

Scale of Fear of Covid-19 (Fcv-19s) in Ecuadorian Population

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Abstract:

The COVID 19 pandemic has generated a strong impact worldwide with psychological, social and economic consequences. This study consists of the validation of the COVID-19 Fear Scale (FCV-19S) in the Ecuadorian adult population, analyzing reliability, as well as the validity criteria based on its internal structure in a sample of 946 Ecuadorian adults aged 18 to 65 years and of both sexes (Males= 40.2%; Females=59.8%). In relation to reliability, the FCV-19S shows adequate values ($\alpha=0.888$; $\omega=0.890$), the confirmatory factor analysis shows adequate values in relation to the test validity criteria based on the internal structure of the FCV-19S. The present study shows that the FCV-19S is an instrument for the evaluation of the fear of COVID 19 with reliability and validity in the Ecuadorian context and at the same time generates new lines of research about its psychometric properties in relation to other variables.

Keywords: FCV-19S, fear of COVID 19, adaptation, validation, Ecuador.

1. INTRODUCTION

At the end of 2019 and beginning of the year 2020 in Wuhan, the emergence of disease due to the severe acute respiratory syndrome coronavirus type 2 or SARS is known for the first time. In January 2020, the World Health Organization (WHO) exposes COVID-19 as a public health emergency of International concern, going on to consider it as a pandemic in March of the same year (Ramírez et al., 2020).

This pandemic situation resulting from COVID 19 has had a strong impact worldwide, with considerable aspects such as the number of people killed, as well as the psychological, social and economic consequences (Furman et al., 2020).

Due to the spread of the virus worldwide, different countries opted for confinement as a means to avoid contagion, generating changes in lifestyle, in addition, the social distancing caused by this situation, as well as the large amount of news and speculation have generated permanent fear throughout the population (Ramírez et al., 2020).

In Latin America, specifically, Ecuador is one of the countries most affected by the pandemic caused by COVID-19, the first case of COVID-19 was registered on February 29, 2020 and on July 6; 53.424 cases and 8,026 deaths had already been reported (Sarasty et al., 2020). Therefore, this pandemic has caused fear and uncertainty in the population that something bad is going to happen.

Fear is considered a defense mechanism against the existence of potentially threatening events; however, this fear can become chronic or irrational, which can become a relevant aspect in the appearance and development of several psychiatric disorders (Lu et al., 2020). Anxiety and fear generated by COVID-19 impose severe difficulty on the internal capacities of the general population, resulting in problems in decision making, disruption and nervous exhaustion (Mejia et al., 2020).

As mentioned above, the effects associated with pandemic status and measures to avoid contagion have generated mental health

problems of global interest, thus creating the need for public health initiatives in different countries, for which researchers have developed, adapted and validated a scale to measure fear of COVID-19 (FCV-19S) (Ahorsu et al., 2020).

The FCV-19S Scale was developed specifically for the COVID-19, based on a literature review where they identified 30 measures of fear in different populations, going through various revisions to form a final version comprising a total of 7 items, which has a reliability of 0.90 in its original version (Ahorsu et al., 2020). The FCV-19S since its creation has already been used in different countries and languages, such as Saudi Arabia (Alyami et al., 2020), Argentina (Caycho-Rodriguez et al., 2020), Bangladesh (Sakib et al., 2020), Brazil (Cavalheiro and Sticca, 2020), Colombia (Lin et al., 2021), Korea (Han et al., 2021), Cuba (Broche-Pérez et al., 2020), Spain (Martínez-Lorca et al., 2020; Piqueras et al., 2020), United States (Perz et al., 2020), Ethiopia (Elemo et al., 2020), France (Mailliez et al., 2021), Greece (Nikopoulou et al., 2020; Tsipropoulou et al., 2020), India (Doshi et al., 2020), Indonesia (Nazari et al., 2021), Israel (Tzur Bitan et al., 2020), Italy (Soraci et al., 2020), Japan (Masuyama et al., 2020; Wakashima et al., 2020; Midorikawa et al., 2021), Malaysia (Pang et al., 2020), Mexico (García-Reyna et al., 2020), New Zealand (Winter et al., 2020), Paraguay (Barrios et al., 2021), Pakistan (Ullah et al., 2021), Peru (Huarcaya-Victoria et al., 2020), Portugal (Ribeiro et al., 2021; Magano et al., 2021), Dominican Republic (Piqueras et al., 2020), Russia (Reznik et al., 2020), Taiwan (Chang et al., 2020) and Turkey (Haktanir et al., 2020; Satıcı et al., 2020; Gozpinar et al., 2021).

In previous validation processes, in our language, in Argentina, Colombia, Mexico, Paraguay, Peru, and the Dominican Republic, the version of the scale validated in Spain has been used. In Ecuador, the literature on mental health in relation to COVID-19 is scarce for the moment,

although the literature presented worldwide indicates that Anxiety, Depression and Obsessive-Compulsive Disorder have experienced a significant increase. In our country, previous studies have been conducted in pre-professional interns of the undergraduate nursing career to evaluate the reliability and validity of the instrument, the linguistic and cultural adaptation to the Ecuadorian context (Ramírez et al., 2020). In addition, an analysis study of the fear, anxiety and depression present in health professionals of the Teófilo Dávila Hospital due to the pandemic (Ortega et al., 2021), as well as an analysis study about the psychological impact of COVID-19 in nursing interns of pre-professional practices (Mera et al., 2021). However, in relation to the pandemic condition and isolation period, the Ministry of Public Health of Ecuador (MSP) has evidenced a significant increase in psychopathology not contemplated in the DSM-V or ICD-10. This has generated difficulties for health personnel in terms of diagnosis and therefore treatment of such symptomatology.

The objective of the present study is to validate the COVID-19 Fear Scale (FCV-19S) in the Ecuadorian adult population between 18 and 65 years of age, as well as to propose to a version of the scale linguistically adapted to the Ecuadorian context, evaluating both its reliability and the validity criteria based on its internal structure.

2. METHODOLOG

Design

The present research is an instrumental design.

Participants

It includes 946 participants who have been part of the research considering the following inclusion criteria: Ecuadorians residing solely within the national territory between 18 and 65 years of age who have voluntarily accepted their participation through informed consent. Participants will

be excluded if they present any organic or psychotic pathology (Bipolar Disorder or Schizophrenia) or problems related to the consumption of psychoactive substances.

Instruments

COVID-19 Fear Scale

The Fear of COVID-19 scale (FCV19S) is a self-administered questionnaire that aims to assess the fear of COVID-19 by means of 7 items with a Likert format with 5 response possibilities that respond to the degree of agreement of the participants, showing a reliability of 0.90 in its original version (Ahorsu et al., 2020).

Personal data form

Form to obtain socio-demographic information of the participants of the present study, including: gender, sexual orientation, province, marital status and level of education.

3. PROCEDURE

The adaptation proposed by Ahorsu et al. (2020) on the FCV-19S scale was used for indicated populations. Initially, each item was read, identifying the words used and their meaning within the Spanish language and Ecuadorian culture. Secondly, three professionals (two psychologists and one literary expert) were asked to evaluate the wording and comprehension of the statements, and they concluded that the neutral wording used for each statement makes them understandable for the Ecuadorian adult population. Subsequently, it was applied to a group of 55 students, in order to observe how they respond to the FCV-19S items and recognize possible drawbacks. Each item was read, verifying the understanding of the statement and the different response alternatives, thus verifying that each participant responded to all the items. Afterwards, permission was requested from the authorities of the Catholic University of Cuenca to apply the FCV-19S scale with a total of 7 items in a Likert format with 5 response possibilities that respond to the degree of agreement of

the participants (1 = totally disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree) at the Azogues site. Facilitating access to undergraduate nursing students, each participant was given an informed consent form, which included a request to participate in the study and the objectives of the study were explained. Once the consent was obtained from the participants, the FCV-19S scale was filled out virtually. During the administration, the participants were accompanied by the researchers to resolve any doubts and solve any inconvenience by telephone call or video call.

Data Analysis

A prior verification of the database was performed in order to detect incomplete data and univariate and multivariate outliers (Tabachnick et al., 2007). In addition, the distributions were analyzed with the purpose of verifying if they conformed to the parameters of normality with these analyzed distributions met the criterion of normality. Reliability calculations were performed using Cronbach's alpha to assess internal consistency. Subsequently, a confirmatory factor analysis (CFA) (Harrington et al., 2009) was performed on the data from the Ecuadorian sample of the FCV-19 (Fear of COVID-19 Scale) to determine the validity of the factor structure that defines each of the dimensions postulated in the test. The statistical analyses were carried out with the statistical program R. Three indexes were used to evaluate the fit of the model to the data: CFI (Comparative Fix Index), RMSEA (Root Mean Square Error of Approximation) and SRMR (Standardized Root Mean Square Residual). The current standards of acceptance of the indexes were followed: values close to or above 0.95 were considered adequate for the CFI, those close to or below 0.08 for the SRMR index and those below 0.07 for the RMSEA index.

The present research was carried out in consideration of the international ethical

guidelines established for health-related research on human beings by the Council for International Organizations of Medical Sciences (CIOMS). The ethical justification for this research, related to health in human beings, lies in its social and scientific value: the perspective of generating knowledge and the necessary means to preserve and promote people's health. The research was previously validated under the Code of the Human Research Ethics Committee of the University of UTE, approved by the code: IMP-SIC-LLA-CUIO 1408 20.

4. RESULTS

Sociodemographic Characteristics

The sample of participants ($n=946$), among them, 40.2% are male, 59.8% are female. Regarding the sexual orientation variable, 96.7% of the sample defined themselves as heterosexual, 1.2% bisexual, 0.7% intergender and homosexual, 0.3% as asexual, 0.2% transsexual and 0.1% as pansexual. On the other hand, 55.4% of the participants belong to the province of Cañar, 33.9% to the province of Azuay, 1.7% from the provinces of Chimborazo and Loja, 1.1% from the provinces of

Bolívar and Guayas, 1.4% from the province of El Oro, 0.7% from the provinces of Carchi and Morona Santiago, 0.5% from the province of Zamora Chinchipe, 0.4% from the province of Pichincha, 0.3% from the provinces of Manabí, Santa Elena and Tungurahua, 0.2% from the province of Los Ríos and finally 0.1% from Galapagos. Regarding the marital status variable, 41.8% are married and single, 6.9% are divorced, 5.4% are in free union, 2.2% are separated and, lastly, 2.0% are widowed. Regarding the level of studies, 30.0% have completed the third level, 22.6% have completed high school, 19.8% have university studies, 17.2% have a fourth level, 5.9% primary studies, 3.4% have graduated from primary school and finally 1.1% have a PhD, Doctorate.

Confirmatory Factor Analysis

Table 1 shows the statistics of the model fit of the data, the same that was valid ($\chi^2=316$, $df=9$, $p= <.001$; $RMSEA=0.190$; $SRMR=0.0567$; $CFI=0.0883$; $TLI=0.804$)

Table 1. Confirmatory Factor Analysis

IFC	TLI	SRMR	RMSEA	Lower	Upper	AIC	BIC
0.883	0.804	0.0567	0.190	0.172	0.208	16400	16487
χ^2	df	p					
316	9	< .001					

Construct Validity

Table 2 shows the results of the corrected item-total correlation values of the items were significant (0.63-0.71). Likewise, the reliability of the scale was analyzed by

internal consistency analysis, the Cronbach's Alpha and McDonald's Omega value for the entire scale was ($\alpha=0.888$; $\omega=0.890$).

Table 2. Result of the analysis of the items

	mean	sd	item-rest correlation	Cronbach's α	McDonald's ω
FCV-19S 1. I am very afraid of coronavirus-19. Answer: 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4= acu...	3.07	1.31	0.636	0.877	0.881
2. I am uncomfortable thinking about coronavirus-19. Answer: 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree...	2.80	1.26	0.653	0.875	0.879
3. I feel my palms sweat when I think about coronavirus-19. Answer: 1=strongly disagree, 2=disagree, 3=not d...	1.88	1.11	0.674	0.873	0.874
4. I am afraid of losing my life to coronavirus-19. Answer: 1=strongly disagree, 2=disagree, 3=neither agree nor agree...	3.00	1.46	0.708	0.869	0.872
5. When I see new stories about coronavirus-19 on social media, I get nervous or anxious.	2.59	1.26	0.702	0.869	0.872
6. I can't sleep because I'm worried about having coronavirus19. Answer: 1=strongly disagree, 2=disagree, 3=n agree n...	1.97	1.16	0.693	0.870	0.872
7. My heart races or palpitates when I think about contracting coronavirus-19. (Answer: 1=totally in des...	2.16	1.23	0.715	0.867	0.869

5. DISCUSSION

The aim of the present study was to validate a linguistically adapted version of the COVID-19 Fear Scale (FCV-19S) in the Ecuadorian adult population between 18 and 65 years of age, as well as to study its psychometric properties. The 7 items of the adapted version are similar to those proposed in the original version (Ahorsu et al., 2020). In the Ecuadorian sample with

which we worked, adequate values have been demonstrated, in relation to its internal consistency, Cronbach's Alpha and McDonald's Omega for the entire scale was ($\alpha=0.888$; $\omega=0.890$), reaching satisfactory values, presenting concordance with previous studies in our region and in our same language: Argentina (Caycho-Rodriguez et al., 2020), Brazil (Cavaleiro and Sticca, 2020), Colombia (Lin et al.,

2021), Cuba (Broche-Pérez et al., 2020), Mexico (García-Reyna et al., 2020), Paraguay (Barrios et al., 2021), Peru (Huarcaya-Victoria et al., 2020), Dominican Republic (Piqueras et al., 2020), as well as acceptable values in relation to studies conducted in the international context Saudi Arabia (Alyami et al., 2020), Bangladesh (Sakib et al., 2020), Korea (Han et al., 2021), Spain (Martínez-Lorca et al., 2020; Piqueras et al., 2020), United States (Perz et al., 2020), Ethiopia (Elemo et al., 2020), France (Mailliez et al., 2021), Greece (Nikopoulou et al., 2020; Tsipropoulou et al., 2020), India (Doshi et al., 2020), Indonesia (Nazari et al., 2021), Israel (Tzur Bitan et al., 2020), Italy (Soraci et al., 2020), Japan (Masuyama et al., 2020; Wakashima et al., 2020; Midorikawa et al., 2021), Malaysia (Pang et al., 2020), New Zealand (Winter et al., 2020), Pakistan (Ullah et al., 2021), Portugal (Ribeiro et al., 2021; Magano et al., 2021), Russia (Reznik et al., 2020), Taiwan (Chang et al., 2020) and Turkey (Haktanir et al., 2020; Satici et al., 2020; Gozpinar et al., 2021). Likewise, good parsimony, absolute and comparative fit indices were obtained in the present study. The reliability indicators also showed adequate values. On the other hand, the corrected values of the item-total correlation were significant (0.63-0.71) with all factor loadings showing high and statistically significant values. In this sense, it is also necessary to highlight the aforementioned scores corresponding to items 4 (I am afraid of losing my life to the coronavirus-19); 5 (When I see new stories about the coronavirus-19 on social networks, I get nervous or anxious) and 7 (My heart races or palpitates when I think about contracting coronavirus-19), which are related to a physiological and emotional response, allowing to evidence the fulfillment of the purpose for which the instrument was created, since the FCV-19S is an instrument that evaluates the fear of COVID-19, which should be understood as an emotional response with a high physiological component. In the present

study, the objective of validating the fear of COVID-19 Fear Scale (FV-19S), was achieved, verifying its reliability and the fulfillment of validity criteria in its internal structure. The limitations of the present study include the absence of a previous interview and psychopathological assessment, possible biases in the responses by the participants due to associated factors such as social desirability. The present research has been carried out with a partially representative sample of the Ecuadorian population; therefore, these results should be replicated and increased with different samples of the aforementioned population. Likewise, a previous interview and psychopathological assessment may be convenient, as well as an assessment of the social desirability factor and work with specific populations.

6. CONCLUSIONS

The mental health implications generated by the fear of the coronavirus are diverse and of great relevance. In this study, the COVID-19 Fear Scale (FCV-19S) has been adapted to an Ecuadorian adult sample between 18 and 65 years of age. The questionnaire has adequate psychometric properties, both in terms of validity and reliability. Having an instrument to measure the fear of COVID-19 among Ecuadorians will allow the adequate development of psychological interventions and better performance in public health services.

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Conflict of Interest

The authors report no conflicts of interest.

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