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ORIGINALES

Fear of COVID-19, socio-demographic and vulnerability characteristics in adults from the North and South of Mexico

Miedo a la COVID-19, características sociodemográficas y de vulnerabilidad en adultos del Norte y Sur de México

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ABSTRACT:

Introduction: The COVID 19 pandemic continues to be an unprecedented public health problem worldwide for both sick and healthy people.

Objective: Determine the association between the fear of COVID-19 with the socio-demographic characteristics and the status of vulnerability.

Material and methods: Descriptive, cross-sectional and correlational study. Sample: 197 participants 18 or older who belong to community-care centers in Monterrey, Nuevo León and Minatitlan, Veracruz. Intentional sampling. Instrument used: Fear of COVID-19 scale. Data assessment was performed with SPSS version 22, using descriptive and inferential statistics.

Results: Fear of COVID-19 was associated with the person's sex, but not with the status of vulnerability and the other socio-demographic variables such as age, schooling, employment status, and place of residence.

Conclusion: Based on the purpose of the study, it was found that only the sex variable was associated with fear of COVID-19. More men than women reported having less fear, which may explain the higher prevalence of this disease in this population group.

Keywords: Fear, Coronavirus infections, Adults, Community Care.

RESUMEN:

Introducción: La pandemia de COVID 19, continúa siendo un problema de salud pública sin

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precedentes en todo el mundo tanto en las personas enfermas y sanas.

Objetivo: Determinar la asociación entre el miedo al COVID-19 con las características sociodemográficas y el estado de vulnerabilidad.

Material y métodos: Estudio descriptivo, transversal y correlacional. Muestra: 197 participantes a partir de 18 años pertenecientes a centros de atención comunitaria de Monterrey, Nuevo León y Minatitlán, Veracruz. Muestreo intencional. Instrumento: Escala de Miedo a la COVID-19. El análisis de los datos se realizó con el SPSS versión 22, recurriendo al empleo de estadística descriptiva e inferencial.

Resultados: El miedo a la COVID-19 se asoció con el sexo, mas no con el estado de vulnerabilidad y las otras variables sociodemográficas como la edad, escolaridad, situación laboral y lugar de residencia.

Conclusión: Con base al propósito del estudio se encontró que únicamente el sexo se asocia con el miedo a la COVID-19. Mas hombres que mujeres reportaron tener menos miedo, lo que puede explicar las principales prevalencias de esta enfermedad en este grupo poblacional.

Palabras claves: Miedo, infecciones por Coronavirus, Adultos, Atención Comunitaria.

INTRODUCTION

On December 31, 2019, in Wuhan, China⁽¹⁾ started what today is known as a public health emergency, caused by the outbreak of a viral strain of the SARS-CoV-2 type, which was named COVID-19^(2,3). Its capacity to spread readily is one of its main characteristics; thus, its propagation did not take much time in crossing borders and be the cause of illness, disability, and death across the world, being the United States one of the countries with the most cases and deaths registered; and according to the World Health Organization, globally, the cases and deaths confirmed continue to rise^(4,5).

In Mexico, the first case of COVID-19 was detected in February 2020. The number of confirmed cases increased exponentially (2.348.873 cases), and as a result 200.000 deaths, figures that locate the country in third place just behind the United Sates; added to this, there were seen consequences such as excessive hospitalizations or high demand of care services, in addition to high costs, risks during access, coverage, and capacity of response of the health system⁽⁶⁻⁸⁾.

At biopsychosocial level, the COVID-19 has caused negative effects such as the fear of becoming infected. The COVID-19 pandemic has changed the way people live, for example their daily life⁽⁹⁾, their family dynamics and reorganization to cover the needs related to the roles of the members of the family, in addition to school absences, company closures, changes in work routines, and social isolation, thus generating feelings of helplessness and loneliness⁽¹⁰⁾.

To that effect, there are factors that could play an important role in the fear phenomenon experienced towards COVID-19, since the cases are becoming increasingly close; that is to say, family members, friends, even the health personnel who have presented this condition. Another factor involved consists in seeing and listening news that spread out and increase the health-illness situation, along with disturbing images which generate high level of fear; therefore, increasing the possibility of worsening mental health disorders⁽⁹⁾.

Moreover, the people who experience fear of becoming ill of COVID-19, violate recommendations such as confinement, social distancing, proper hand washing, and use of masks; consequently, the figures are constantly increasing⁽¹¹⁾. Despite that OMS in 2020 published recommendations to support mental and social wellbeing, it is

necessary to establish joint actions with the social and health systems⁽¹²⁾ in order to reduce the impact at mental level.

Networks of emotional support regarding COVID-19 has been established in Mexico, addressed to the population in order to mitigate damages that may affect their social and mental health⁽¹⁴⁾. However, this outlook remains uncertain; thus, it is necessary to reinforce all prevention measures. In this respect, possibly the people who follow the recommendations experience lower levels of fear since they carry out these measures in an efficient way to maintain their good health level, and it can also be said that people who follow the recommendations become health advocates breaking the infection cycle.

In Nuevo Leon and Veracruz (North and South parts of Mexico), the outlook is discouraging since the figures of new cases and death detected caused by COVID-19 are disquieting. Both states are among the first ten places with higher morbidity and mortality due to this cause in the country⁽⁸⁾, despite of being distant regions, there is the possibility that the inhabitants of both states experience the sensation of fear, and, hence, use this resource either in their favor or not, that is, as a protection factor that favors the prevention measures; or, people with high levels of fear could have difficulty in deciding how to use the mask correctly. Likewise, lower levels of fear could be associated to the fact of not dealing correctly with the recommendations given in order to break the infection cycle.

Nonetheless, up to this time there is no evidence that brings to light what it was stated above. Therefore, the purpose of this study was to know the association between the fear of COVID-19 and socio-demographic characteristics, such as age, sex, schooling, status of vulnerability, and place of residence.

METHODS

A descriptive, cross-sectional, and correlational design was performed. The target population was comprised by 380 adult people age 18 and over who belong to community-care centers of Monterrey (Nuevo León) and Minatitlán (Veracruz); between February and June 2021, finally a sample of 197 persons were registered. from this amount 100 were from Nuevo León and 97 from Veracruz. In order to select them, each participant's age was verified, and subsequently they were contacted by way of a phone call. All users who after receiving the phone call accepted to participate were included. This procedure was carried out three times. If there was no answer, another person from the registry was contacted. Only those who after receiving the explanation of the study voluntarily accepted to participate and showed availability of approximately ten minutes to answer the questions participated. It was determined a 95% of the level of confidence and 3% accuracy in a proportion of 5%. The type of sampling was intentional, in a sampling frame provided by the management people of the community-care centers. Once the communication with the favorable report of the research committee of both centers of primary care was received, a document of information and informed consent assuring anonymity was provided to the participants.

The instrument used was the FCV-19S Scale validated to Fear of COVID-19, which is comprised of 7 items⁽¹⁵⁾ with good psychometric properties that was used to assess

the fear of the people to COVID-19. The questions show a Likert type scale that goes from totally disagree up to totally agree, that is, 1 to 5 points of value, which indicated a minimum value of 7 and a maximum value of 35. The highest the score, the highest the fear of COVID-19⁽¹⁶⁾. This questionnaire has demonstrated a Cronbach alpha of 0.83 to 0.94 in Peruvian and Argentinean population, respectively⁽¹⁷⁾.

The registered socio-demographic variables were age, sex (female or male), schooling, employment status (works/home/unemployed), place of residence (Nuevo León and Veracruz). Moreover, the status of vulnerability to get sick of COVID-19 was assessed, and it was evaluated from 0 to 10, which indicated the compliance of the preventive measures to prevent becoming ill of this illness; for that, points from 0 to 10 were assigned, which is equivalent to nil practices and good practices (use of masks, hand washing, keeping social distance, and social confinement). These factors can be variables of interest due to their influence in the emotional and psychological status during the pandemic. It is worth mentioning that health measures for the control of COVID-19 and the own illness have a potential psychological effect such as the fear of COVID-19.

This study adhered to the general provisions of the General Health Act for Research stated in Chapter I of the common rules in articles 13, 16, 17, 20, and 21; additionally, articles 28, 29, and 33 included in Chapter II of the Research in Communities were also followed.

Data obtained were assessed through the use of the Statistical Package for the Social Sciences (SPSS) version 22 for Windows. Descriptive and inferential statistics were used.

RESULTS

Their average age was 36.3 years (*SD*= 11.216); most were women (78.2%), the average years of education was 14.37 years (*SD*=4.414), and 50.8% were residents of Nuevo León (Table 1).

Table 1. Descriptive results of the study variables (n=197)

Variable	n	%
Age (years)		
20-30	74	(37.6)
31-40	57	(28.9)
41-50	44	(22.3)
51-67	22	(11.2)
Sex		
Female	154	(78.2)
Male	43	(21.8)
Schooling		
Elementary	27	(13.7)
Junior High	34	(17.3)

High School	42	(21.3)
University	59	(29.9)
Postgraduate studies	35	(17.8)
Employment status		
Working	62	(31.5)
House/Unemployed	135	(68.5)
Place of residence		
Nuevo León	100	(50.8)
Veracruz	97	(49.2)
Status of vulnerability		
Nil practices	86	(43.7)
Good practices	111	(56.3)

Table 2 shows the results obtained regarding fear of COVID-19 and the socio-demographic and status of vulnerability characteristics using the exact test of Fishery and the Pearson's Chi-Squared test. With respect to the total sample, 62.4% were afraid. In Veracruz, fear prevalence was higher (64.9% vs. 60%; respectively). No significant differences were found between fear and place of residence (p = .285), schooling ($X^2 = 6.659$, p = .857), and status of vulnerability (.658). Significant differences were found between fear and sex (p=.029), were the female sex showed a higher prevalence than the male sex (66.2 vs. 48.8%).

Table 2.- Fear of COVID-19 according to socio-demographic and vulnerability characteristics (n= 197)

characteristics (n= 197)						
E	aar -	Yes	No	_ Fisher		
Fear -		f (%)	f (%)	р		
Dagidana	Nuevo León	60 (60)	40 (40)	205		
Residence	Veracruz	63 (64.9)	34 (35.1)	.285		
Sex	Female	102 (66.2)	52 (33.8)	.029*		
Sex	Male	21 (48.8)	22 (51.2)	.029		
Status of	Nil practices	52 (60.5)	34 (39.5)	050		
vulnerability	Good practices	71 (64)	40 (36%)	.658		
E	Fear -	Yes	No	X^2		
Γ.	ear -	f (%)	f (%)	(p)		
	Elementary	13 (48.1)	14 (51.9)	1.		
	Junior High	26 (76.5)	8 (23.5)	6.659		
Schooling	High School	29 (69.0)	13 (31.0)			
_	University	34 (57.6)	25 (42.4)	(.857)		
	Postgraduate	21 (60.0)	14 (40.0)			
	TOTAL	123 (62.4)	74 (37.6)			

The average age for the participants who did not feel fear was 34.5 years (Mdn = 33, SD = 10.911, n = 74), schooling 14.1 (Mdn = 15, SD = 5.035, n = 74). With respect to the participants that reported high fear scores, the average age was 37.3 years (Mdn = 36, SD = 11.312, n = 123), schooling 14.5 (Mdn = 14, SD = 4.008), n = 123). Regarding age, a relationship between age and fear was not found ($r_s = .037$; p = .601).

DISCUSSION

In this study, most of the population had an average level of fear of COVID-19 (74.6%), results that match the findings from a study performed in the US. Statistically significant differences in the fear levels of COVID-19 between the main regions where fear seems to be concentrated in the regions with the highest cases reported of COVID-19 $(p < 0.01)^{(18)}$ were found; as well as in a study performed in Spanish population where the presence of fear was 75.5%; and in population from Andalusia where the fear of COVID-19 reached 50.8% $^{(9.19)}$. Another study performed in Greek population reported a high level of fear, amounting to $35.7\%^{(20)}$. However, it differs from what was reported in a study carried out in Bosnia and Herzegovina where the score was $18.06\%^{(21)}$; in another study performed in India in the general population, where the average score for fear was $17.87 \pm 4.48^{(22)}$ and in a study performed in the Argentinean population the average scored was $16.97(SD=5.70)^{(23)}$.

It is important to highlight that the presence of a lot of fear of COVID-19 was not seen, which can indicate that the perception of fear has become something natural, that repeated behavior is underestimated, and with this, people become population at risk with the possibility of presenting the infection of COVID-19, where this feeling is accepted so they will not take care of themselves, and thus abandon preventive measures established by the health system, practicing common life styles and habits, such as social relationships, failure to wash their hands, attend public events, and relax preventive measures. While for other people, the feeling of fear make them to carry out positive health practices that encourage continuing with the protection against COVID-19 in their daily life, in such a way that allows reducing the fear level.

Additionally, in this study a relationship between age and fear of COVID-19 was not found, datum that differs from the results of the research from Bosnia in 2020, where being of legal age is another independent predictor to develop fear⁽²²⁾.

In this study a relationship between fear of COVID-19 and sex was seen. Women reported noticing an increase of fear in comparison with the male sex. These results match with most of the results of the aforementioned studies, that is, women seen particularly more vulnerable to the negative psychological impact of the pandemic⁽²³⁾. Accordingly, Oliver, Baber, Roomp and Roomp (2020) reported that women were seen, in general, more vulnerable to show fear and the appearance of symptoms resulting from this feeling⁽²⁴⁾.

Even though in this study no association was found between fear of COVID-19 and the status of vulnerability, Mamzer warns that COVID-19 and the measures to prevent it are presented as a sudden stop of the ontological sense of security, which allows people to organize their daily life up to that moment, generating negative feelings such as fear which can worsen according to persistence and development of the virus⁽²⁵⁾.

Moreover, fear focuses to potential sources of threat or damage. People who are more involved in preventive activities assume behaviors when they see the threat as serious. Additionally, fear can trigger security behaviors which may likely motivate people to adhere to precautionary measures such as hand washing with water and soap in order to mitigate threats such as transmission, but paradoxically also could increase fear and anxiety to maintain their good health due to the fear to get sick.

Likewise, fear will depend of the socio-demographic zone due to the fact that the culture plays an important role when it comes to confronting hazardous situations such as COVID-19, as it was stated in this study and the one performed by Tzur Bitan et al.⁽²⁶⁾

With respect to the association between fear to COVID-19 and employment status, the emotions are crucial due to the impact that these have on the employment status, since emotions cannot be separated from people, in this case, workers. Nevertheless, certain emotions manage to be dysfunctional for the employment status when affecting the performance of the individuals, as is the case of fear. Studies carried out have been able to prove that fear affects the workers, even the fear to get sick of COVID-19 or at the prospect of losing their jobs, mainly because moving to their work place implies a risk of getting sick, as well as remaining at their jobs. However, people who are unemployed do not experience the same fear, since they are not similarly exposed, but do show anxiety because of the uncertainty of not having a financial income to meet their basic needs⁽²⁷⁾.

High or low levels of fear could even be either protecting or risky agents, which depends on the capacity of the people to assimilate the situation and tackle the threat effectively⁽²⁰⁾.

In a pandemic health security measures are established and promoted to reach effect to prevent the propagation of infections. Nonetheless, when these are too long or severe such as the current one, it can have negative consequences such as fear⁽¹⁰⁾. Therefore, this valuable phenomenon will help to look for other variables such as anxiety and social support, among others.

CONCLUSION

Based on the purpose of the study, it was found that only sex is associated to fear of COVID-19. More men than women reported to have less fear, which can explain the higher incidence of this illness in this population group, that is, men.

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