Efectos Iniciales en la Salud Mental por la Pandemia de Covid-19 en algunas Provincias de Ecuador

The Initial Mental Health Effects of the Covid-19 Pandemic Across Some Ecuadorian Provinces

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INFORMACIÓN DEL ARTÍCULO
Fecha de recepción: mayo 27, 2020.
Fecha de aceptación: junio 26, 2020.

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Resumen

El 11 de marzo, Ecuador declaró estado de emergencia por la epidemia de Covid-19. Esto condujo a medidas públicas sin precedentes para combatir la propagación de Covid-19, incluido el aislamiento físico. Como el evento es reciente, existe una investigación limitada sobre el impacto psicológico para el público en general durante el pico de la epidemia. El objetivo de este estudio es establecer la prevalencia de los síntomas informados de estrés, ansiedad y depresión, e identificar los factores de riesgo que contribuyen a la angustia psicológica en la población de algunas provincias de Ecuador en relación con la epidemia de Covid-19. Esto se realizó mediante la aplicación de una encuesta que incluye variables sociodemográficas y la prueba de escala DASS-21 a 789 personas. Los resultados indican que un número preocupante de personas informó niveles severos o extremadamente severos de depresión (10.3%), ansiedad (19.4%) y estrés (13.5%).

Palabras Clave:
Depresión, ansiedad, estrés, impacto psicológico, Covid-19, pandemia.
Clasificación JEL: I1.

Abstract

On March 11, Ecuador declared a state of emergency over the Covid-19 pandemic. This led to unprecedented public measures to combat the spread of Covid-19 taken, including physical isolation. The psychological consequences in the short and medium term are not yet fully known. As the event is recent, there is limited research on the psychological impact to the general public during the peak of the pandemic. The aim of this study is to establish the prevalence of reported symptoms of stress, anxiety and depression, and identify risk factors contributing to psychological distress in a number of provinces in Ecuador with relation to the Covid-19 pandemic. This was done by applying a survey, including socio-demographic variables and the DASS-21 scale test, to 789 people. The results indicate that a concerning number of people reported severe or extremely severe levels of depression (10.3%), anxiety (19.4%) and stress (13.5%).

Keywords:
Depression, anxiety, stress, Psychological impact, Covid-19, pandemic.
JEL Classification: I1.

CITACIÓN: Tusev, A., Tonon, L. & Capella, L. (2020). Efectos Iniciales en la Salud Mental por la Pandemia de Covid-19 en algunas Provincias de Ecuador Investigatio, 15, 11–22. doi:10.31095/ investigatio.2020.15.2

ENLACE DOI:
http://dx.doi.org/10.31095/investigatio.2020.15.2

ISSN: 1390 - 6399 • ISSN-e: 2602 - 8336

Introduction

The Covid-19 virus was declared a public health emergency of international concern on January 30 by the World Health Organisation (WHO) (Chen et al. 2020a). On March 11, Ecuador declared a state of emergency (Ecuadorian Ministry of Public Health, 2020). This led to a suspension of all non-essential business operations, all schools were closed, national borders were shut down, and residents across the country were ordered to remain in their homes for an indefinite period (Ecuadorian Ministry of Public Health, 2020). To date (June 16, 2020), Ecuador has some of the highest Covid-19 related deaths reported in Latin American (WHO, 2020), most of which come from the province of Guayas.

Facts about the transmission, behaviour, clinical manifestation, and outcomes from the virus remain unclear (Moazzen et al., 2020). Since the outbreaks of the severe acute respiratory syndrome (SARS) in 2002 and the Middle East respiratory syndrome (MERS) in 2012, the possibility of Covid transmission from animals to humans was confirmed (Chen et al., 2020b). Covid-19 may be spread by asymptomatic cases (Ryu & Chun, 2020; Rothe et al., 2020). The most severe cases seem to occur in elderly populations with pre-existing conditions (Chen et al., 2020a). Also, severe disease onset might result in death due to progressive respiratory failure (Xu, et al., 2020). However, at present, a definitive estimation of the case fatality rate may be irresponsible as much remains unknown (Battegay et al., 2020). Some studies have estimated the death rate below 0.6% (Nishiura et al., 2020).

Pearlin (1980) argued that unpredictable or unexpected negative life events have greater negative psychological impacts. The lockdown requires most people to stay at home, and puts them in a position of physical isolation. This is likely to lead to some people becoming overwhelmed by anxiety, stress and depression (Droit-Volet, et al., 2020; Qui et al., 2020. In addition, the mental health impact in Ecuador is especially pertinent given that Ecuador has received great media attention. For example, The New York Times reported that in Ecuador there have been "… bodies abandoned on sidewalks, slumped in wheelchairs, packed into cardboard coffins and stacked by the hundreds in morgues" (Cabrera & Kurmanaev, 2020, para. 1).

Interventions in disaster situations are inadequate if mental health issues are not addressed. Currently, there is little published on the psychological impact and mental health of the general public during the peak of the COVID-19 pandemic in Ecuador. However, there are recent psychological impact studies from China (Wang et al., 2020a; Wang et al., 2020b), which are further discussed in the discussion section of the study. The depression anxiety stress scale 21 (DASS-21) is a well-established instrument for measuring depression, anxiety, and stress across cultures (Oei, Sawang & Mukhtar, 2013).

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ISSN: 1390 - 6399 • ISSN-e: 2602 - 8336

This study aims to establish the prevalence of symptoms of stress, anxiety and depression, and identify risk and protective factors contributing to psychological distress in Ecuador. This was done by applying the DASS-21 scale to 789 people, with a number of socio-demographic variables being collected as well. The results contribute to knowledge about Covid-19 and the psychological impact it is having on the population. This data may assist government agencies and healthcare professionals to better understand the psychological impact of the outbreak in Ecuador.

Methodology

A cross sectional study was undertaken in Ecuador regarding the initial psychological response to the Covid-19 pandemic and related events. A quantitative survey was distributed across the country to anonymous recipients. The method used was snowball sampling starting with university students and professors, as in Wang et al. (2020a). The questionnaire was distributed online via the QuestionPro format. The survey was distributed in the local language, Spanish (Báguena et al., 2001). Participants were invited to participate voluntarily. The questionnaire was started on March 31 and ended on April 7, 2020, resulting in 789 completed surveys from across a number of provinces.

The main psychological component of the instrument was the 21 item depression, anxiety and stress scale (DASS-21). The socio-demographic items included gender, age, education, residential location in the past seven days, marital status, employment status, parental status, household size, socio-economic level (Adler & Epel, 2000), and affiliation status with the national social security system. This is similar to what was done by Wang et al. (2020a), Rubin et al., (2010), and Leung et al. (2009), which looked at the psychological impact on populations during epidemics (Covid-19, SARS and Swine Flu, respectively).

Similar to Wang et al. (2020a), the survey also acquired information related to Covid-19. This included the level of physical symptoms, how informed people were regarding the coronavirus, and how much additional information they would like regarding Covid-19. Furthermore, respondents were asked to rate their levels of trust in various media sources regarding coronavirus, changes in their monthly income, their contact history with people suspected or confirmed to have the virus, their probability of contracting the virus, their probability of surviving the disease, their prevention habits, and whether the coronavirus response had been overblown or not.

Finally, the mental health status of respondents was measured by employing the DASS scale. DASS-21 was also used by Wang et al. (2020a) during Covid-19, and McAlonan et al. (2007) regarding the SARS outbreak in Hong Kong. The Spanish version of DASS-21 was tested on 15 native Ecuadorians for cultural relevance and clarity, and wielded no

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issues. The Spanish version of DASS-21 has proven to be reliable on Spanish and Hispanic populations before (Daza et al., 2002; Ruiz et al., 2017). Furthermore, the scale was deemed reliable in our population with Cronbach's Alpha scores of 0.849 for stress, 0.845 for anxiety and 0.851 for depression subscale items. A confirmatory factor analysis was also carried out, from a correlational point of view. The proposed model adjusts optimally to explain and measure each of the dimensions of DASS-21, but does not meet the goodness of fit parameters. The DASS-21 scale was applied in accordance with the recommendations from Lovibond & Lovibond (1995).

Regarding the results, descriptive statistics were used to detail the socio-demographic characteristics, credibility of government entities and the media, and variables related to COVID-19. Similarly, in the DASS-21 scale and in each subscale, the scores were expressed as means and standard deviation. Additionally, linear regressions were used to calculate univariate associations between the DASS-21 subscale scores and the socio-demographic variables, media credibility and COVID-19 items. In all the models constructed, the dependent variables are the scores of the DASS-21 sub-scales of depression, anxiety and stress. The independent variables include the socioeconomic characteristics, the credibility of media sources, and the variables related to COVID-19. All independent variables are dichotomous. Finally, the tests were 2-tailed with a significance level of $p < 0.05$, using IBM statistical package for the social sciences (SPSS) 21.0.

Resultados

Tables 1, 2 and 3 show the results of the variables that were statistically significant at 1%, 5% and 10%.

Geographic location. At the time of carrying out the survey, most of the respondents, in the last 7 days, had resided in the province of Guayas (49.30%); followed by Azuay (19.90%), Pichincha (14.20%), El Oro (4.82%) and Manabí (3.42%). The rest of the respondents were in other provinces (8.37%).

Socio-demographic variables. In Table 1 the socio-demographic characteristics are presented. In summary, more females were represented. The most represented females surveyed were from 21 to 30 years old, single, with a household composed of between 3 and 5 people, childless, students and with a higher education level. The highest proportion of women had a full-time job and the main wage earner in their home was affiliated with IESS. Likewise, the majority of women surveyed lived in households with a medium-high socio-economic level. The most represented male respondents were from 21 to 30 years old, single, with a household composed of 3 to 5 people, without children, students and with a high school education level. Likewise, most of the surveyed males had a full-time job and the main wage earner in their home

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was affiliated with IESS. Similarly, most of the surveyed men lived in households with a medium-high socio-economic level.

Depression, Anxiety and Stress Sub-scales. The DASS scale presented an average value of 28.9 with a standard deviation (SD = 25.3). With respect to each of the subscales, there is an average value of 8.9 (SD = 8.8) in depression; 7.6 (SD = 8.7) in anxiety; and 12.3 (SD = 9.8) in stress. In the depression subscale 61.0% had a normal score, 13.6% had mild depression, 14.9% had moderate depression, 4.4% experienced severe depression and 5.8% recorded extremely severe depression. In the anxiety subscale 62.1% had a normal score, 5.9% had mild anxiety, 12.5% had moderate anxiety, 7.7% recorded severe depression and 11.6% recorded extremely severe anxiety. In the stress subscale 67.3% presented a normal score, 9.2% had mild stress, 9.8% had moderate stress, 10.0% experienced severe stress and 3.5% recorded extremely severe stress.

Statistical Relationships and Socio-Demographic Status (see Table 1 for results)

Gender. Male gender was significantly associated with lower scores on the DASS stress, anxiety and depression subscales. In general, men were seen as less likely to suffer from these disorders.

Age. For the stress subscale, people aged between 21 to 30 years old and between 31 to 40 years old were associated with significantly higher scores on the DASS stress subscale.

For the DASS anxiety subscale, people aged 21 to 30, 31 to 40 and 41 to 50 were associated with significantly higher anxiety subscale scores. In the depression subscale, people aged 21 to 30 were associated with significantly higher depression scores.

Household Size. Living in a household of 2 people and between 3 to 5 people was associated with significantly lower scores on the DASS depression subscale.

Maternity or Paternity. Being a parent was associated with significantly lower levels on the DASS depression subscale.

Labour Status. All work statuses were associated with significantly higher scores on the DASS stress subscale. Regarding the DASS anxiety subscale, full time work and part time work were associated with significantly higher scores. Regarding the DASS depression subscale, part-time work, casual work and not working were associated with significantly higher scores.

Socio-economic Level. Having a lower socio-economic level was associated with a significantly higher level of anxiety.

No Significant Relationships. The other socio-demographic variables including marital status, occupation, education level and affiliation to IESS were not significantly associated with the

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ISSN: 1390 - 6399 • ISSN-e: 2602 - 8336

Table 1.
Socio-demographic Statistical Analysis

Variables		Stress	Anxiety B (IC)	Depression
Gender				
Male	259 (32,83%)	-0,15*** (-0,22 to -0,08)	-0,15*** (-0,22 to -0,08)	-0,09*** (-0,16 to -0,02)
Female	530 (67,17%)		Reference	
Age				
1990-1999 (21-30)	294 (37,26%)	0,28*** (0,10 to 0,46)	0,25*** (0,07 to 0,44)	0,24** (0,05 to 0,42)
1980-1989 (31-40)	194 (24,59%)	0,23*** (0,06 to 0,39)	0,23*** (0,06 to 0,39)	0,11 (-0,06 to 0,27)
1970-1979 (41-50)	116 (14,70%)	0,14* (-0,01 to 0,28)	0,17** (0,02 to 0,31)	0,11 (-0,03 to 0,25)
1960-1969 (51-60)	53 (6,72%)	0,08 (-0,04 to 0,19)	0,10* (-0,01 to 0,21)	0,01 (-0,10 to 0,12)
1950-1959 (61-70)	29 (3,68%)		Reference	
Family Size				
Six people or more	124 (15,72%)	-0,05 (-0,20 to 0,09)	0,00 (-0,15 to 0,15)	-0,14* (-0,29 to 0,00)
Three to five people	505 (64,01%)	-0,11 (-0,29 to 0,06)	-0,06 (-0,24 to 0,11)	-0,18** (-0,36 to -0,01)
Two people	130 (16,48%)	-0,13* (-0,28 to 0,02)	-0,08 (-0,23 to 0,07)	-0,20*** (-0,34 to -0,05)
One person	30 (3,80%)		Reference	
Maternity / Paternity				
Yes	307 (38,91%)	-0,02 (-0,09 to 0,05)	-0,01 (-0,08 to 0,06)	-0,08** (-0,15 to -0,01)
No	482 (61,09%)		Reference	
State of Employment				
Full-time work	285 (36,12%)	0,30*** (0,09 to 0,52)	0,22** (0,01 to 0,43)	0,20* (-0,01 to 0,41)
Part-time work	84 (10,65%)	0,21*** (0,07 to 0,36)	0,17** (0,02 to 0,31)	0,16** (0,01 to 0,31)
Casual work	55 (6,97%)	0,16** (0,04 to 0,29)	0,10 (-0,03 to 0,23)	0,15** (0,02 to 0,27)
Own business	99 (12,55%)	0,16** (0,01 to 0,32)	0,08 (-0,07 to 0,24)	0,07 (-0,08 to 0,23)
Other	21 (2,66%)		Reference	

Note: * p < 0.10; ** p < 0.05; *** p < 0.01.

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scores of the DASS subscales.

Confidence in Sources of Information about Covid-19. As stated in Table 2, the majority of respondents had greater confidence in information about Covid-19 from traditional media sources, followed by information from local/provincial government sources, the central government, and the least trust was with social media sources. Neutral trust level responses ranged between 32% and 36% for all four information sources.

Traditional Media (television, radio, newspapers). 35.23% of the respondents stated that they trust information provided by traditional news media. Trust in traditional media communications was associated with significantly lower scores on the anxiety and depression subscales.

Local/Provincial Government. 35.23% of those surveyed stated that they do not trust information provided by local/provincial governments. Believing that local government communications are generally true was associated with significantly lower scores on the anxiety and depression subscales.

Central Government. 40.94% of the respondents stated that they do not trust information provided by the central government. Respondents that did not trust information from the central government were associated with significantly higher scores on the stress and depression subscales; on the other hand, respondents with higher levels of trust in central government information were associated with significantly lower scores on the anxiety and depression subscales.

Social Media. 54.50% of the respondents stated that information provided by different social media networks is not trustworthy. Higher levels of trust in news by social media channels was associated with significantly lower scores on the depression subscale.

Variables Related to COVID-19. A number of Covid-19 related independent variables were associated with DASS sub-scale scores, which are discussed below in detail and represented in Table 3.

Household Income Changes. 32.57% of the respondents stated that their monthly household income has been negatively impacted to a high degree in the past month. People that experienced a higher income decrease were associated with significantly higher scores on the stress and anxiety subscales.

Coronavirus Symptoms. The majority of people surveyed expressed that they had no symptoms associated with coronavirus. Experiencing very minor symptoms, minor symptoms and moderate symptoms were associated with significantly higher scores on the DASS stress anxiety and depression subscales.

Knowledge about Coronavirus. Most respondents stated that they are moderately to highly informed about Covid-19. There are no significant associations with either of the three DAS subscales.

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Table 2.
Confidence in Sources of Information Related to Covid-19

Variables		Stress	Anxiety	Depression
			B (IC)	
Central government				
It's never true	102 (12,93%)	0,10** (0,02 to 0,17)	0,10*** (0,03 to 0,18)	0,05 (-0,03 to 0,13)
Rarely true	221 (28,01%)	0,06 (-0,02 to 0,14)	0,04 (-0,04 to 0,12)	0,04 (-0,04 to 0,12)
Generally true	172 (21,80%)	-0,04 (-0,11 to 0,04)	-0,08** (-0,16 to -0,01)	-0,08** (-0,16 to -0,01)
Always true	14 (1,77%)	0,03 (-0,04 to 0,10)	0,02 (-0,05 to 0,09)	0,03 (-0,04 to 0,10)
Neutral	280 (35,49%)		Reference	
Social Media				
It's never true	51 (6,46%)	-0,05 (-0,12 to 0,03)	-0,01 (-0,08 to 0,06)	-0,04 (-0,12 to 0,03)
Rarely true	379 (48,04%)	-0,01 (-0,09 to 0,06)	-0,02 (-0,10 to 0,06)	-0,03 (-0,11 to 0,05)
Generally true	94 (11,91%)	-0,05 (-0,12 to 0,03)	-0,03 (-0,10 to 0,05)	-0,08** (-0,16 to -0,01)
Always true	4 (0,51%)	0,04 (-0,03 to 0,11)	0,02 (-0,05 to 0,10)	0,00 (-0,07 to 0,07)
Neutral	261 (33,08%)		Reference	
Local government				
It's never true	57 (7,22%)	0,03 (-0,04 to 0,11)	0,07* (-0,01 to 0,14)	0,00 (-0,07 to 0,08)
Rarely true	221 (28,01%)	-0,01 (-0,09 to 0,07)	0,03 (-0,05 to 0,11)	-0,03 (-0,11 to 0,05)
Generally true	204 (25,86%)	-0,07* (-0,15 to 0,01)	-0,09** (-0,17 to -0,02)	-0,10** (-0,17 to -0,02)
Always true	16 (2,03%)	-0,04 (-0,11 to 0,03)	-0,06* (-0,13 to 0,01)	-0,04 (-0,11 to 0,03)
Neutral	291 (36,88%)		Reference	
Traditional Media				
It's never true	32 (4,06%)	-0,01 (-0,08 to 0,06)	0,00 (-0,07 to 0,07)	-0,04 (-0,11 to 0,04)
Neutral	280 (35,49%)		Reference	

Note: * p < 0.10; ** p < 0.05; *** p < 0.01.

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Coronavirus and the Need for Additional Information. 38.53% of the respondents stated that they need a moderate amount of additional information. There are no significant associations with either of the three DAS subscales.

Contact with People Suspected or Confirmed to Have Coronavirus (last 14 days). Of the total sample, 69.07% of the respondents expressed that they have not had contact with people suspected of or confirmed to have coronavirus. Having had contact with people suspected or confirmed to have COVID-19 was associated with significantly higher scores on all three DASS subscales, while not having had contact was associated with significantly lower scores on all three DASS subscales.

Preventative Measures. 93.28% of the respondents expressed that they often or always took measures against the coronavirus. There are no significant associations with either of the three DAS subscales.

Probability of Contracting Coronavirus. Most respondents stated that they believe they are unlikely to contract coronavirus. People that believe they have a moderate, high or an extremely high chance to contract coronavirus were associated with significantly higher scores on the DASS stress and anxiety subscales. People that believe they have a high or extremely high chance to contract coronavirus were also associated with significantly higher scores on the DASS depression subscale.

Probability of Surviving the Coronavirus in Case of Infection. The majority of the respondents stated that they were very likely and extremely likely to survive the Covid-19. People that believe they have a high or extremely high probability of surviving the coronavirus were associated with significantly lower scores on the DASS anxiety subscale.

Severity of the Covid-19 Pandemic. Most people stated that they do not feel that too much unnecessary concern has been raised about the coronavirus pandemic. People that stated too much unnecessary concern has been raised about the coronavirus pandemic were associated with a significantly higher DASS anxiety subscale score.

Discussion

There are limited studies of this nature on comparable populations, including culturally similar populations. However, there at least one similar study has been completed on the Chinese population. Comparing results in China with those in Ecuador is limited for cross-cultural and other localised reasons such as the number of cases and related deaths; however, under such circumstances a comparison may serve to offer some indication of the severity of DAS levels in Ecuador. For instance, in China there were far lower levels of DAS reported in the initial stage of the Covid-19 pandemic (Wang et al., 2020a). The Ecuadorian sample reported significantly higher DASS scores for severe and extremely severe anxiety, stress and depression subscales (see Table 4). We know that the Chinese people have

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Table 3.
Covid-19 Related Statistical Analysis

Variables		Stress	Anxiety	Depression
			B (IC)	
Change in Income				
Much more	43 (5,45%)	0,09** (0,00 to 0,19)	0,11** (0,02 to 0,21)	0,07 (-0,03 to 0,16)
I don't know	45 (5,70%)		Reference	
Symptoms of COVID				
Yes, very low	144 (18,25%)	0,18*** (0,11 to 0,25)	0,21*** (0,14 to 0,28)	0,15*** (0,08 to 0,22)
Yes, low	54 (6,84%)	0,16*** (0,09 to 0,23)	0,17*** (0,10 to 0,24)	0,09*** (0,02 to 0,16)
Yes, moderate	57 (7,22%)	0,13*** (0,06 to 0,20)	0,17*** (0,10 to 0,23)	0,12*** (0,05 to 0,19)
Yes, high	10 (1,27%)	0,05 (-0,01 to 0,12)	0,12*** (0,06 to 0,19)	0,07* (0,00 to 0,14)
No	523 (66,29%)		Reference	
Probability of contracting Covid-19				
Moderately likely	202 (25,60%)	0,17*** (0,07 to 0,27)	0,10** (0,00 to 0,21)	0,06 (-0,05 to 0,16)
Very likely	44 (5,58%)	0,13*** (0,05 to 0,21)	0,13*** (0,05 to 0,21)	0,15*** (0,07 to 0,23)
Extremely likely	10 (1,27%)	0,18*** (0,11 to 0,25)	0,16*** (0,09 to 0,23)	0,12*** (0,05 to 0,19)
Not Likely	103 (13,05%)		Reference	
Chance of survival				
Very likely	339 (42,97%)	-0,17 (-0,54 to 0,20)	-0,39** (-0,76 to -0,02)	-0,13 (-0,49 to 0,24)
Extremely likely	109 (13,81%)	-0,17 (-0,43 to 0,10)	-0,27** (-0,54 to -0,01)	-0,14 (-0,40 to 0,12)
Not Likely	7 (0,89%)		Reference	
Level of reaction is overblown				
Yes	264 (33,46%)	0,02 (-0,05 to 0,09)	0,08** (0,01 to 0,15)	0,04 (-0,03 to 0,11)
No	525 (66,54%)			

Note: * p < 0.10; ** p < 0.05; *** p < 0.01.

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ISSN: 1390 - 6399 • ISSN-e: 2602 - 8336

been through similar events before, such as the 2003 SARS-CoV epidemic. In contrast, this is the first pandemic the Ecuadorian population has faced in modern times. Future comparative studies are welcome to determine the relative severity of the results in the Ecuadorian population, especially with more closely related cultural populations.

Table 4.
DAS Subscale Comparisons for Extreme and Severely Extreme Scores Between Ecuador and China

	Ecuador	China
DASS average	28,96	20,16
Stress	13,60%	2,60%
Anxiety	19,40%	8,20%
Depression	10,30%	4,30%

Source: China data from Wang et al. (2020a).

Gender seems to play some role in the way distress is experienced. Similarly to studies by Wang et al., (2020a) and Qui et al. (2020), our study found that females showed significantly higher DAS subscale scores than males. This is consistent with literature which stresses how this trend results from structurally and culturally constructed gender roles that shape the reporting of symptoms (Afifi, 2007; Napier et al., 2014). In addition, domestic violence with females has also been seen as a risk during home confinement (Van Bavel et al., 2020; Alfifi, 2007).

Additional categories associated with SEL, such as education status and work status have some bearing on mental health impact. Studies have found that uneducated status had a significantly higher depression subscale score (Wang et al. 2020a); people with higher education tend to show more distress (Qui et al., 2020); and student status is significantly associated with higher stress and anxiety subscale scores compared to employed status (Wang et al., 2020a). In our study there was no significant relationship with education level and student status and DAS subscale scores. As for work status, our findings suggest that it does impact DAS outcomes. People that experienced a higher income decrease were associated with significantly higher scores on the stress and anxiety subscales; this is consistent with literature in social psychology (Garrido & Álvaro, 2018). Finally, in Ecuador lower SES was associated with a significantly higher level of anxiety. This is consistent with the role of economic inequality in health outcomes (Marmot, 2020; Breilh, 2008).

Regarding age groups and DAS scores, Wang et al. (2020a) concluded that age was not significantly related to any of the DAS subscales. Whereas, our results point to mixed results with the DAS subscales and age. Qui et al. (2020) found that adults aged between 18 and 30, and those aged 60 and above, reported higher distress levels. Our survey did not include children. Nevertheless, studies have suggested that children and adolescents in quarantine can be particularly affected by stressors inherent to the pandemic (Sprang and Silman, 2013; Wang et al, 2020b). The elderly may be even more vulnerable, requiring similarly responsive interventions (Qui et al., 2020).

Addressing the role family plays is important to our findings. Wang et al (2020a) found no correlation between DAS scores and parental status, marital status or household size. Similarly, in Ecuador there was no significant relationship between marital status and

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DAS scores; however, our study did find significantly lower depression subscale scores for people that were living with 2 to 5 people, and were a parent. This is consistent with other literature (Cohen, 2004), and highlights the potential positive role of family in the mitigation of distress.

Another important factor to mental health implications and Covid-19 like events is the role of information. Misinformation can have negative psychological consequences during a pandemic response, creating mistrust, and heightening confusion and fear (Von Bavel et al., 2020). Distrust in social media requires further exploration. Also, people in the sample that held higher levels of trust in information sources seemed to have significantly reduced psychological distress.

There are some practical suggestions for assisting the population to cope with the Covid-19 event and ongoing impacts. Professionals need to incorporate the subject´s culture in interventions (Aten, 2012; Napier et al., 2014), and remember that imported mental health discourse (Watters, 2010) can pathologise normal reactions (Frances, 2013). In any case, professional training is key to promote a reflexive, locally-responsive practice (Capella, 2019). The authors agree with Wang et al. (2020) in the need to prioritise care for vulnerable groups and the strengthening of public health.

Conclusions

The Covid-19 pandemic of 2020 has caught Ecuadorians by surprise. As a result, the mental health of people across the country was impacted. The DASS scale revealed some concerning results. Overall, a significant number of people in Ecuador reported severe or extremely severe levels of depression, anxiety and stress. Furthermore, females, people that believe they are likely to contract Covid-19, and people that believe they may have been in contact with someone with Covid-19 were associated with significantly higher scores in all three DAS subscales. The groups that were associated with significantly higher levels of stress include people that stated a higher level of loss in income, and people that did not have trust in central government announcements. Higher anxiety was found in people of low socio-economic level. Finally, higher levels of depression were associated with 21 to 30 year olds and people that had low levels of trust in the information from the central government.

This study was the first of its kind in Ecuador. The sample population is limited to a number of provinces and misses a broader national view. However, the most populous provinces were targeted. Further research is needed to better understand the impact on Ecuadorians from all provinces. Furthermore, a follow up DASS-21 scale survey at a future point in time will be useful to indicate the longer term psychological implications of the pandemic on the population.

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