jobs and the number of hours per week dedicated to paid work[17]. In addition, domestic violence against women and children rose significantly since the pandemic was declared in Uruguay and other countries[18,19]. These violence has been associated with a higher presence of anxiety and depression, and even more accentuated in those women who do not have a support network[18].

In this study age was identified as a factor associated with lower self-perceived distress. Adults older than 65 years showed to be less stressed, had better psychosocial functioning and were less likely to use avoidant coping behaviors, as was demonstrated by the results of a meta-analysis by Lieneck *et al.* on protective and non-protective factors for mental illness during the COVID-19

Table 4. Factors associated with difficulty falling asleep during the COVID-19 pandemic in first and second survey segments. Uruguay (2020 and 2021)

		Primer corte				Segundo corte			
		Raw OR (95% CI)*		Adjusted OR (95% CI)*		Raw OR (95% CI)*		Adjusted OR (95% CI)*	
		Yes. occasionally	Yes. always	Yes. occasionally	Yes. always	Yes. occasionally	Yes. always	Yes. occasionally	Yes. always
Gender	M	1		1		1		1	
	F	1.77 (1.42-2.21)	3.55 (2.44-5.15)	1.76 (1.39-2.23)	3.26 (2.19-4.84)	1.70 (1.35-2.13)	2.98 (2.07-4.30)	1.46 (1.16-1.85)	2.58 (1.76-3.78
Age	18-34	1		1		1		1	
	35-59	1.23 (0.97-1.57)	1.28 (0.88-1.85)	1.03 (0.78-1.37)	0.72 (0.46-1.12)	0.75 (0.58-0.96)	0.97 (0.66-1.43)	0.70 (0.53-0.92)	0.79 (0.51-1.22)
	>=60	0.85 (0.62-1.18)	0.88 (0.53-1.46)	0.55 (0.38-0.81)	0.41 (0.23-0.72)	0.59 (0.42-0.83)	1.03 (0.63-1.68)	0.40 (0.27-0.60)	0.48 (0.27-0.60)
Educational level	Low	1		1		1		1	
	Medium	1.09 (0.82-1.45)	1.09 (0.72-1.66)	1.23 (0.91-1.65)	1.28 (0.82-1.97)	0.96 (0.74-1.26)	1.37 (0.91-2.06)	0.89 (0.67-1.18)	1.44 (0.93-2.22)
	High	1.05 (0.79-1.41)	0.75 (0.48-1.18)	1.65 (1.17-2.32)	1.38 (0.81-2.33)	1.14 (0.85-1.54)	0.99 (0.61-1.60)	1.10 (0.80-1.52)	1.06 (0.63-1.80)
Current job	Yes	1		1		1		1	
	No	1.32 (1.06-1.65)	1.56 (1.11-2.18)	1.35 (1.05-1.74)	1.34 (0.92-1.96)	1.62 (1.29-2.05)	2.68 (1.89-3.80)	1.73 (1.34-2.23)	2.54 (1.73-3.73)
NCD	No	1		1		1		1	
	Yes	1.80 (1.44-2.25)	3.01 (2.12-4.29)	2.02 (1.57-2.61)	3.42 (2.30-5.08)	1.45 (1.15-1.82)	3.83 (2.65-5.54)	1.67 (1.29-2.15)	4.08 (2.71-6.14)

*Reference: "no difficulty falling asleep". CI=confidence interval. M=male. F=female. NCD=noncommunicable diseases.

pandemic in the United States of America[20]. Despite being consistent with other studies, the apparent protective effect of age is striking. The greater biological vulnerability of older adults to COVID-19 led to specific communication campaigns promotion of social and mental health networks tailored for this population, which probably contributed to its stability, yet, it should not be discarded that the use of a self-administered virtual data collection instrument may have generated some bias in the recruitment of the older adults who finished it.

Another important finding was the significant association of noncommunicable diseases with the three manifestations of the mental health observed (anxiety, sadness, and difficulty falling asleep). This population of people over 65 years old, which was considered at risk from the beginning of the pandemic, was the one that received the recommendation of social isolation emphatically. Moreover, according to a document from the Honorary Scientific Advisory Group (GACH), the initial measures had a heterogeneous impact on care, with repercussions on the quality of care and follow-up of patients with noncommunicable diseases[21]. 21 Multiple studies, including systematic reviews, link the measures taken to control the pandemic with feelings of isolation, loneliness, anxiety and sadness in the population with noncommunicable diseases[22-25]. In addition, it is noteworthy that, between the first and second segments of the survey, the link between the occurrence of NCD and anxiety is inverted. This behavior might be explained by the fact that people with NCD belonged to the priority group for immunization within the vaccination plan launched by the Ministry of Public Health on February 27, 2021. Thus, at the time of the second survey segment, a large part of this group was already immunized with the first dose of the vaccine.

Regarding the link between the type of household and mental health symptoms, it was found that individuals who lived with more than five members had a lower risk of suffering from sadness. Recently published studies have described the availability of strong social networks and connections as a protective factor for all ages against mental health disorders during the pandemic[19-21].

Among the limitations of this study are the factors linked to the data collection method since, although Uruguay presents a broad coverage of social network use, the target audience was limited to the population with the highest use of Facebook, which could be related to economic level or age.

The prioritization of mental health care is present in most public health agendas. However, the mental health of communities has been affected in various ways in the context of the current global health crisis[3,19-21].

The report of the Honorary Scientific Advisory Group informs that, in private healthcare institutions in Uruguay, there was a decrease of 29 % in psychiatric consultations and 58 % in psychotherapeutic consultations compared to 2019. The impact on the mental health of healthcare workers is also highlighted, with a frequency of between 14.7 % and 22 % of symptoms of psychic suffering in the healthcare personnel interviewed in 2020[22]. Similarly, consultations, procedures and population screening strategies for other NCD also showed a decrease, which could lead to a worsening of the main causes of morbidity and mortality in the country in the medium and long term.

Regarding the response of the health system, although remote medical consultations were promoted, they were implemented with certain difficulties. Among the problems mentioned are: the probable decrease in the quality of care, certain limitations in the use of telemedicine resources (enabled by Law 19869 of 04/02/20), the probable abandonment of medication by many patients, multiple coordination difficulties detected, the decrease in the number of care team meetings, difficulties in patient follow-up and in communications between psychiatrists, patients and family members, among others[22].

Conclusion

The COVID-19 pandemic confronted the country with multiple challenges. When evaluating the impact on the different health care areas, from an integral perspective, it was observed that the impact on mental health has been evident. Anxiety disorders, sleep disorders and feelings of sadness were relevant. Households with a greater number of members had a protective effect on emotional alterations. The impact on mental health especially affected women, in general, and particularly women from middle socio-educational sectors within the age range between 35 and 59 years old.

Funding

The project was approved and funded by the Sectoral Commission for Scientific Research (CSIC) under the 2020 call "Expertise to address the emergency posed by COVID-19 and its impacts".

References

1. Guerrero FM. COVID-19 la pandemia que nos prepara para un nuevo enfoque de salud-enfermedad. Univ. Salud. 2020;23(1):2-5. DOI: 10.22267/rus.212301.206
2. Ministerio de Salud Pública. Plan Nacional Coronavirus. 2023. Consultation date: March 5, 2023. Available at: https://www.gub.uy/ministerio-salud-publica/coronavirus
3. Peláez M, Fiori M, Bermolen P, Bello G, Arim M, Fariello MI, *et al.* El efecto de la movilidad en la propagación de la epidemia de Covid-19 en Uruguay. Uruguay. June 18, 2020. 19 p. Available at: https://guiad-covid.github.io/publication/nota7/Nota_7_Efecto_de_la_movilidad_GUIAD-Covid19.pdf
4. Garrido G, González G. ¿La pandemia de COVID-19 y las medidas de confinamiento aumentan el riesgo de violencia hacia niños/as y adolescentes? Archivos de Pediatría del Uruguay. 2020;91(4):194-195. DOI: 10.31134/ap.91.4.1
5. Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N, *et al.* The psychological impact of quarantine and how to reduce it: rapid review of the evidence. The Lancet. 2020;395(10227):912-920. DOI: 10.1016/S0140-6736(20)30460-8
6. Bai Y, Lin C-C, Lin C-Y, Chen J-Y, Chue C-M, Chou P. Survey of Stress Reactions Among Health Care Workers Involved With the SARS Outbreak. PS. 2004;55(9):1055-1057. DOI: 10.1176/appi.ps.55.9.1055
7. Shigemura J, Ursano RJ, Morganstein JC, Kurosawa M, Benedek DM. Public responses to the novel 2019 coronavirus (2019-nCoV) in Japan: Mental health consequences and target populations. Psychiatry Clin. Neurosci. 2020;74(4):281-282. DOI: 10.1111/pcn.12988
8. Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, *et al.* Immediate Psychological Responses and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China. IJERPH. 2020;17(5):1729. DOI: 10.3390/ijerph17051729
9. Santomauro DF, Mantilla Herrera AM, Shadid J, Zheng P, Ashbaugh C, Pigott DM, *et al.* Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic. The Lancet. 2021;398(10312):1700-1712. DOI: 10.1016/S0140-6736(21)02143-7
10. Organización Panamericana de la Salud. The COVID-19 HEalth caRe wOrkErs Study (HEROES) Informe regional de las américas. Washintong D.C. OPS. 2022. 52 p. Available at: https://iris.paho.org/handle/10665.2/55563
11. González Raga & Asociados. El uso de las redes sociales en Uruguay. CIFRA. 2021. Consultation date: October 15, 2021. Available at: https://www.cifra.com.uy/index.php/2021/08/31/el-uso-de-las-redes-sociales-en-uruguay/
12. Aristimuño A. El abandono de los estudios del nivel medio en Uruguay: un problema complejo y persistente. REICE. 2009.;7(4):3-9. Available at: https://www.r-project.org/
13. The R Foundation. El Proyecto R para Computación Estadística. 2023. Consultation date: October 15, 2021. Available at: https://www.r-project.org/
14. Rossi R, Socci V, Talevi D, Mensi S, Niolu C, Pacitti F, *et al.* COVID-19 Pandemic and Lockdown Measures Impact on Mental Health Among the General Population in Italy. Front. Psychiatry. 2020; 11:790. DOI: 10.3389/fpsyt.2020.00790
15. Niedzwiedz CL, Green MJ, Benzeval M, Campbell D, Craig P, Demou E, *et al.* Mental health and health behaviours before and during the initial phase of the COVID-19 lockdown: longitudinal analyses of the UK Household Longitudinal Study. J Epidemiol Community Health. 2020 Sep 25:jech-2020-215060. DOI: 10.1136/jech-2020-215060
16. Pieh C, Budimir S, Probst T. The effect of age, gender, income, work, and physical activity on mental health during coronavirus disease (COVID-19) lockdown in Austria. Journal of Psychosomatic Research. 2020; 136:110186. DOI: 10.1016/j.jpsychores.2020.110186
17. ONU Mujeres. II Encuesta sobre niñez, uso del tiempo y género en el marco de la emergencia sanitaria (ENUG). Principales resultados. Montevideo. Unicef. 2021. 36 p. Available at: https://lac.unwomen.org/es/digiteca/publicaciones/2021/10/encuesta-sobre-ninez-enug
18. López Steinmetz LC, Fong SB, Leyes CA, Dutto Florio MA, Godoy JC. General Mental Health State Indicators in Argentinean Women During Quarantine of up to 80-Day Duration for COVID-19 Pandemic. Front. Glob. Womens Health. 2020; 1:580652. DOI: 10.3389/fgwh.2020.580652
19. Wong SYS, Zhang D, Sit RWS, Yip BHK, Chung RY, Wong CKM, *et al.* Impact of COVID-19 on loneliness, mental health, and health service utilisation: a prospective cohort study of older adults with multimorbidity in primary care. Br J Gen Pract. 2020;70(700):e817-e824. DOI: 10.3399/bjgp20X713021

20. Lieneck C, Bosworth M, Weaver E, Heinemann K, Patel J. Protective and Non-Protective Factors of Mental Health Distress in the United States during the COVID-19 Pandemic: A Systematic Review. Medicina. 2021;57(12):1377. DOI: 10.3390/medicina57121377
21. Bhattacharjee B, Acharya T. "The COVID-19 Pandemic and its Effect on Mental Health in USA-A Review with Some Coping Strategies." Psychiatr Q. 2020;91(4):1135-1145. DOI: 10.1007/s11126-020-09836-0
22. Grupo Asesor Científico Honorario. Impacto secuelar en salud de la epidemia por SARS-CoV-2 en Uruguay. GACH. Montevideo. 2021. p. 86. Available at: https://www.gub.uy/presidencia/comunicacion/publicaciones/impacto-secuelar-sars-cov-2-uruguay
23. Ma K, Liang L, Chutiyami M, Nicoll S, Khaerudin T, Ha XV. COVID-19 pandemic-related anxiety, stress, and depression among teachers: A systematic review and meta-analysis. WOR. 2022;73(1):3-27. DOI: 10.3233/WOR-220062
24. Sun Y, Wu Y, Fan S, Dal Santo T, Li L, Jiang X, *et al.* Comparison of mental health symptoms before and during the COVID-19 pandemic: evidence from a systematic review and meta-analysis of 134 cohorts. BMJ. 2023 Mar 8: e074224. DOI: 10.1136/bmj-2022-074224
25. Salari N, Hosseinian-Far A, Jalali R, Vaisi-Raygani A, Rasoulpoor S, Mohammadi M, *et al.* Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: a systematic review and meta-analysis. Global Health. 2020;16(1):57. DOI: 10.1186/s12992-020-00589-w