'It's the economy, stupid': Lessons of a longitudinal study of depression in Argentina

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Abstract

Background: On March 20, 2020, the Argentine Ministry of Health imposed a mandatory quarantine, which still persists.

Aim: The aim of this study is to determine the variation in the prevalence of depression since the beginning of the quarantine and the evolution of risk factors, with special emphasis on the population's concerns.

Methods: A longitudinal study was carried out using a digital questionnaire disseminated in social networks. The first stage (T1) was carried out from March 29 to April 12 and the second stage (T2) from May 23 to June 12, 2020. The prevalence of depression was measured using the 9-item Patients Health Questionnaire (PHQ-9).

Results: The prevalence of moderate/severe depression increased from 24.3% in T1 to 47.8% in T2 (p: 0.000). Risk factors increased significantly: age 18–27, female, primary and secondary school, smoking and having a poor sleep quality (p: 0.000). The concerns about 'a family member getting sick' (OR: 1.28; CI: 1.04–1.58; p: 0.016), 'changes at work' (OR: 2.24; CI: 1.79–2.81; p: 0.000), 'running out of money' (OR: 1.43; CI: 1.20–1.71; p: 0.000) and 'being unemployed' (OR: 2.99; CI: 2.55–3.52; p: 0.000) were risk factors for depression. On the other hand, the concern about 'getting the virus' (OR: 0.73; CI: 0.61–0.87; p: 0.001) was not a risk factor.

Conclusions: The extended quarantine in Argentina is associated with an increase in the prevalence of depression; the high impact of economic and social concerns on mental health must be considered in order to avoid long-term effects.

Keywords

COVID-19, depression, quarantine, Argentina, concerns

Introduction

The COVID-19 pandemic started in December, 2019 in Wuhan, China, causing an unprecedented impact on global health (Huang & Zhao, 2020; Kang et al., 2020; Özdin & Özdin, 2020; Vindegaard & Benros, 2020). On March 3, 2020 authorities of the Argentine Ministry of Health reported the first confirmed case of COVID-19 (Ministerio de Salud de la República Argentina, 2020), and on March 20 the Argentine Government imposed a mandatory quarantine, which included a number of restrictions in mobility, school activities at all levels and economic activity, among others (Gobierno de la República Argentina, 2020a). At the time this study began, 11,353 confirmed cases and 445 deaths had been reported in Argentina (Gobierno de la República Argentina, 2020a), and 5,103,006 confirmed cases and 333,401 deaths had been reported worldwide (WHO, 2020a).

Confinement and social distancing were part of the measures taken by some countries to stop the spread of the virus. These steps, added to the limitations in economic activity, had a major impact on global economy as well as they brought about an unprecedented recession since the Great Depression. These global changes cause an increase in unemployment and labour precariousness, which affects

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each country differently. (World Bank, 2020). In Argentina, the unemployment rate increased from 10.4% (before quarantine) to 13.1% (at the moment this study began) (Instituto Nacional de Estadísticas y Censo [INDEC], 2020).

There is ample scientific evidence of the impact of confinement and quarantine on mental health, which is borne out in the current pandemic (Lei et al., 2020; Pappa et al., 2020; Qiu et al., 2020; Rubin & Wessely, 2020). Such impact persists over time (Lee et al., 2007). It has also been found that economic crises affect mental health, causing disorders such as depression, antisocial behaviour and substance abuse (Goldman-Mellor, 2010; Hertz-Palmor, 2020; Ornell et al., 2020; Rhem et al., 2020).

A previous study (Badellino, et al., 2020) initiated 9 days after mandatory quarantine was declared in Argentina revealed a high impact on the mental health of Argentine population (anxiety: 15.1%; depression: 24.4%; stress: 22.9%), mainly in vulnerable population groups (women, young people, people living with others and smokers). The study also showed that the impact was not related to the number of confirmed cases and deaths reported up to that point. We hypothesize that the factors that may have contributed to such significant impact (greater than in China and Spain, among other countries) were the economic and social situation prior to the quarantine, the time elapsed since the beginning of the pandemic to the first confirmed case in Argentina and the dissemination of news from other parts of world by the media.

Although many cross-sectional studies that provide a panorama of the state of public in different countries have been published in the last months (Campos et al., 2020; Cía et al., 2020; Liu et al., 2020; Newby et al., 2020), there are few studies showing the evolution of the psychological impact over time (Daly et al., 2020; Ettman et al., 2020; Li et al., 2020; Pierce et al., 2020; Ren et al., 2020; Wang et al., 2020). At the time this study initiated, there was no insight on the evolution of psychological distress in Argentine inhabitants. We hypothesize that the extended quarantine (declared 3 months and a half before the end of this survey), together with isolation and restrictions in mobility and in commercial and educational activities, may produce a greater impact than that shown at the beginning of the quarantine and that was described in the previous study (Badellino et al., 2020). Our main objective is to know the progression in time of the prevalence of depression in the Argentine population. On the other hand, as part of secondary objectives, we will analyse the demographic factors and concerns that may influence such prevalence.

Methods

Study design and study population

From March 29, 2020 to April 12, 2020 we conducted a cross-sectional survey (T1) to determine the psychological impact (anxiety, depression and stress) of the COVID-19 pandemic on Argentine population using an anonymous, voluntary online questionnaire. The online survey was made with a digital tool (Google Forms) and was spread on social networks (Facebook, Twitter, Instagram) and by email. Inclusion criteria were as follows: (a) being over 18 years of age and (b) living in Argentina. Exclusion criteria were as follows: (a) having a previous mental disorder and (b) having dyslexia.

First, participants were asked to provide their demographic and social information: age (age groups: 18 to 27, 28 to 39, 40 to 64 and 65 or older), sex, education level (primary, secondary or higher education), city of residence, way of living (living alone or living with family members, friends or partners), alcohol and cigarette consumption, and occupation.

From May 23 to June 12 we carried out the second stage of the study (T2), in which we used the same tools, dissemination channels, and inclusion and exclusion criteria as those used in T1. In this second stage (T2) questions about participants' economic and employment situation and concerns were added. To assess the current employment situation, we grouped the possible responses into a binary response: employed or unemployed. The following question was asked to determine participants' concern about the economic situation: 'How concerned have you been about your financial situation in the last month?' A Likert scale from 1 to 10 (0 = no concern and 10 = maximum concern) was used, and the level of concern was ranked as mild (0–4), moderate (5–7) or maximum (8–10).

Different concerns were also evaluated using a Likert scale from 1 to 4 (1 = not concerned; 2 = little concerned; 3 = concerned; 4 = very much concerned). The following concerns were considered: 'getting the virus', 'a family member getting the virus' and 'running out of money to pay expenses, rent and taxes.' The answers were grouped as follows: No (I am not concerned; I am a little concerned) or Yes (I am concerned; I am very much concerned). Then, participants were asked to complete questionnaires measuring psychological distress and sleep quality.

Tools to measure the impact on mental health and sleep quality

The following tools were used to measure the impact on mental health (depression) and sleep quality:

PHQ-9 (Patients Health Questionnaire 9-items). This is an instrument to assess the presence and severity of depression symptoms. It consists of nine questions, each rated from 0 to 3. Possible answers were not at all sure (0), several days (1), over half the days (2) and nearly every day (3). The PHQ-9 scores are as follows: None (0-4), Mild (5-9), Moderate (10-14) and Severe (15-27). Only respondents who reported moderate or severe depression (10-27 points) were considered, since a cutoff score of

10 or greater has an 88% of sensibility and an 88% of specificity (Kroenke et al., 2001). A binary classification of depression symptoms with a score of 10 or greater was used.

Concerning the PHQ-9 test, we conducted a double analysis: on the one hand, we used the average symptom score; and, on the other hand, we compared the percentage of the population with moderate or severe score (10–27 points) versus the total of the respondents in order to know the prevalence of the disorder and its progression 2 months apart.

PSQI (Pittsburgh Sleep Quality Index). This is a self-report questionnaire that contains nine questions (19 items) and it is used to measure sleep quality and sleep disturbances during the past month. In this case, following Liu et al., only the following four items of the index were selected to measure sleep quality: (a) How would you rate your sleep quality overall? (0. Very good; 1. Fairly good; 2. Fairly bad and 3. Very bad) (b) How often have you had trouble sleeping because you cannot get to sleep within 30 minutes? (0. Not during the past month; 1. Less than once a week; 2. Once or twice a week; 3. Three or more times a week) (c) How often have you had trouble sleeping because you wake up in the middle of the night or early morning? (0. Not during the past month; 1. Less than once a week; 2. Once or twice a week; 3. Three or more times a week) (d) How many hours of actual sleep do you get at night? (Less than 5 hours per night; 6–7 hours per night; More than 7 hours per night) The use of some items has been seen in other studies since it has been proved that the use of isolated components for measuring subjective sleep quality highly correlates with the global PSQI score (Carpenter & Andrykoswiski, 1998). Responses with the two highest values in the scale and the response 'less than 7 hours' for the last question were considered significant.

Data analysis

Data were analysed in three steps. The first step consisted in the creation of contingency tables with the descriptive analysis of the data among the independent variables versus the dependent variable (depression) in order to know in general terms the relationship between these variables (*t*-test) in T1 and T2, separately. The second step consisted in comparing both stages. A *p*-value <0.05 was considered to be significant. Then, multiple binary logistic regressions were performed to evaluate in each model the relationship between the dependent variable (depression) and a set of independent variables, using a 95% confidence level to construct the intervals corresponding to odds ratios and to consider the statistical significance. *P*-value <0.05 was considered to be significant. The software used was SPSS 9.0 (IBM SPSS Statistics, New York, United States).

Ethical approval

A consent form was signed by all participants before they completed the survey. The study was approved by the Ethics Committee of Hospital Regional José Iturraspe of the city of San Francisco in Córdoba, Argentina.

Results

Evolution of the COVID-19 pandemic in Argentina during both study stages

At the beginning of the first stage of this study (T1: March 29), 745 confirmed cases and 19 deaths had been reported in Argentina (Gobierno de la República Argentina, 2020b), and 634,835 confirmed cases and 29,891 deaths had been reported globally (WHO, 2020a). At the beginning of the second stage (T2: May 23) of this study, 11,353 confirmed cases and 445 deaths had been reported in Argentina (Gobierno de la República Argentina, 2020c), and 5,103,006 cases and 333,401 deaths had been reported globally (WHO, 2020b).

Comparison of demographic characteristics and depression status between the first and second stage

The first stage of the study (T1) involved 1985 respondents; 75.8% (1505) were women, and the average age was $36.83 + 14.4$ years. The second stage of the study (T2) involved 2839 respondents; 75.3% (2137) were women and the average age was 27.95 ± 12.23 years. A lower mean age can be seen in the second stage of the study, which correlates with the higher number of students involved in the study. A total of 853 respondents (43% from T1) participated in both T1 and T2. Table 1 summarizes the demographic characteristics of both studied populations.

As regards demographic information in T1, 695 (35%) respondents were between 18 and 27 years old (1913 = 67.4% in T2), 471 (23.7%) were between 28 and 39 years old (389 = 13.7% in T2), 771 (38.9%) were between 40 and 64 years old (516 = 18.2% in T2) and 48 (2.4%) were 65 years old or older (21 = 0.7% in T2). Also, 326 (16.4%) respondents were health care workers (151 = 5.3% in T2), 228 (11.5%) lived alone (251 = 8.8% in T2), 388 (19.5%) were smokers (507 = 17.9% in T2) and 1423 (71.7%) and 2027 (71.4%) in T2 were studying for a degree or had already finished their higher education. There were not significant differences as regards dwelling size or alcohol consumption between both stages.

As regards sleep quality, 1023 (51.1%) respondents had trouble in getting to sleep within 30 minutes (1719 = 0.5% in T2), 1078 (54.3%) woke up in the middle of the night or early morning (1546 = 4.4% in T2), 551 (27.8%) slept less than 7 hours (1987 = 70% in T2) and 459 (23.1%) rated

Table 1. Association between socio-demographic variables and depression during the COVID-19 outbreak in Argentine population in stage 1 (T1) n: 1985 and stage 2 (T2) n: 2839.

	T1					T2				
	n (%)	Depression				n (%)	Depression			
		None	Mild	Moderate	Severe		None	Mild	Moderate	Severe
Sex										
Female	1505 (75.8)	768 (51)	337 (22.4)	302 (20)**	98 (6.5)*	2137 (75.3)	540 (25.3)	494 (23.1)	676 (31.6)*	427 (20)
Male	480 (24.2)	293 (61)	102 (21.2)	67 (14)	18 (3.8)	702 (24.7)	281 (40)	168 (24)	161 (23)	92 (13)
Age										
18–27 years old	695 (35)	240 (34.6)	168 (24.2)	207 (29.7)***	80 (11.6)*	1913 (67.4)	385 (20.1)	421 (22)	651 (34)**	456 (23.9)**
28–39 years old	471 (23.7)	257 (54.6)	119 (25.2)	80 (17.1)*	15 (3.2)	389 (13.7)	154 (39.6)	98 (25.2)	102 (26.2)*	35 (9)
40–64 years old	771 (38.9)	523 (67.8)	151 (19.6)	78 (10.2)	19 (2.5)	516 (18.2)	271 (52.5)	133 (25.8)	83 (16.1)	29 (5.6)
65 and older	48 (2.4)	43 (89.6)	3 (6.3)	2 (4.2)	0 (0)	21 (0.7)	16 (76.2)	4 (19)	1 (4.8)	0 (0)
Cohabitation										
With others	1757 (88.5)	936 (53.2)	392 (22.3)	325 (18.5)	104 (5.9)	2588 (91.2)	751 (29)	589 (22.7)	772 (30)	476 (18.3)
Alone	228 (11.5)	126 (55.3)	48 (21.1)	42 (18.4)	12 (5.3)	251 (8.8)	75 (30)	67 (26.7)	65 (25.9)	44 (17.4)
Education level										
University	1423 (71.7)	795 (55.8)	312 (22)	243 (17.1)*	73 (5.1)*	2027 (71.4)	434 (21.4)	445 (22)	679 (33.5)	469 (23.1)
Non-university	562 (28.3)	268 (47.7)	128 (22.8)	123 (21.9)	43 (7.7)	812 (28.6)	392 (48.2)	211 (26)	158 (19.5)***	51 (6.3)***
Health worker										
Yes	326 (16.4)	201 (61.5)	74 (22.8)	40 (12.3)**	11 (3.4)**	151 (5.3)	73 (48.2)	45 (29.8)	23 (15.2)***	10 (6.7)***
No	1659 (83.6)	861 (51.9)	366 (22.1)	327 (19.7)	105 (6.3)	2688 (94.7)	753 (28)	611 (22.7)	814 (30.3)	510 (19)
Smoker										
Yes	388 (19.5)	174 (44.8)	83 (21.4)	99 (25.5)***	32 (8.2)*	507 (17.9)	129 (25.4)	109 (21.6)	143 (28)	126 (25)***
No	1597 (80.5)	888 (55.6)	357 (22.4)	268 (16.8)	84 (5.3)	2332 (82.1)	697 (29.5)	547 (23.5)	694 (30)	394 (17)
Inability to sleep										
Yes	1023 (51.5)	383 (37.4)	271 (26.5)	275 (26.9)***	94 (9.2)***	1719 (60.5)	301 (17)	409 (24)	599 (35)***	410 (24)***
No	962 (48.5)	679 (70.6)	169 (17.6)	92 (9.6)	22 (2.3)	1120 (39.5)	525 (47)	247 (22)	238 (21)	110 (10)
Waking up in the middle of the night or early morning										
Yes	1078 (54.3)	451 (41.9)	275 (25.5)	256 (23.8)***	96 (8.8)***	1546 (54.4)	288 (12)	359 (23)	533 (34)***	366 (24)***
No	907 (45.7)	610 (67.3)	165 (18.2)	111 (12.2)	21 (2.3)	1293 (45.6)	538 (41.5)	297 (23)	304 (23.5)	154 (12)
Hours of sleep										
7 or more	1434 (72.2)	826 (57.6)	304 (21.2)	245 (17.1)	59 (4.1)	852 (30)	302 (35.4)	173 (20.3)	235 (27.5)	142 (16.8)
Less than 7	551 (27.8)	235 (42.7)	136 (24.7)	122 (22.2)***	58 (10.4)***	1987 (70)	524 (26.4)	483 (24.3)	602 (30.3)	378 (19)
Sleep quality										
Bad	459 (23.1)	122 (26.6)	123 (26.8)	139 (30.3)***	75 (16.3)***	912 (32.1)	70 (7.3)	162 (17.7)	346 (38)***	334 (37)***
Good	1526 (76.9)	940 (61.6)	317 (20.8)	228 (15)	41 (2.7)	1927 (67.9)	756 (39.2)	494 (25.6)	491 (25.5)	186 (9.7)

p: *≤0.05, **≤0.01, ***≤0.001.

Table 2. Differences in prevalence (expressed in %) and in the mean score of depression between T1 (*n*: 1985) and T2 (*n*: 2839).

Depression	Stage I	Stage II	Difference	Inf. Limit	Sup. Limit	*p*
Prevalence	24.30%	47.80%	23.50%			.000
Mean score	6.09	9.21	3.12			.000
18–27 years old	41.2%	57.9%	16.6%	12.3%	20.9%	.000
Living with others	24.4%	48.2%	23.8%	21.0%	26.6%	.000
Healthcare worker	15.7%	21.9%	6.2%	−1.6%	13.9%	.000
Smoker	33.8%	53.1%	19.3%	12.9%	25.7%	.000
Education level (non-University)	29.5%	56.6%	27.1%	22.7%	31.5%	.000
Inability to fall sleep	36.1%	58.7%	22.6%	18.9%	26.4%	.000
Waking up in the night	35.3%	58.2%	22.9%	21.8%	29.3%	.000
Sleeping less than 7 hours	32.6%	49.3%	16.8%	12.3%	21.3%	.000
Bad sleep quality	46.6%	74.6%	27.9%	22.6%	33.3%	.000
Female	26.6%	51.6%	25.0%	21.9%	28.1%	.000

their sleep quality as fairly bad or very bad and 912 (32.1%) in T2. Table 1 illustrates demographic differences between both stages.

The prevalence of moderate/severe depression increased from 24.3% in T1 to 47.8% in T2 (23.5% of difference; p: 0.000), as did the average score of depression arising from PHQ-9, which grew from 6.09 in T1 to 9.21 in T2 (difference of average depression score: 3.12; p: 0.000). This suggests a wide extension and deepening of the problem over time during the quarantine in the Argentine population. All the variables studied (gender, age, living with family members, partner or children, non-university studies, smokers, health workers and sleep disorders: inability to fall asleep, waking up at night or early, sleeping less than 7 hours and poor sleep quality), showed a significant increase in less than 2 months between both stages of the study. Table 2 illustrates the values of the increase.

Demographic factors, concerns and risk of depression

Table 3 shows the OR values in both study stages. It can be seen that the significant risk factors in T1 are also present in T2 (female, 18–27 years of age, smoker, having sleep disorders such as incapacity to fall asleep within 30 minutes, waking up at night or very early in the morning and bad sleep quality). Being between 28 and 39 years old is no longer a significant risk factor in T2, whereas the education level (primary or secondary school) becomes a significant risk factor only in T2, with OR: 1.89 (1.39–2.55; p: 0.000).

When participants were asked about the concerns related to depression (Table 3), fear of getting sick was not a factor linked to depression: OR: 0.73 CI: 0.61–0.87 p: 0.001. Nevertheless, the concern about a family member getting sick was more related to depression: OR: 1.28 CI: 1.04–1.58 p: 0.016. Unemployed people were at a significantly higher risk of depression (Ref: workers), with a OR: 2.99 (CI: 2.55–3.52); p: 0.000. Undoubtedly, concerns about the economic and employment situation had a high

impact on the risk of depression. Participants who showed moderate concern (5–7 in the Likert scale) when asked 'How much you worry about job changes during quarantine?' were at high risk for depression (OR: 1.28 CI: 1.03–1.59 p: 0.02). Nevertheless, the risk was significantly increased in participants who showed maximum concern (8–10 in the Likert scale): OR: 2.24 CI: 1.79–2.81 p: 0.000. Respondents who expressed concerned about running out of money were also at a significant risk for depression: OR: 1.43 CI: 1.20–1.77 p: 0.000.

Discussion

In the second stage of our study (T2) we have shown a significant increase in the prevalence and average score of depression in Argentine population in less than 2 months of difference with the first stage. The persistence of the same risk factors found in T1 and that are repeated in T2 (18–27 years of age, female sex, smoker and having sleep disorders and educational level) suggests that special attention should be paid to people at risk since due to the worsening of the problem.

When risk factors associated with depression were analysed, it was found that economic, labour and social factors were more related to depression compared to the concern about getting sick with COVID-19. Unemployed participants, who feel more worried about job changes and who are at risk (or at least concerned) of running out of money to meet their usual expenses, are the most susceptible to depression. The concern about a family member getting sick outweighs the concern about getting oneself sick from COVID-19. The low importance attached by the population to getting sick may contribute to less health care. The scarce concern shown by young people (the majority of our study group) because they are known to be less vulnerable to mortality from COVID-19 and the greater concern about the personal and global economic situation has been highlighted in other publications (Mc Kee & Stuckler, 2020; Sanchez et al., 2020)

Table 3. Association between socio-demographic variables and concerns for moderate/severe depression during quarantine by COVID-19 in Argentine population in T1 (*n*: 1985) and T2 (*n*: 2839). Concern about work changes (1): moderate concern and (2): maximum concern.

Variables	Depression					
	T1			T2		
	OR	95% CI	*p*	OR	95% CI	*p*
Female sex (Ref. male sex)	**1.66**	**1.23–2.24**	**.001**	**2.02**	**1.64–2.48**	**.000**
18–27 years of age (Ref. 65 years or over)	**12.97**	**3.03–55.45**	**.001**	**9.16**	**1.14–73.22**	**.037**
28–39 years of age (Ref. 65 years or over)	**4.85**	**1.12–20.95**	**.034**	5.50	0.69–43.79	.107
40–64 years of age (Ref. 65 years or over)	2.96	0.69–12.73	.144	3.06	0.38–24.37	.289
Health worker (Ref. non-health worker)	0.83	0.58–1.20	.344	0.63	0.39–1.01	.05
Living with others (Ref. living alone)	0.74	0.50–1.09	.129	1.09	0.79–1.50	.584
Smoker (Ref. non-smoker)	**1.73**	**1.30–2.29**	**.000**	**1.31**	**1.04–1.65**	**.018**
Inability to get to sleep within 30 minutes (Ref. no)	**2.33**	**1.79–3.04**	**.000**	**1.76**	**1.46–2.12**	**.000**
Waking up in the middle of the night (Ref. no)	**1.90**	**1.46–2.49**	**.000**	**1.67**	**1.39–2.06**	**.000**
Bad sleep quality (Ref. good)	**2.66**	**2.04–3.47**	**.000**	**4.11**	**3.35–5.03**	**.000**
Size of dwelling (Ref. big)	1.08	0.66–1.77	.747	–	**–**	–
Level of education (Ref. University)	1.03	0.79–1.34	.808	**1.89**	**1.39–2.55**	**.000**
Duration of sleep (Ref. 7 hours or more)	0.77	0.59–1.01	.064	0.84	0.69–1.02	.081
Getting sick	–	–	–	**0.73**	**0.61–0.87**	**.001**
A family member getting sick	–	–	–	**1.28**	**1.04–1.58**	**.016**
Concern about work changes (1)	–	–	–	**1.28**	**1.03–1.59**	**.02**
Concern about work changes (2)	–	–	–	**2.24**	**1.79–2.81**	**.000**
Running out of money	–	–	–	**1.43**	**1.20–1.71**	**.000**
Employment situation (unemployment)	–	–	–	**2.99**	**2.55–3.52**	**.000**

The text in bold indicates the significance of the results.

The few existing longitudinal studies reveal varied and discordant information regarding changes in prevalence over time. In a cohort study, Pierce et al. (2020) showed a significant increase in mental distress in the English population from 2018 to the present. A similar increase in depression was evident in a longitudinal study conducted in the US, with a marked impact on the young population (Daly et al., 2020). The same negative impact was also demonstrated in Chinese students (Li et al., 2020). However, in the general Chinese population, this impact was reduced over time, as demonstrated by Wang et al. (2020) and Ren et al. (2020). The quarantine had a limited duration in China and the reported numbers of positive cases and deaths declined rapidly, with a return to pre-pandemic living conditions in a relatively short time.

In our country, the only recently published longitudinal study (Canet-Juric et al., 2020) showed a slight increase in the prevalence of depression, while anxiety and positive and negative affect values decreased. This study was carried out 2 days after the beginning of the quarantine and was repeated 2 weeks later, so it is likely that the time between both stages was insufficient to see great variations.

In Argentina the quarantine was extended indefinitely. At the end of the second stage of this study, almost 3 months had passed since the beginning of the quarantine and at the time of writing this article, more than 7 months. There are no records in the history of modern medicine of a country subjected to such extended quarantine.

Our study has the following limitations. Firstly, we employed in both stages a snowball recruitment method through social networks, which may generate potential biases, since it is not possible to know the psychological state of the non-surveyed. Due to the operational conditions imposed by the pandemic, such as social isolation, it is impossible to know the psychological impact on those who voluntarily decided not to participate in the study, either in the first or in the second stage. These operational limitations, which can seriously affect the study result, are common to all epidemiological studies that have been carried out during the pandemic using this methodology.

Secondly, we compared two cross-sectional data sources. Since only 43% of the respondents who participated in T1 did so in T2, we were not able to survey the same individuals over time, which did not allow us to draw exact conclusions about the evolution of mental health in the same people. The low participation of the same people in the second stage is a drawback that is also found in previous major longitudinal studies. The study made by Wang (China) (Wang et al., 2020) only achieved 27.5% participation in the second stage, and the study by Pierce (UK) (Pierce et al., 2020) achieved 41.2% participation in both

stages. The difference in prevalence of depression between the stages could be partly explained by differences in demographic characteristics, recruitment and sample distribution, although we used identical outcome assessment techniques to allow comparison between the two groups. And finally, the number of people over 65 who participated is lower than the younger ones, probably due to the need to use technology and social networks. Nonetheless, this particularity has been observed in most of the surveys that have been carried out to determine psychological impact on different populations.

In conclusion, although it is not possible to generalize conclusions, it is possible to hypothesize – given the high number of participants – that the extended quarantine causes, in a country with a history of repeated economic crises, a very high emotional impact. The link between economic concerns and the risk of depression is high and it is a red flag that public health authorities must take very much into account in order to take urgent action to mitigate this impact that may prolong in time.

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