Electronic Journal of General Medicine
2021, 18(3), em285
e-ISSN: 2516-3507
https://www.ejgm.co.uk/

Original Article

MODESTUM
OPEN ACCESS

Fear Perception of the COVID-19 Pandemic in Peru

Christian R. Mejia [1*], J. Franco Rodriguez-Alarcon [2,3], Jean J. Vera-Gonzales [4], Vania L. Ponce-Lopez [5], Scherlli E. Chamorro-Espinoza [6], Alan Quispe-Sancho [7,8], Rahi K. Marticorena-Flores [6], Elizabeth S. Varela-Villanueva [6], Paolo Pedersini [9], Marcos Roberto Tovani-Palone [10**]

[1] Universidad Continental, Lima, PERU
[2] Asociación Médica de Investigación y Servicios en Salud, Lima, PERU
[3] Facultad de Medicina Humana, Universidad Ricardo Palma, Lima, PERU
[4] Universidad Nacional Federico Villarreal, Lima, PERU
[5] Universidad Nacional de Cajamarca, Cajamarca, PERU
[6] Universidad Nacional Hermilio Valdizán, Huánuco, PERU
[7] Escuela Profesional de Medicina Humana, Universidad Nacional de San Antonio Abad del Cusco, Cusco, PERU
[8] ASOCIEMH CUSCO Asociación Científica de Estudiantes de Medicina Humana del Cusco, Universidad Nacional de San Antonio Abad del Cusco, Cusco, PERU
[9] IRCCS Fondazione Don Carlo Gnocchi, Milan, ITALY
[10] Ribeirão Preto Medical School, University of São Paulo, Ribeirão Preto, BRAZIL
***Corresponding Author:** christian.mejia.md@gmail.com
****Corresponding Author:** marcos_palone@hotmail.com

Citation: Mejia CR, Rodriguez-Alarcon JF, Vera-Gonzales JJ, Ponce-Lopez VL, Chamorro-Espinoza SE, Quispe-Sancho A, Marticorena-Flores RK, Varela-Villanueva ES, Pedersini P, Tovani-Palone MR. Fear Perception of the COVID-19 Pandemic in Peru. Electron J Gen Med. 2021;18(3):em285. https://doi.org/10.29333/ejgm/9764

ARTICLE INFO

Received: 10 Dec. 2020

Accepted: 27 Jan. 2021

ABSTRACT

Introduction: Fear is a natural response to something unknown. In the current scenario, it is important to assess it in relation to the coronavirus disease-19 (COVID-19) pandemic in Latin American countries.

Objective: To determine the fear perception according to factors associated with the COVID-19 pandemic in Peru.

Methods: An analytical cross-sectional study was conducted based on a virtual questionnaire. The main question was "how much fear people had of COVID-19?", using a scale from zero (without fear) to 10 (very fear). This scale was divided into tertiles, and the upper tertile was the reference category (compared to the middle and lower tertiles). Statistical significances between fear perception of COVID-19 and sociodemographic data were calculated.

Results: A total of 3887 participants responded the questionnaire about fear perception. In the multivariate analysis was found that women (adjusted prevalence ratio (aPR): 1.37; 95% confidence interval (CI) : 1.26-1.48; p<0.001), people aged 20-29 (aPR: 1.84; 95% CI: 1.06-1.50; p=0.005), 30-39 (aPR: 1.53; 95% CI : 1.28-1.82; p<0.001), 50-59 (aPR: 1.43; 95% CI: 1.12-1.84; p=0.005), and with 60 or more years (aPR: 1.46; 95% CI: 1.03-2.07; p=0.032), as well as respondents who had some risk for complications due to COVID-19 (aPR: 1.49; 95% CI: 1.32-1.69; p<0.001) were very afraid of the disease. On the other hand, people affiliated with evangelical religions (aPR: 0.79; 95% CI: 0.65-0.96; p=0.018), agnostics (aPR: 0.80; 95% CI: 0.68-0.94; p=0.008), atheists (aPR: 0.67; 95% CI: 0.48-0.95; p=0.024), and health professionals (aPR: 0.81; 95% CI: 0.70-0.93; p=0.003) were less afraid of COVID-19.

Conclusion: There was a notorious fear perception of the COVID-19 pandemic by the Peruvian population. In this context, the fear was associated with important variables. Thus, the provision of further emotional support services for this population should be considered in the face of the current pandemic.

Keywords: fear, perception, COVID-19, pandemic, Peru

INTRODUCTION

Coronavirus disease-19 (COVID-19) has generated a pandemic that has affected almost all countries in the world, being declared a global health emergency [1,2]. This pandemic has had a great impact on the society, as well as it has tested the capacity of the best health systems, including those of France (1st), Italy (2rd), and Spain (7th) [3]. Regarding the situation in Latin America, Brazil, Colombia, and Peru are the countries with the highest number of affected people, respectively. Peru currently ranks sixth among the countries with the largest number of confirmed cases of COVID-19 cases in the world, accounting for more than 800,000 cases of the disease and 32,000 deaths [4].

The current scenario has created several economic and political problems [5], which together with the spread of the disease may cause great fear in the population. In this context, it is worth mentioning that in the last 30 years at least 30 infectious diseases have appeared, with different etiologies and forms of transmission [6]. Among these diseases, we highlight the novel 2009 influenza A (H1N1) (2009), severe acute respiratory syndrome (SARS) (2002), and Middle East respiratory syndrome (MERS) (2012) [7]; however, the situation due to COVID-19 has been more catastrophic than in all of them [8].

The emergence of fear has been reported in serious epidemic, such as Ebola, period when the population was so anxious to the point of people accepting to use unauthorized or experimental drugs [9]. On the other hand, it is worth remembering that the same did not happen in the H1N1 post-pandemic period, in which restrictive measures were accomplished only by people with respiratory diseases or chronic diseases that affect the immune system while the rest of the population did not fully comply with these recommendations and did not even perceive risks of transmission to their family members [10].

At present, the COVID-19 emergency is leading to serious health problems, including stress, anxiety, depressive symptoms, and fear [11,12]. Mental health issue during the pandemic has been addressed by several studies with the main objective of verifying the impact on people's emotional state in order to prepare appropriate interventions [13-15]. To understand the psychological and psychiatric impacts of a pandemic, the emotions involved in it, such as fear, must be considered and observed [16]. For all these reasons, it should be important to measure the fear generated by this pandemic in the population. Therefore, the objective of this research study is to determine the fear perception according to factors associated with the COVID-19 pandemic in Peru.

METHODS

Study Design

This is an analytical and multicenter cross-sectional study conducted in 20 cities of 17 departments in Peru: Arequipa, Ayacucho, Cajamarca, Cerro de Pasco, Chiclayo, Chimbote, Cusco, Huancayo, Huánuco, Ica, Iquitos, Lima, Piura, Pucallpa, Puno, Tacna, and Trujillo. It should be noted that they correspond to the largest and most important cities and departments in the country. Thus, this investigation included a wide sample, which represents different characteristics of the Peruvian population.

Population and Sample

In this research, we include people residing in some of the cities mentioned above, who showed interest in participating in the study and who had or not comorbidities related to complications of COVID-19 (such as, being elderly, cancer patient, or with any hypertensive disease). A total of 596 participants were excluded from the study, given that they did not answer the main question (about fear perception), or they had different nationality and/or were minors.

The type of sampling was non-probabilistic aiming to maintain the homogeneity in each of the locations of the study. An initial calculation of a minimum of 2867 respondents was performed to find a minimum percentage difference of 4% (48% versus 52%), with a confidence level of 95%, power of 99%, for a single sample (depending on the chosen design).

Variables and Assessment Tools

The main variable of the study was the fear perceived by the participants related to COVID-19, which was obtained in a quantitative form, using a scale from zero (indicating "not afraid") to 10 (indicating "very afraid"). After completion of data collection, the studied population was divided into tertiles according to the obtained scores (Tertile of least fear perception - composed by people who had a score of 0-3 points in the questionnaire; Middle tertile- composed by people who had a score of 4-5 points; Tertile of highest fear perception- composed by people who had a score of 6-10 points). The variable was also dichotomized into two categories: with a lot of fear (6-10 points) or with little fear (0-5 points).

The considered sociodemographic data were gender (male or female), degree of education (up to secondary education or technical/higher education), age (18-19 years, 20-29 years, 30-39 years, 40-49 years, 50-59 years, and 60 years or older), religion (catholic, evangelical, christian, adventist, Jehovah' switness, latter-days, mormon, buddhist, other religions, agnostics, and atheists), the city of respondents (according to the cities previously mentioned), and type of respondent (without risk of complications due to COVID-19 - without comorbodities, with risk of complications due to COVID-19, healthcare staff, and healthcare staff considered at risk).

Procedures and Ethics

An electronic version of the questionnaire was sent to the participants through creation of a form using Google Drive. After that, we performed a quality control of the data and those that did not meet the selection criteria were excluded. Thereafter, the data were encoded and tabulated in a Microsoft Excel spreadsheet (Microsoft, Redmond, CA, USA). A second filtering of the information and the quality control for each study site were also performed using the spreadsheet. After that, the data was exported to the STATA version 11.1 (StataCorp, College Station, TX). Research ethics were carefully considered, and ethical approval was granted before data collection. Moreover, all respondents were previously informed about the purpose and the objectives of the research and their participation was voluntary for the study.

Data Analysis

A table of frequencies and percentages of the crossing between the three levels of fear intensity and the other variables were created. In this case, statistical significances were calculated with Chi-square test. Tables of the bivariate and multivariate models were constructed using generalized linear models, with the Poisson distribution and a logarithmic link function, and models for robust variance adjusted according to the city of respondents. Crude and adjusted prevalence ratios (aPR), 95% confidence interval (CI), and p-values (statistical significance $p < 0.05$) were calculated.

RESULTS

A total of 3887 participants were divided into tertiles according to their perceived fear. 1275 (32.8%) had little fear, 1277 (32.8%) had moderate fear, and 1335 (34.4%) a lot of fear. When these 3 groups were compared by variables, we found that there were statistically significant differences by sex ($p<0.001$), age categorized ($p<0.001$), religion ($p<0.001$), and respondent type ($p<0.001$) (**Table 1**).

In the bivariate analysis, we found that women ($p<0.001$), participants aged 20-29 (p-0.018), 30-39 ($p<0.001$), 40-49 ($p=0.018$) 50-59 ($p<0.001$), 60 years or older ($p=0.001$), and respondents with some risk for complications ($p<0.001$) were very afraid of COVID-19. In contrast, participants of the evangelical religions ($p=0.006$), agnostics ($p=0.001$), atheists ($p=0.006$), buddhists ($p=0.042$), people from other religions ($p=0.041$), and health personnel ($p=0.032$) were less afraid (**Table 2**).

Table 1. Fear perception according to socio-educational characteristics before the COVID-19 pandemic in Peru

Variables	Fear perception			p-value
	Little	Moderate	A lot	
Sex				
Male	688 (40.1%)	543 (31.7%)	484 (28.2%)	<0.001
Female	575 (26.7%)	730 (33.9%)	848 (39.4%)	
Education level				
Technical or university	1048 (32.6%)	1054 (32.8%)	1114 (34.6%)	0.867
Up to secondary level	212 (33.2%)	212 (33.2%)	214 (33.6%)	
Age categorized				
18-19 years old	202 (34.6%)	223 (38.3%)	158 (27.1%)	<0.001
20-29 years old	819 (33.4%)	805 (32.9%)	825 (33.7%)	
30-39 years old	118 (31.1%)	105 (27.7%)	156 (41.2%)	
40-49 years old	59 (29.8%)	69 (34.9%)	70 (35.3%)	
50-59 years old	37 (23.0%)	54 (33.5%)	70 (43.5%)	
60 years or older	27 (30.0%)	14 (15.6%)	49 (54.4%)	
Religion				
Catholic	741 (28.9%)	860 (33.5%)	964 (37.6%)	<0.001
Evangelist	165 (35.7%)	161 (34.9%)	136 (29.4%)	
Agnostics	154 (43.1%)	108 (30.3%)	95 (26.6%)	
Atheists	91 (48.4%)	53 (28.2%)	44 (23.4%)	
Christian	28 (38.4%)	25 (34.2%)	20 (27.4%)	
Adventist	15 (30.0%)	22 (44.0%)	13 (26.0%)	
Jehovah's witness	1 (16.7%)	1 (16.7%)	4 (66.6%)	
Latter-days	9 (37.5%)	4 (16.7%)	11 (45.8%)	
Mormon	7 (36.8%)	4 (21.1%)	8 (42.1%)	
Buddhist	6 (50.0%)	5 (41.7%)	1 (8.3%)	
Another	33 (44.0%)	20 (26.7%)	22 (29.3%)	
Type of respondent				
No risk	876 (32.5%)	898 (33.3%)	925 (34.3%)	<0.001
At risk	51 (20.1%)	65 (25.6%)	138 (54.3%)	
Healthcare personnel	324 (37.0%)	295 (33.7%)	256 (29.3%)	
More health risks	7 (41.2%)	5 (29.4%)	5 (29.4%)	

Note: p-values were obtained with Chi-square test

Table 2. Bivariate analysis of the factors associated with being very afraid of the COVID-19 pandemic in Peru

Variables	Prevalence ratio	95% Confidence intervals	p-values
Female	1.39	1.28-1.51	<0.001
Primary or secondary education	0.97	0.84-1.14	0.797
Age categorized			
18-19 years old		Comparison category	
20-29 years old	1.24	1.04-1.47	0.018
30-39 years old	1.52	1.27-1.81	<0.001
40-49 years old	1.32	1.06-1.65	0.014
50-59 years old	1.61	1.25-2.06	<0.001
60 years or older	1.98	1.98-3.01	0.001
Religion			
Catholic		Comparison category	
Evangelist	0.77	0.64-0.93	0.006
Agnostics	0.71	0.58-0.87	0.001
Atheists	0.62	0.44-0.88	0.006
Christian	0.74	0.49-1.10	0.138
Adventist	0.70	0.39-1.26	0.239
Jehovah's witness	1.59	0.69-3.68	0.278
Latter-days	1.22	0.82-1.80	0.327
Mormon	1.18	0.82-1.70	0.397
Buddhist	0.22	0.05-0.95	0.042
Another	0.74	0.55-0.99	0.041
Type of respondent			
No risk		Comparison category	
At risk	1.60	1.36-1.89	<0.001
Health personnel	0.85	0.74-0.99	0.032
More health risks	0.86	0.45-1.62	0.632

The dependent variable is the perceived fear of the COVID-19 pandemic. This variable was crossed with other variables using generalized linear models (with the Poisson distribution and a logarithmic link function, and models for robust variance adjusted according to the city of respondents)

Table 3. Multivariate analysis of the factors associated with being very afraid of the COVID-19 pandemic in Peru

Variables	Prevalence ratio	95% Confidence intervals	p-values
Female	1.37	1.26-1.48	<0.001
Primary or secondary education	0.96	0.83-1.09	0.492
Age categorized			
18-19 years old		Comparison category	
20-29 years old	1.26	1.06-1.50	0.008
30-39 years old	1.53	1.28-1.82	<0.001
40-49 years old	1.22	0.96-1.54	0.097
50-59 years old	1.43	1.12-1.84	0.005
60 years or older	1.46	1.03-2.07	0.032
Religion			
Catholic		Comparison category	
Evangelist	0.79	0.65-0.96	0.018
Agnostics	0.80	0.68-0.94	0.008
Atheists	0.67	0.48-0.95	0.024
Christian	0.77	0.53-1.11	0.160
Adventist	0.70	0.42-1.16	0.162
Jehovah's Witness	1.89	0.91-3.92	0.089
Latter-days	1.23	0.83-1.81	0.302
Mormon	1.19	0.87-1.64	0.283
Buddhist	0.25	0.05-1.13	0.071
Another	0.81	0.61-1.08	0.159
Type of respondent			
No risk		Comparison category	
At risk	1.49	1.32-1.69	<0.001
Healthcare personnel	0.81	0.70-0.93	0.003
More health risks	0.75	0.38-1.47	0.397

The dependent variable is the perceived fear of the COVID-19 pandemic. This variable was crossed with other variables using generalized linear models (with the Poisson distribution and a logarithmic link function, and models for robust variance adjusted according to the city of respondents)

In the multivariate analysis, we found that women (aPR: 1.37; 95% CI: 1.26-1.48; p<0.001), participants aged 20-29 (aPR: 1.26; 95% CI: 1.06-1.50; p=0.008), 30-39 (aPR: 1.53; 95% CI: 1.28-1.82; p<0.001), 50-59 years old (aPR: 1.43; 95% CI: 1.12-1.84; p=0.005), with 60 years or older (aPR: 1.46; 95% CI: 1.03-2.07; p=0.032), and respondents with some risk for complications (aPR: 1.49; 95% CI: 1.32-1.69; p<0.001) were very afraid of COVID-19. On the other hand, evangelical participants (aPR: 0.79; CI 95%: 0.65-0.96; p=0.018), agnostics (aPR: 0.80; 95% CI: 0.68-0.94; p=0.008), atheists (aPR: 0.67; 95% CI: 0.48-0.95; p=0.024), and healthcare personnel (aPR: 0.81; 95% CI: 0.70-0.93; p=0.003) were less afraid (**Table 3**).

DISCUSSION

This cross-sectional study analyzed the association between fear perception of COVID-19 and the sociodemographic data in the Peruvian population. The multivariate analysis showed that women, people aged 20-29, 30-39, 50-59 years, and respondents who had some risk for complications due to COVID-19 had much fear of the disease. On the other hand, people affiliated with evangelical religions, agnostics, atheists, and healthcare personnel had little fear.

In our study, the fact that women were the most fearful of the COVID-19 pandemic could be explained taking in account that women present greater subjective distress related to a public health crisis [17]. Furthermore, in most households, women are the ones who care most for others [18], which may become more evident in the context of the pandemic due to increasing fear. According to the Economic Commission for Latin America and the Caribbean (ECLAC), women do their housework and care for others independently of remuneration [19].

Another relevant point in the present study is that three of the older age groups had increased fear, including young adults, mature adults, and older adults compared to the group of younger participants (18-19 years). Indeed, it was found in a global research that the older the age, the greater is the risk of mortality, complications, and poor prognosis related to COVID-19, which would explain the increased fear in these age groups [20-23]. So it is important to provide emotional support to people who are older, prioritizing older adults and those with some other risk factor, whether physical or mental; because if these groups do not know how to manage their fears, they could not only have thoughts about death, but they can also perform "bad" acts out of fear [24].

We also found that catholics, evangelicals, agnostics, and atheists were less afraid of COVID-19. In this sense, it is worth noting that some religions, such as Christianity, have very dogmatic views, which associate life after death with the moral actions of human beings and the going of the soul to a place of reward or punishment [25]. A study carried out on anxiety in the face of death, concern about the time and fear associated with suffering from an illness, established that having religious beliefs and thinking about life after death generated greater anxiety [26].

Moreover, we observed that respondents with some risk for complications due to COVID-19 were more afraid in the face of government measures during the quarantine period, which coincides with what was reported in a study that included 1210 respondents from 194 cities in China. In this Chinese study was found that history of chronic diseases was significantly associated with higher scores in the Impact of Event Scale - Revised (IES-R), and in the DASS subscale regarding stress,

anxiety, and depression [17]. Another study involving older adults from Mexico, a direct association was found between presence of comorbidities (cancer, systemic arterial hypertension, diabetes, hypercholesterolemia, depression, cerebral infarction, and cardiovascular disease) and positive self-rated health, while there was indirect association between presence of comorbidities and depressive symptoms [27]. Complementary to this, the results of a research that included patients diagnosed with type 2 diabetes mellitus from the Jonuta Community Hospital, in the Tabasco state, showed that 68.6% of the assessed patients had mild anxiety and 14.3% moderate anxiety, and a greater tendency towards depression was observed in those who experienced more anxiety [28]. In this sense, the creation of psychosocial support programs for people with comorbidities should be of paramount importance given that many of them may have better knowledge about COVID-19 and its complications, which could result in mental health disorders, putting them at greater risk.

In our study, it is also important to highlight the finding that healthcare personnel were less afraid of COVID-19; however this does not always occur similarly in different professional categories. In a cross-sectional study involving health workers from the Hospital of King Khalid University in Saudi Arabia was found that the mean anxiety score regarding MERS-CoV was similar for physicians as well as for other health workers; however, non-physicians expressed higher levels of anxiety toward the risk of transmitting MERS-CoV to their families [29].

Although the results obtained in this research are interesting, they may have been influenced by the fact that when the survey was carried out, there were not so many confirmed cases of infection or complication due to COVID-19 in Peru. In addition, there should be other important variables that may influence the fear of people related to coping with the pandemic, such as knowledge about the subject matter and perception of protective measures. This is also very important to be studied in health professionals from Peru.

Furthermore, the present study had the limitation of not being able to infer/extrapolate the results to the entire population of Peru, since a multi-stage sampling would be necessary to accomplish this objective. We cannot achieve this objective due to the fact that Peru was under quarantine and curfew at the time of the online surveys, as well as with traffic restriction and closing of important institutions. However, the findings of this study are quite relevant, given that they correspond to primary results of an investigation conducted during the COVID-19 containment period, which corresponds to the first report of fear perception of thousands of Peruvians in relation to COVID-19. Despite this, the importance of further research is stressed, with more population, variables, and logistics.

CONCLUSION

Based on our findings, we conclude that there is an important fear perception related to the COVID-19 pandemic by the Peruvian population. The fear was associated with female sex, older age groups, some religious groups, people with some risk for complications, and healthcare professionals. We think that our results in the Peruvian population may open up new perspectives in order to investigate disorders related to mental health, such as depression, stress, and anxiety due to the current pandemic.

Author contributions: All authors have sufficiently contributed to the study, and agreed with the results and conclusions.

Funding: No funding source is reported for this study.

Declaration of interest: No conflict of interest is declared by authors.

Acknowledgements: We thank the COVID-19-GIS-Peru research group to be able to spread the survey in the most important cities throughout the national territory.

REFERENCES

1. Santacroce L, Charitos IA, Prete RD. COVID-19 in Italy: an overview from the first case to date. Electron J Gen Med. 2020;17(6):em235. https://doi.org/10.29333/ejgm/7926
2. Sohrabi C, Alsafi Z, O'Neill N, Khan M, Kerwan A, Al-Jabir A, et al. World Health Organization declares global emergency: a review of the 2019 novel coronavirus (COVID-19). Int J Surg. 2020;76:71-6. https://doi.org/10.1016/j.ijsu.2020.02.034 PMid:32112977 PMCid:PMC7105032
3. CLINIC CLOUD. ¿Cuál es la mejor sanidad pública del mundo según la OMS? [What is the best public health in the world according to the WHO?]. Granada: CLINIC CLOUD. Available at: https://clinic-cloud.com/blog/cual-es-la-mejor-sanidad-publica-del-mundo-segun-oms/ (Accessed: 10 December 2020).
4. Johns Hopkins Coronavirus Resource Center. World Map. Baltimore. Available at: https://coronavirus.jhu.edu/map.html (Accessed: 26 November 2020).
5. Yezli S, Khan A. COVID-19 social distancing in the Kingdom of Saudi Arabia: bold measures in the face of political, economic, social and religious challenges. Travel Med Infect Dis. 2020:101692. 2020;37:101692. https://doi.org/10.1016/j.tmaid.2020.101692 PMid:32330561 PMCid:PMC7172679
6. Villamil Jiménez LC. Epidemias y pandemias: una realidad para el siglo XXI.Un mundo y una salud [Epidemics and pandemics: a reality for the 21st century: one world and one health]. Rev Lasallista Investig. 2013;10(1):7-8.
7. Woodward A, Gal S. One chart shows how the Wuhan coronavirus compares to other major outbreaks and pandemics in the last 50 years. New Delhi: Business Insider; Feb 5, 2020. Available at: https://www.businessinsider.com/how-wuhan-coronavirus-compares-to-other-outbreaks-pandemics-2020-1 (Accessed: 10 December 2020).
8. Xiang YT, Yang Y, Li W, Zhang L, Zhang Q, Cheung T, et al. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. Lancet Psychiatry. 2020;7(3):228-9. https://doi.org/10.1016/S2215-0366(20)30046-8
9. Pinto Bustamante BJ, Gómez Córdoba AI, Wintaco Martínez LM, Amador Muñoz DP, González Melo GA, Carabalí Isajar ML, et al. Bioética e investigación: análisis de caso de la epidemia por el virus Ébola en 2014. Rev. Latinoam. Bioet. 2017;17(1):124-49. https://doi.org/10.18359/rlbi.1943
10. Davis MD, Stephenson N, Lohm D, Waller E, Flowers P. Beyond resistance: social factors in the general public response to pandemic influenza. BMC Public Health. 2015;15:436. https://doi.org/10.1186/s12889-015-1756-8 PMid:25926035 PMCid:PMC4419473
11. Torales J, O'Higgins M, Castaldelli-Maia JM, Ventriglio A. The outbreak of COVID-19 coronavirus and its impact on global mental health. Int J Soc Psychiatry. 2020;66(4):317-20. https://doi.org/10.1177/0020764020915212 PMid:32233719

12. Tovani-Palone MR, Ali S. Psychological support to relatives of critically ill patients with COVID-19 [Apoio psicológico a familiares de pacientes graves com COVID-19]. Einstein (Sao Paulo). 2020;18:eCE6032. https://doi.org/10.31744/einstein_journal/2020CE6032 PMCid:PMC7453830
13. Paffenholz P, Peine A, Hellmich M, Paffenholz SV, Martin L, Luedde M, et al. Perception of the 2020 SARS-CoV-2 pandemic among medical professionals in Germany: results from a nationwide online survey. Emerg Microbes Infect. 2020;9(1):1590-9. https://doi.org/10.1080/22221751.2020.1785951 PMid:32573350 PMCid:PMC7473195
14. Shorey S, Ang E, Yamina A, Tam C. Perceptions of public on the COVID-19 outbreak in Singapore: a qualitative content analysis. J Public Health (Oxf). 2020;42(4):665-71. https://doi.org/10.1093/pubmed/fdaa105 PMid:32648577 PMCid:PMC7454786
15. Pedersini P, Corbellini C, Villafañe JH. Italian physical therapists' response to the novel COVID-19 emergency. Phys Ther. 2020;100(7):1049-51. https://doi.org/10.1093/ptj/pzaa060 PMid:32280973 PMCid:PMC7184495
16. Ornell F, Schuch JB, Sordi AO, Kessler FHP. "Pandemic fear" and COVID-19: mental health burden and strategies. Braz J Psychiatry. 2020;42(3):232-5. https://doi.org/10.1590/1516-4446-2020-0008 PMid:32267343 PMCid:PMC7236170
17. Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, et al. Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. Int J Environ Res Public Health. 2020;17(5):1729. https://doi.org/10.3390/ijerph17051729 PMid:32155789 PMCid:PMC7084952
18. World Health Organization. Notas descriptivas. Salud de la mujer [Descriptive Notes. Women's health]. Geneva: World Health Organization; 2018. Available at: https://www.who.int/es/news-room/fact-sheets/detail/women-s-health (Accessed: 10 December 2020).
19. Economic Commission for Latin America and the Caribbean. Informes COVID-19. La pandemia del COVID-19 profundiza la crisis de los cuidados en América Latina y el Caribe [The COVID-19 pandemic deepens the care crisis in Latin America and the Caribbean]. Santiago: Economic Commission for Latin America and the Caribbean; Apr, 2020. Available at: https://repositorio.cepal.org//handle/11362/45335 (Accessed: 10 December 2020).
20. Zhou F, Yu T, Du R, Fan G, Liu Y, Liu Z, et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. Lancet. 2020;395(10229):1054-62. https://doi.org/10.1016/S0140-6736(20)30566-3
21. Wu C, Chen X, Cai Y, Xia J, Zhou X, Xu S, et al. Risk factors associated with acute respiratory distress syndrome and death in patients with coronavirus disease 2019 pneumonia in Wuhan, China. JAMA Intern Med. 2020;180(7):934-43. https://doi.org/10.1001/jamainternmed.2020.0994 PMid:32167524 PMCid:PMC7070509
22. Centers for Disease Control and Prevention. COVID-19 (coronavirus disease). Interim Clinical guidance for management of patients with confirmed coronavirus disease (COVID-19). Atlanta: Centers for Disease Control and Prevention; 2020. Available at: https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-guidance-management-patients.html (Accessed: 10 December 2020).
23. Lima CKT, Carvalho PMM, Lima IAAS, Nunes JVAO, Saraiva JS, de Souza RI, et al. The emotional impact of Coronavirus 2019-nCoV (new Coronavirus disease). Psychiatry Res. 2020;287:112915. https://doi.org/10.1016/j.psychres.2020.112915 PMid:32199182 PMCid:PMC7195292
24. Mejia CR, Rodríguez-Alarcón JF, Carbajal M, Pérez-Espinoza P, Porras-Carhuamaca LA, Sifuentes-Rosales J, et al. Fatalism due to the possibility of coronavirus infection: generation and validation of an instrument (F-COVID-19). Kasmera. 2020;48(1):e48118032020. https://doi.org/10.5281/zenodo.3732353
25. Bautista JS, Escobar VH, Miranda RC. Scientific and religious beliefs about the origin of life and life after death: validation of a scale. Universal Journal of Educational Research. 2017;5(6):995-1007. https://doi.org/10.13189/ujer.2017.050612
26. Uribe Rodriguez AF, Valderrama Orbegozo L, López S. Actitud y miedo ante la muerte en adultos mayores [Attitude and fear of death in older adults]. Pensamiento Psicológico-Psychological thinking. 2007; 3(8):109-20.
27. Bustos-Vázquez E, Fernández-Niño JA, Astudillo-Garcia CI. Self-rated health, multimorbidity and depression in Mexican older adults: proposal and evaluation of a simple conceptual model. Biomedica. 2017;37(0):92-103. https://doi.org/10.7705/biomedica.v37i3.3070 PMid:28527271
28. May KM, Hernández MV, Orama PJ, Hernández VG, Moreno MG. Depresión y ansiedad en pacientes con diabetes mellitus tipo 2 del Hospital Comunitario de Jonuta, Tabasco "Arsenio Filigrana Zubieta" [Depression and anxiety in patients with type 2 diabetes mellitus of the Community Hospital of Jonuta, Tabasco "Arsenio Filigrana Zubieta"]. European Scientific Journal, ESJ. 2019;15(6):525-34. https://doi.org/10.19044/esj.2019.v15n6p525
29. Alsubaie S, Hani Temsah M, Al-Eyadhy AA, Gossady I, Hasan GM, Al-Rabiaah A, et al. Middle East Respiratory Syndrome Coronavirus epidemic impact on healthcare workers' risk perceptions, work and personal lives. J Infect Dev Ctries. 2019;13(10):920-6. https://doi.org/10.3855/jidc.11753 PMid:32084023