

Psychological distress during the COVID-19 pandemic in the population of Argentina

María Beatriz Lucuix, MSc^a, Juan Gómez-Salgado, PhD^{b,c,*}, Myriam E. Barone, D.Sc^d, Sara Domínguez-Salas, PhD^e, Leticia Elizabeth Luque, PhD^f, Carmen Rodríguez-Domínguez, PhD^e, Carlos Ruiz-Frutos, MD, PhD^{b,c}

Abstract

In addition to the implications that this pandemic has had on physical health, there are other circumstances that threaten the mental health of the population, such as lockdown measures to prevent the spread of the virus, uncertainty, and the increase in infections and deaths. For this reason, this study explored indicators of psychological distress in the Argentine population, as well as its relationship with sociodemographic and health variables.

Cross-sectional observational study, with data collection from May to August 2020. A total of 1112 people over the age of 18 who responded to various measurement instruments through an online questionnaire participated. A bivariate analysis and logistic regression were carried out in order to determine predictive factors of psychological distress.

The data revealed that 60.9% of the sample presented psychological distress. A greater number with this condition was observed in women, apart from younger people, with a greater number of symptoms associated with the disease and with worse self-perceived health. There was no evidence of association between psychological distress and contact with people infected with coronavirus disease 2019 or with material suspicious of being infected.

This research provided an overview of the mental health status of a significant population sample in Argentina, months after the onset of the coronavirus disease 2019 pandemic. These findings complement those found in other national and international studies, allowing the accumulation of evidence that states the need to demand to draw attention to the mental health of the population, especially the most vulnerable groups, on behalf of the public authorities.

Abbreviations: ASPO = preventive and mandatory social isolation; for its acronym in Spanish: *Aislamiento Social, Preventivo y Obligatorio*, COVID-19 = coronavirus disease 2019, CI = confidence interval, M = mean, OR = odds ratio, WHO = World Health Organization.

Keywords: COVID-19, lockdown, psychological distress, self-rated health, sociodemographic variables

Editor: Chiedu Eseadi.

The authors have no conflicts of interest to disclose.

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

^a Social Work Career, Faculty of Social Sciences, Universidad de Buenos Aires, Buenos Aires, Argentina, ^b Department of Sociology, Social Work and Public Health, Faculty of Labour Sciences, University of Huelva, Huelva, Spain, ^c Safety and Health Postgraduate Programme, Universidad Espíritu Santo, Guayaquil, Ecuador, ^d Instituto de Estudios Sociales y Humanos, Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Facultad de Humanidades y Ciencias Sociales, Universidad Nacional de Misiones, Posadas, Argentina, ^e Department of Psychology, Universidad Loyola Andalucía, Sevilla, Spain, ^f Faculty of Psychology, Universidad Nacional de Córdoba, Córdoba, Argentina.

* Correspondence: Juan Gómez-Salgado, Department of Sociology, Social Work and Public Health, Faculty of Labour Sciences, University of Huelva, Avenida Tres de marzo, s/n, 21007 Huelva, Spain (e-mail: jgsalgad@gmail.com).

Copyright © 2021 the Author(s). Published by Wolters Kluwer Health, Inc. This is an open access article distributed under the terms of the Creative Commons Attribution-Non Commercial License 4.0 (CCBY-NC), where it is permissible to download, share, remix, transform, and buildup the work provided it is properly cited. The work cannot be used commercially without permission from the journal.

How to cite this article: Lucuix MB, Gómez-Salgado J, Barone ME, Domínguez-Salas S, Luque LE, Rodríguez-Domínguez C, Ruiz-Frutos C. Psychological distress during the COVID-19 pandemic in the population of Argentina. *Medicine* 2021;100:51(e28333).

Received: 17 August 2021 / Received in final form: 30 October 2021 /

Accepted: 29 November 2021

<http://dx.doi.org/10.1097/MD.00000000000028333>

1. Introduction

On January 30, 2020, the World Health Organization (WHO) declared a public health emergency due to the outbreak of coronavirus disease 2019 (COVID-19) internationally.^[1] Although the onset of the disease was reported at the end of 2020 in Wuhan, China, by that date around 80 cases had been identified in 18 different countries,^[1,2] and by March 11, 2020 the number of identified cases had exceeded 118,000, after which WHO reported it as a pandemic disease.^[3]

As a result, a state of health emergency was declared at the international level, and each country implemented measures to contain the virus and mitigate the health, economic, and social impact. In Argentina, the government decreed a preventive and mandatory social isolation (ASPO, for its acronym in Spanish), which officially took effect on March 20, 2020. The decree imposed restrictions such as the free movement of persons, the closure of external and internal borders, the stoppage of services and work and economic activities considered non-essential, and the suspension of cultural, religious, sports, and recreational meetings and events.^[4]

Studies on the severe acute respiratory syndrome and Middle East respiratory syndrome showed psychological consequences in survivors, such as stress and distress, and the presence of anxiety and feelings of anger in the general confined population.^[5] International studies conducted at the beginning of the COVID-19 outbreak highlighted that widespread anxiety, frustration,

boredom, and loneliness, as well as fears related to infection, are harmful psycho-emotional factors that affect quality of life and personal well-being.^[6–9] Similarly, the COVID-19 pandemic has been related to psychological distress, with data showing ranges from 24.6% to 56%^[10]; among other factors, the frequent exposure to social networks or news about the pandemic are presented as predictors of these negative effects.^[9,11]

In people with previously diagnosed psychiatric disorders, the effects of COVID-19 isolation are unclear. For example, a higher level of distress is reported as compared to that experienced by healthy people due to the lack or alteration of stress coping strategies, especially towards the pandemic, or less access to medical care,^[8] and, in addition, an increase in consumption of substances such as alcohol, but with no increase in affective experiences or in the symptomatology of such disorders.^[12] Having pre-existing medical conditions, such as diabetes or hypertension, can become a risk factor for psychological distress due to the perception of increased risk of mortality, difficulty accessing medical services, and increased sensitivity to external stressors such as mandatory isolation.^[13–15]

In Argentina, some studies associated with the mental health status of the population due to COVID-19 started early. An example is a study conducted during the first week of the ASPO^[16] with the aim of measuring affective reactions in Argentine adults. High rates of depressive and anxious emotional reaction were observed even with very low infectious rates of COVID-19 in the country and an early adaptive reaction. The youngest group (18–25 years) showed the highest prevalence of symptoms, while the group of women presented more symptoms of depression and anxiety. Also, after the first month of ASPO, an exploration of psychological effects was carried out and the following were detected as more relevant: fear of personal and/or close family contagion, severe distress, sadness and feeling down and with depressive mood, as well as an increase in the consumption of alcoholic drinks. Being a woman, young, and unemployed appears as a factor of greater psychological vulnerability.^[17,18] A study comparing 3 periods of lockdown detected a sustained and significant increase in the number of people at risk of suffering from a mental disorder, which was higher in women and young people who lived the region with the highest population density, Greater Buenos Aires.^[19,20] On an emotional level, 56.3% expressed feeling more anxiety and 33.5% expressed greater difficulty sleeping than before the pandemic.^[20] In contrast, the research by Eidman et al,^[5] conducted in 20 Argentine provinces, reports 66.7% of participants with languishing mental health, with a higher proportion in men and married people.

This disparity of results on certain sociodemographic variables is also noticed at the international level. Thus, although being a woman and a young person appear recurrently as predictors of distress or psychological distress,^[7,9,10,11] the heterogeneity of the studies allows to understand that factors of vulnerability include being male, being over 60 years old, having a high level of education, being unemployed, or being a student, as well as living with many people in confined spaces or having a non-cohabiting relationship.^[8,15–18,21] These differences detected in the research on psychological distress associated with COVID-19 suggest the need for studies aimed at consolidating empirical evidence during epidemics.^[22,23] Therefore, the objective of the study was to analyze the psychological distress in an Argentine population sample during the COVID-19 pandemic, identifying the potential predictive role of sociodemographic variables and factors related to the general health of the participants.

2. Methods

2.1. Participants

For this study, an ideal sample size was estimated from 1068 participants onwards (95% confidence level and risk of bias of 3%), considering the total Argentine population that had internet access in the second quarter of 2020.^[24] In this way, a non-probabilistic snowball sampling was used, disseminating the study through social networks and invitations through institutional emails. As inclusion criteria, the following were established: being 18 years of age or older; living in Argentina at the time of participation in the study; and accepting the informed consent. Thus, the initial sample consisted of 1592 participants, but those who did not complete the questionnaire in its entirety were eliminated, leaving a final sample of 1112 people.

2.2. Instruments

An ad hoc questionnaire composed of the following instruments was designed:

Sociodemographic variables: information was collected regarding sex, age, marital status, educational level, employment status, and type of dwelling. In addition, information on whether the participant lived with children or under-16 youngsters, or with disabled people was also collected.

Physical symptoms related with COVID-19 in the past 14 days: using questions with dichotomous answer (yes/no), the prevalence of the most common symptoms of COVID-19 indicated by the WHO was recorded^[25]: fever >38°C for at least 1 day, cough, headache, myalgia, dizziness, diarrhea, sore throat, coryza, chills, and breathing difficulty.

Health-related variables: dichotomous answer questions were included to assess the presence of chronic diseases, medication intake of some kind, need for health care in a health center, clinic, or hospital in the past 14 days, quarantine for presenting symptoms, as well as testing for COVID-19. To assess self-perceived health in the 14 days prior to the participation in the study, an item with 5 response options (lousy, bad, mediocre, good, and very good) was used.

Contact history in the past 14 days: 3 questions with categorical answers (no, yes, or does not know) were included to assess the presence of close or casual contact with a confirmed case of COVID-19. The presence of contact with any person or material suspicious of being infected with COVID-19 was also assessed. *Psychological distress:* the General Health Questionnaire^[26] was used to assess the presence of psychological distress. This self-administered questionnaire consists of 12 items for which the participant must indicate how they have felt regarding their health in recent weeks. It is answered using a Likert-type scale of 4 answer options (1–4), which are transformed into a dichotomous score (0-0-1-1) for correction, so that the total score on the scale ranges from 0 to 12 points. The Cronbach alpha obtained for this study was 0.88.

2.3. Procedure

Cross-sectional observational study. This research followed the STROBE guidelines. Data were collected between May 12 and August 30, 2020 through the Qualtrics survey platform. At all times, the ethical criteria set out in the Declaration of Helsinki^[27] and Argentine Law 25326 on the protection of personal data^[28]

were complied with. This meant that participants received information about the study and then agreed on the participation through an informed written consent before accessing the survey. Data were collected anonymously, and the voluntariness of participation was respected. This study is part of an international macro research whose objective is to evaluate the impact of the COVID-19 pandemic on the emotional well-being and psychological adjustment of health professionals and the general population, and whose project was approved by the Research Ethics Committee of Huelva (Spain), belonging to the Regional Ministry of Health of Andalusia (PI 036/20).

2.4. Data analysis

All statistical analyses were carried out using the SPSS 26.0 statistical software (IBM, Armonk, NY). First, an exploratory analysis was conducted to study the presence of anomalous values or outliers. Next, a descriptive analysis was carried out using statistics such as frequency, mean, and standard deviation depending on the type of variable (categorical or quantitative). To address the relationship of categorical variables between participants who presented psychological distress and those who did not, the chi-squared test was used. For all continuous variables, a Student *t* test was applied. Cramer V and Cohen *d* (<0.19 negligible; 0.20–0.49 small; 0.50–0.79 medium; >0.80 high) were calculated as effect size indices. Finally, to predict the presence of psychological distress, a binary logistic regression model including variables with *P* value <.05 was applied to identify those with greater predictive capacity. The dependent variable was coded with “0” for participants who did not present psychological distress and with “1” for participants who did present psychological distress. The Hosmer-Lemeshow test was used to check the goodness of fit of each model. The predictive capacity of variables was calculated using Nagelkerke *R*². Odds ratios (ORs) were calculated with a 95% confidence interval (CI).

3. Results

3.1. Sociodemographic characteristics

Most of the participants were women (71.9%; *n*=800) and 28.1% (*n*=312) were men. The mean age was 42.55 years (SD=16.13). The most reported marital status was married or living as a couple (49.9%; *n*=555), followed by single (36.2%; *n*=402). In relation to the educational level, 40.7% (*n*=453) of the sample had higher degree studies, while 31.3% (*n*=348) reported postgraduate studies. Considering the employment situation at the time of the study, 48.8% (*n*=543) of the participants were working from home, while 32% (*n*=356) exercised their professional work outside the home, and 19.3% (*n*=215) did not work.

3.2. Psychological distress

Description of mean and standard deviations of the participants' responses to each of the General Health Questionnaire questions are presented in the Table 1. The highest scores were those corresponding to items 5, “Have you felt constantly overwhelmed and stressed?” (mean [*M*]=2.66; SD=0.95), and 7, “Have you been able to enjoy your normal daily activities?” (*M*=2.52; SD=0.88); the lowest scores were obtained in items 11, “Have you thought that you are a worthless person?” (*M*=1.37; SD=0.76) and 10, “Have you lost confidence in yourself?” (*M*=

Table 1
Participants' responses to the General Health Questionnaire - GHQ-12 (N = 1112).

Items	<i>M</i> (<i>SD</i>)
1. Have you been able to concentrate well on what you were doing?	2.48 (0.76)
2. Have your worries made you lose a lot of sleep?	2.43 (1.00)
3. Have you felt that you are playing a useful role in life?	2.18 (0.84)
4. Have you felt capable of making decisions?	2.10 (0.68)
5. Have you felt constantly overwhelmed and stressed?	2.66 (0.95)
6. Have you had the feeling that you cannot overcome your difficulties?	2.20 (0.93)
7. Have you been able to enjoy your normal daily activities?	2.52 (0.88)
8. Have you been able to adequately cope with problems?	2.21 (0.66)
9. Have you felt unhappy or depressed?	2.34 (0.99)
10. Have you lost confidence in yourself?	1.74 (0.90)
11. Have you thought that you are a worthless person?	1.37 (0.76)
12. Do you feel reasonably happy considering all the circumstances?	2.13 (0.75)
Scale total (over 12 points)	4.23 (3.47)
Presence of psychological distress (cut point ≥3)	(%)
Yes	60.9
No	39.1

M (*SD*)=mean (standard deviation).

1.74; SD=0.90). The mean score on the total scale was 4.23 points out of 12 (SD=3.47). Establishing a cut-off point of 3 or more points on the total scale to assess the presence of psychological distress, the results showed that 60.9% of the participants had this morbidity at the time of their participation in the study.

Considering the relationship between the different sociodemographic variables collected and the presence of psychological distress (Table 2), the results showed significant relationships with sex, age, and marital status (*P* < .05 in all cases). Thus, a greater presence of psychological distress was observed in the group of women (76.7% vs 23.3% in men) and in people with younger mean age (*M*=40.67; SD=12.72) as compared to the group that did not present this psychic morbidity (*M*=45.49; SD=13.32). For the rest of the variables (educational level, employment status, type of dwelling, living with children or under-16 youngsters, living with disabled people), no statistically significant relationships were found (*P* < .05 in all cases).

3.3. Physical symptoms in the past 14 days and psychological distress

The variables related to the presence of COVID-19 symptoms in the 14 days prior to the participation in the study are presented in Table 3. The most commonly reported symptoms by participants were headache (39.8%), myalgia (25.6%), and coryza (16.6%). To a lesser extent, sore throat (11.1%), cough (10.6%), diarrhea (8%), dizziness (6.7%), breathing difficulty (3.4%), chills (2.5%), and fever (0.9%). In relation to the number of symptoms presented, 24.9% of the participants stated that they had presented only 1 symptom, while 17.6% reported the presence of 2 symptoms and 17.4% of 3 or more. For all symptoms except fever, chills, and breathing difficulty, significant relationships were found with the presence of psychological distress (Table 3). Similarly, significant differences were found in the mean number of manifested symptoms (*t*=−7,952; *P* < .001; *d*=0.472), with higher values in the group of participants who presented this psychic morbidity (*M*=1.50; SD=1.48) as compared to those who did not (*M*=0.85; SD=1.20).

Table 2
Association between sociodemographic variables and psychological distress during the COVID-19 pandemic (N=1112).

	N (%)	Psychological distress		χ^2/t	P	Effect size
		No (n=435)	Yes (n=677)			
Sex						
Male	312 (28.1)	35.4	23.3	19.095	<.001	0.131
Female	800 (71.9)	64.6	76.7			
Age [mean (SD)]	42.55 (13.16)	45.49 (13.32)	40.67 (12.72)	6.060	<.001	0.372
Marital status						
Single	403 (36.2)	29.9	40.3	12.859	.002	0.108
Married or living as a couple	555 (49.9)	55.6	46.2			
Separated/divorced/widowed	154 (13.8)	14.5	13.4			
Educational level						
Secondary education or lower	147 (13.2)	13.8	12.9	1.914	.590	0.041
Technical/non-university higher level	164 (14.7)	16.3	13.7			
University	453 (40.7)	39.1	41.8			
Postgrade, Master, or Doctorate	348 (31.3)	30.8	31.6			
Employment status						
Working away from home	355 (32.0)	33.8	30.8	1.287	.525	0.034
Working from home	542 (48.8)	48.0	49.3			
Not working	214 (19.3)	18.2	20.0			
Type of dwelling						
Flat or apartment	432 (38.9)	35.4	41.1	3.647	.056	0.057
House	679 (61.1)	64.6	58.9			
Living with children or under-16 youngsters						
No	634 (57.0)	58.4	56.1	0.552	.457	0.022
Yes	478 (43.0)	41.6	43.9			
Living with disabled people						
No	1039 (93.4)	93.6	93.4	0.019	.890	0.004
Yes	73 (6.6)	6.4	6.6			

χ^2/t =chi-squared test/Student *t* test.
 COVID-19 = coronavirus disease 2019.

3.4. Health-related variables and psychological distress

According to health-related variables (Table 4), 30.3% of the sample reported suffering from some type of chronic disease, among which the most frequently reported ones were: arterial hypertension (36.2%), chronic respiratory disease (19.58%), diabetes (10.38%), metabolic syndrome (6.52%), disease or immunosuppression situation (5.04%), and chronic cardiovascular disease (4.45%). 37.4% of the participants reported taking some type of medication and 7.5% stated having received health care in a health center, clinic, or hospital. 0.9% of the sample said they had been quarantined for the presence of symptoms in the 14 days prior to their participation in the study, and 2.1% had been performed the diagnostic test. None of these variables showed a significant relationship with the presence of psychological distress. Finally, when participants were asked about how they had perceived their health in the last 14 days, the results showed significantly worse ratings ($t=8.594$; $P<.001$; $d=0.514$) in the group of people with psychological distress ($M=4.23$, $SD=0.72$) as compared to the group without psychological distress ($M=4.57$, $SD=0.56$).

3.5. Variables related to contact history in the past 14 days and psychological distress

Regarding contact history in the last 14 days, 28.3% of the sample claimed to have had or were unaware of having had contact with a person or material suspicious of being infected with COVID-19. 20% reported having had casual contact with an individual with confirmed COVID-19 infection, and 14.2%

having had close contact. None of these variables showed a relationship with the presence of psychological distress ($P>.05$ in all cases).

96.9% said they did not have any family member infected with the virus at the time of participating in the study. This variable did not either show a relationship with the presence of psychological distress ($P=.645$) (Table 5).

3.6. Prediction of psychological distress

The logistic regression model, controlled by sex and age, is displayed in Table 6. The results of the Hosmer-Lemeshow test showed a good goodness of fit of the model ($X^2=10.318$, $P=.243$). The percentage of variance explained was 14.3% ($X^2=123.479$, $P<.001$), correctly classifying 65.8% of participants (82.1% sensitivity and 40.5% specificity). The variables that showed a predictive character about the presence of psychological distress were sex, specifically being a woman ($OR=1.575$; $P=.002$; 95% $CI=[1.186, 2.092]$), being of younger age ($OR=0.979$; $P<.001$; 95% $CI=[0.968, 0.989]$), presenting a higher number of symptoms related to COVID-19 ($OR=1.224$; $P<.001$; 95% $CI=[1.095, 1.368]$), and a lower score in self-perceived health ($OR=0.573$; $P<0.001$; 95% $CI=[0.429, 0.671]$).

4. Discussion

The present study has aimed to determine the presence of symptoms of psychological distress during the ASPO decreed by the Argentine Government in the framework of the health

Table 3
Association between physical symptoms in the past 14 days and psychological distress during the COVID-19 pandemic (N = 1112).

	N (%)	Psychological distress		χ^2/t	P	Effect size
		No (n=435)	Yes (n=677)			
Fever (>38°C for at least 1 day)						
No	1102 (99.1)	99.5	98.8	1.549	.213	0.037
Yes	10 (0.9)	0.5	1.2			
Cough						
No	994 (89.4)	92.6	87.3	7.982	.005	0.085
Yes	118 (10.6)	7.4	12.7			
Headache						
No	669 (60.2)	70.1	53.8	29.532	<.001	0.163
Yes	443 (39.8)	29.9	46.2			
Myalgia						
No	827 (74.4)	84.1	68.1	35.762	<.001	0.179
Yes	285 (25.6)	15.9	31.9			
Dizziness						
No	1037 (93.3)	95.4	91.9	5.236	.022	0.069
Yes	75 (6.7)	4.6	8.1			
Diarrhea						
No	1023 (92.0)	94.7	90.3	7.160	.007	0.080
Yes	89 (8.0)	5.3	9.7			
Sore throat						
No	989 (88.9)	93.8	85.8	17.114	<.001	0.124
Yes	123 (11.1)	6.2	14.2			
Coryza						
No	927 (83.4)	87.4	80.8	8.214	.004	0.086
Yes	185 (16.6)	12.6	19.2			
Chills						
No	1084 (97.5)	98.6	96.8	3.774	.052	0.058
Yes	28 (2.5)	1.4	3.2			
Breathing difficulty						
No	1074 (96.6)	97.7	95.9	2.708	.100	0.049
Yes	38 (3.4)	2.3	4.1			
Number of symptoms [mean (SD)]	1.25 (1.41)	0.85 (1.20)	1.50 (1.48)	-7.952	<.001	0.472

COVID-19 = coronavirus disease 2019.

Table 4
Association between health-related variables and psychological distress during the COVID-19 pandemic (N = 1112).

	N (%)	Psychological distress		χ^2/t	P	Effect size
		No (n=435)	Yes (n=677)			
Chronic diseases						
No	775 (69.7)	70.1	69.4	0.060	.807	0.007
Yes	337 (30.3)	29.9	30.6			
Currently taking any medication						
No	696 (62.6)	60.2	64.1	1.700	.192	0.039
Yes	416 (37.4)	39.8	35.9			
Health care in a health center, clinic or hospital in the past 14 days						
No	1029 (92.5)	93.3	92.0	0.658	.417	0.024
Yes	83 (7.5)	6.7	8.0			
Self-rated health in the past 14 days*	4.37 (0.68)	4.57 (0.56)	4.23 (0.72)	8.594	<.001	0.514
Recent quarantine in the past 14 days for having symptoms						
No	1102 (99.1)	99.3	99.0	†	.748	0.018
Yes	10 (0.9)	0.7	1.0			
Recent testing for COVID-19 in the past 14 days						
No	1089 (97.9)	97.7	98.1	0.187	.665	0.013
Yes	23 (2.1)	2.3	1.9			

χ^2/t = chi-squared test/Student *t* test.

COVID-19 = coronavirus disease 2019.

* Likert-type scale from 1 (very bad) to 5 (very good).

† Fisher exact test.

Table 5
Association between contact history variables in the past 14 days and psychological distress during the COVID-19 pandemic (N=1112).

	N (%)	Psychological distress		χ^2	P	Effect size
		No (n=435)	Yes (n=677)			
Close contact with an individual with confirmed infection with COVID-19						
No	954 (85.8)	86.9	85.1	0.716	.397	0.025
Yes or does not know	158 (14.2)	13.1	14.9			
Casual contact with an individual with confirmed infection with COVID-19						
No	890 (80.0)	81.6	79.0	1.107	.293	0.032
Yes or does not know	222 (20.0)	18.4	21.0			
Contact with any person or material suspicious of being infected with COVID-19						
No	797 (71.7)	73.3	70.6	0.971	.325	0.030
Yes or does not know	315 (28.3)	26.7	29.4			
Any infected family member						
No	1077 (96.9)	96.6	97.9	0.212	.645	0.014
Yes or does not know	35 (3.1)	3.4	3.0			

χ^2 = chi-squared test.
 COVID-19 = coronavirus disease 2019.

emergency due to COVID-19 during a period of 8 consecutive months in 2020. Likewise, its association with sociodemographic variables and health conditions in the general population has been identified.

Local studies^[16–19] conducted during the first weeks of lockdown identified psychological distress in the Argentine population, with rates above 70%, higher than those reported prior to the COVID-19 health emergency.^[29] It is noteworthy that these rates occurred despite a low number of confirmed cases and deaths, which could be due to an emotional reaction to the sudden and forced interruption of normal daily life.^[16,30,31] The literature does not only point to the direct effect of the pandemic on mental health, but also to its indirect effect caused by the measures taken to contain the virus. The efficacy of lockdown as a containment and safety measure in previous epidemics has been studied.^[32–34] However, Rubin and Wessely^[30] point out that the potential benefits of a quarantine can be mitigated by the impact on the mental health of the population, regardless of whether or not the evolution of a disease can be controlled. This impact is most significant when isolation measures are official and imposed, and this includes anxiety and fear of stigmatization of those who have gone through the disease. However, evidence suggests that people under lockdown are more likely to develop various psychological symptoms such as insomnia, emotional fatigue, fears, and depression.^[13,14,32] In addition, these symptoms are intensified in developing countries, with a high number of self-employed, independent workers, or low-wage workers.^[32]

In the case of this study, conducted between May and August 2020, it was identified that 60.9% of the participants had psychological distress. Thus, when considering that various studies on the impact of lockdown by epidemics place the prevalence of distress between 20% and 57%,^[8,10] it is observed that, in the present study sample, there was greater psychological vulnerability, being the results consistent with what was reported in different national^[5,17–19] and international studies.^[6,7,11,12,15,23] In addition, the reported percentage shows that levels of psychological distress during the COVID-19 pandemic remained above prevalence rates for symptoms and use of mental health services in Argentina.^[16] Likewise, the evidence reported by researchers from the Observatory of Comparative Social Psychology of the University of Buenos Aires^[19] shows a

sustained and significant increase in the number of people at risk of suffering from a mental disorder over 3 time periods of the pandemic (7–11 days; 50–55 days; and 115–124 days), being higher in the region with the highest population density, possibly due to the implementation of more strict measures. All these results would be related to the permanent uncertainty about the completion of the ASPO and to the sustained expectations about the return to face-to-face work and educational activities, as well as about the reopening of leisure activities and gatherings.

In relation to the assessed sociodemographic variables, statistically significant relationships with sex, age, and marital status were detected. Regarding the first 2 variables, a greater presence of psychological distress was observed in women and in the younger age group, which is consistent with the reports of national^[16–19] and international studies.^[6,7,12,15] In the case of sex, being a woman is considered a personal/individual risk factor for psychological distress, and mood disorders in general,^[8,9,16,18] which could have been magnified during the ASPO. It can be assumed that the increase in symptomatology among women is associated, in a high percentage of cases, with the reduction or total loss of family income that may lead to the consequent alteration of the family economy, as well as with the transfer of education to the heart of the home, the lack of equitable division of domestic responsibilities, and the increase in situations of domestic violence.^[7,20,31]

The inverse relationship between levels of psychological distress and the age of the participants could be understood in different ways. Some studies suggest that the increase in psychiatric symptoms or more negative emotional reactions in the younger group may be due to the fact that this group has less flexible coping styles in the face of adverse situations,^[5,9,23] or to the limitation of social life and physical, work, and educational activities, with a more negative perception of the cost-benefit ratio of lockdown measures.^[16,31] On the other hand, it should be considered that this study, like others, has been carried out through online questionnaires, which could have biased the group of older adults participating,^[8,11] not being properly reflected the reality of those who have remained isolated from their support networks and did not have access to information and communication technologies during the studied period of time. At the same time, it is considered that young people could have presented more indicators of psychological distress due to

Table 6
Prediction of psychological distress.

	β	SE	Wald	df	P	OR	OR (95% CI)	
							LL	UL
Sex (ref. male)	0.454	0.145	9.864	1	.002	1.575	1.186	2.092
Age	-0.021	0.005	15.094	1	<.001	0.979	0.968	0.989
Marital status (ref. single)			0.606	2	.739			
Married or living as a couple	-0.092	0.151	0.368	1	.544	0.912	0.678	1.228
Separated/divorced/widowed	0.030	0.221	0.018	1	.893	1.030	0.667	1.590
Number of symptoms	0.202	0.057	12.593	1	<.001	1.224	1.095	1.368
Self-rated health in the past 14 days	-0.622	0.114	29.786	1	<.001	0.537	0.429	0.671
Constant	2.603	0.592	37.042	1	<.001	36.721		

OR (95% CI) = odds ratio (confidence interval at the 95% level).

information overload through virtual social networks and difficulties in differentiating fake and truthful information in relation to COVID-19.^[15,23]

Regarding marital status, it was detected that single people presented mental morbidity, which could be due to the difficulties in balancing work and daily life as the new situation brought about, as well as to the limitation of social life and the perception of loneliness and lack of support networks in case of contracting the disease. This can be understood in the light of other studies^[7,8,10,17,18] which showed that having children and living with a partner or family member operate as factors of well-being or perception of less discomfort, while living alone or having a non-cohabiting partner would become factors of psychological distress. The differences with the study by Eidman et al^[5] could be due both to the difference in the methodological approach and in the conceptualization of psychological variables.

In the present study, it has been observed that the presence of symptoms of COVID-19 in the 14 days prior to the participation in the study was related to the levels of psychological distress, considering the mean number of symptoms. In this sense, the results coincide with some international studies^[6,8,10,33] that identified an association between symptoms of COVID-19, such as sore throat and myalgia, and higher levels of anxiety and depression, and with the perception of vulnerability to the infection.

Conversely to what was expected and evidenced in international studies,^[8,9,12,15] suffering from chronic diseases such as arterial hypertension or diabetes, the consumption of medication, and the need for some type of health care in the 14 days prior to the participation in the study showed no statistically significant relationship with the presence of psychological distress. This could be due to the early support and emotional containment networks provided by mental health professionals in Argentina for certain risk groups.

Regarding the perception of health in the last 14 days, the data indicate that this was worse in the group with psychological distress, which could be due to the fact that the perception of health is subjective and personal, and as such, exerts effects on variables such as adequate stress management and emotional self-regulation.^[35-37] Unlike other studies,^[10,32] this relationship is not explained by the history of close contact with people with COVID-19 as a generator of anxiety or stress, being a variable that, here, does not appear as relevant in terms of the detected levels of psychological distress.

Among the limitations of the study, we must highlight the observational and cross-sectional design that was developed, since it is aimed at informing about the ways in which the

COVID-19 pandemic is experienced or perceived, without delving into causal relationships or multivariate interactions. The selection of the sample has not been probabilistic and, therefore, the groups by age, sex, marital status, and origin are asymmetrical. Repeating the study at the present time may make it possible to offer a solution for some of the above limitations. In addition, future studies could go deeper into the psychological consequences of the pandemic in those groups that the literature considers most vulnerable, such as women and the youngest.

In sum, the variables identified as predictors of psychological distress in relation to the COVID-19 pandemic for the adult population in Argentina were sex, specifically being a woman, the number of symptoms related to COVID-19, being younger, and self-perceived health. These results contribute to the accumulation of empirical evidence on the psychological repercussions of this pandemic in Argentine society, findings that represent a wake-up call to adapt the country's public policies to the real needs of the population in terms of mental health.

Author contributions

Conceptualization: María Beatriz Lucuix, Juan Gómez-Salgado, Sara Domínguez-Salas, Carlos Ruiz-Frutos.

Data curation: Myriam E Barone, Sara Domínguez-Salas, Leticia Elizabeth Luque, Carmen Rodríguez-Domínguez.

Formal analysis: María Beatriz Lucuix, Sara Domínguez-Salas, Leticia Elizabeth Luque, Carmen Rodríguez-Domínguez, Carlos Ruiz-Frutos.

Investigation: María Beatriz Lucuix, Juan Gómez-Salgado, Myriam E Barone, Carmen Rodríguez-Domínguez, Carlos Ruiz-Frutos.

Methodology: María Beatriz Lucuix, Juan Gómez-Salgado, Sara Domínguez-Salas, Leticia Elizabeth Luque, Carmen Rodríguez-Domínguez, Carlos Ruiz-Frutos.

Project administration: Sara Domínguez-Salas.

Resources: Juan Gómez-Salgado, Leticia Elizabeth Luque, Carmen Rodríguez-Domínguez, Carlos Ruiz-Frutos.

Software: Juan Gómez-Salgado, Leticia Elizabeth Luque, Carmen Rodríguez-Domínguez.

Supervision: María Beatriz Lucuix, Juan Gómez-Salgado, Carmen Rodríguez-Domínguez, Carlos Ruiz-Frutos.

Validation: Sara Domínguez-Salas, Leticia Elizabeth Luque, Carmen Rodríguez-Domínguez.

Visualization: María Beatriz Lucuix, Juan Gómez-Salgado, Myriam E Barone, Carmen Rodríguez-Domínguez, Carlos Ruiz-Frutos.

Writing – original draft: María Beatriz Lucuix, Myriam E Barone, Leticia Elizabeth Luque, Carmen Rodríguez-Domínguez.
Writing – review & editing: Juan Gómez-Salgado, Sara Domínguez-Salas, Carlos Ruiz-Frutos.

References

[1] Mahase E. China coronavirus: WHO declares international emergency as death toll exceeds 200. *BMJ* 2020;368:m408.

[2] World Health Organization. Statement on the Second Meeting of the International Health Regulations (2005). Emergency Committee Regarding the Outbreak of Novel Coronavirus (2019-nCoV). Available at: [https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-\(2005\)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-\(2019-ncov\)](https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov)). Accessed May 15, 2020.

[3] World Health Organization. WHO Director-General’s opening remarks at the media briefing on COVID-19-11 March 2020. Available at: <https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19-11-march-2020>. Accessed May 9, 2020.

[4] Decreto Nacional 297/2020. Aislamiento Social Preventivo y Obligatorio (Boletín Oficial de la República Argentina, 19 de marzo de 2020).

[5] Eidman L, Bender V, Arbizu J, et al. Bienestar emocional, psicológico y social en adultos argentinos en contexto de pandemia por COVID-19. *Psicología* 2020;14:69–80.

[6] Wang J, Wang JX, Yang G. The Psychological impact of COVID-19 on Chinese individuals. *Yonsei Med J* 2020;61:438.

[7] Rodríguez-Rey R, Garrido-Hernansaiz H, Collado S. Psychological impact and associated factors during the initial stage of the Coronavirus (COVID-19) pandemic among the general population in Spain. *Front Psychol* 2020;11:1540.

[8] Bendau A, Kunas S, Wyka S, et al. Longitudinal changes of anxiety and depressive symptoms during the COVID-19 pandemic in Germany: the role of pre-existing anxiety, depressive, and other mental disorders. *J Anxiety Disord* 2021;79:102377.

[9] Xiong J, Lipsitz O, Nasri F, et al. Impact of COVID-19 pandemic on mental health in the general population: a systematic review. *J Affect Disord* 2020;277:55–64.

[10] Gomez-Salgado J, Andrés-Villas M, Dominguez-Salas S, et al. Related health factors of psychological distress during the COVID-19 pandemic in Spain. *Int J Environ Res Public Health* 2020;17:3947.

[11] Losada-Baltar A, Jiménez-Gonzalo L, Gallego-Alberto L, et al. “Nos quedamos en casa”. Asociación de Auto-percepciones del envejecimiento, recursos personales y familiares, y la soledad con angustia psicológica durante el período de encierro de COVID-19. *J Gerontol B Psychol Sci Soc Sci* 2021;76:e10–6.

[12] Pinkham A, Ackerman R, Depp C, et al. A longitudinal investigation of the effects of the COVID-19 pandemic on the Mental Health of individuals with pre-existing severe mental illnesses. *Psychiatry Res* 2020;294:113493.

[13] Vilchez-Tornero M, Vilchez-Tornero JL. Coercive measures from patients’ psychological point of view. *Rev Cubana Med Milit* 2017;46:276–88.

[14] Cosic K, Popovic S, Sarlija M, Kesedžić I. Impact of human disasters and COVID-19 pandemic on mental health: potential of digital psychiatry. *Psychiatr Danub* 2020;32:25–31.

[15] Ozamiz-Etxebarria N, Mondragón N, Santamaría M, Gorrotxategi MP. Psychological symptoms during the two stages of lockdown in response to the COVID-19 outbreak: an investigation in a sample of citizens in Northern Spain. *Front Psychol* 2020;11:1–9.

[16] Torrente F, Yoris A, Low D, et al. Sooner than you think: a very early affective reaction to the COVID-19 pandemic and quarantine in Argentina. *J Affect Disord* 2021;282:495–503.

[17] Alomo M, Gagliardi G, Pelocche S, Somers E, Alzina P, Prokopez CR. Efectos psicológicos de la pandemia COVID-19 en la población general de Argentina. *Rev Fac Cien Med Univ Nac Cordoba* 2020;77:176–81.

[18] Fernández RS, Crivelli L, Guimet NM, Allegri RF, Pedreira ME. Psychological distress associated with COVID-19 quarantine: latent profile analysis, outcome prediction and mediation analysis. *J Affect Disord* 2020;277:75–84.

[19] Etcheverys MJ, Garay CJ, Putrino N, et al. Salud Mental en Cuarentena. Relevamiento del impacto psicológico a los 7-11, 50-55 y 115-124 días de cuarentena en población argentina. Observatorio de Psicología Social Aplicada, Facultad de Psicología, Universidad de Buenos Aires (Argentina). 2020. Available at: <http://www.psi.uba.ar/opsa/#informes>. Accessed October 30, 2021.

[20] Instituto Nacional de Estadísticas y Censos de la República Argentina. Estudio del impacto de la COVID-19. Available at: <https://www.indec.gov.ar/indec/web/Nivel4-Tema-4-27-159>. Accessed October 30, 2021.

[21] Qiu J, Shen B, Zhao M, Wang Z, Xie B, Xu Y. A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: implications and policy recommendations. *Gen Psychiatry* 2020;33:e100213.

[22] 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.

[23] Dominguez-Salas S, Gómez-Salgado J, Andrés-Villas M, et al. Psycho-emotional approach to the psychological distress related to the COVID-19 pandemic in Spain: a cross-sectional observational study. *Healthcare* 2020;8:190.

[24] Instituto Nacional de Estadísticas y Censos, República Argentina. [Internet]. Informes técnicos 5(4). Available at: https://www.indec.gov.ar/uploads/informesdeprensa/internet_03_216BB50E4C42.pdf. Accessed October 30, 2021.

[25] World Health Organization. Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19). Available at: <https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf>. Accessed May 9, 2020.

[26] Goldberg DP, Gater R, Sartorius N, Ustun TB, Gureje O, Rutter C. The validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychol Med* 1997;27:191–7.

[27] Barrios-Osuna I, Anido-Escobar V, Morera-Pérez M. Declaración de Helsinki: Cambios y exégesis. *Rev Cuba Salud Pública* 2016;42:132–42.

[28] Ley 25326/2000, de 4 de octubre, sobre Protección de Datos Personales. (Boletín Oficial de la República Argentina, 02 de noviembre de 2000).

[29] Stagnaro JC, Cia AH, Aguilar-Gaxiola S, et al. Twelve-month prevalence rates of mental disorders and service use in the Argentina Study of Mental Health Epidemiology. *Soc Psychiatry Psychiatr Epidemiol* 2018;53:121–9.

[30] Rubin G, Wessely S. The psychological effects of quarantining a city. *BMJ* 2020;368:m313.

[31] UNICEF Argentina. Encuesta de Percepción y Actitudes de la Población. Impacto de la pandemia COVID-19 y las medidas adoptadas por el gobierno sobre la vida cotidiana. Informe de resultados. Available at: <https://www.unicef.org/argentina/media/8051/file>. Accessed October 30, 2021.

[32] Brooks SK, Webster RK, Smith LE, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet* 2020;395:912–20.

[33] Cava MA, Fay KE, Beanlands HJ, McCay EA, Wignall R. The experience of quarantine for individuals affected by SARS in Toronto. *Public Health Nurs* 2005;22:398–406.

[34] Saez M, Tobias A, Varga D, et al. Effectiveness of the measures to flatten the epidemic curve of COVID-19. The case of Spain. *Sci Total Environ* 2020;727:138761.

[35] Idler EL, Benyamini Y. Self-rated health and mortality: a review of twenty-seven community studies. *J Health Soc Behav* 1997;38:21–37.

[36] Medina-López O, Díaz-Pinzón A, Barrientos-González E, Martínez DEP. Percepción de salud y su efecto en pacientes con diabetes. *Avances en Enfermería* 2009;XXVII:13–8.

[37] Sánchez-Galarza A, Delfino-Blanco C, Rosa-Rodríguez Y, Torres-Pagán L. Percepción de salud general y calidad de vida de puertorriqueños/as con enfermedades cardiovasculares. *Salud y Sociedad* 2018;9:294–305.