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ECONOMIC AND HEALTH EFFECTS DURING QUARANTINE BY COVID-19 IN THE PERUVIAN POPULATION IN 2020

ASPECTOS ECONÓMICOS Y DE SALUD EN TIEMPOS DE CUARENTENA POR COVID-19 EN POBLACIÓN PERUANA, AÑO 2020

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ABSTRACT

Objective: To identify the economic and health aspects in times of quarantine due to COVID-19 in the Peruvian population in 2020. **Methods:** Quantitative, descriptive, and non-experimental approach. A sample of 1064 Peruvians from all the regions of Peru surveyed from March to April of 2020. The distribution of absolute and relative frequencies was used. **Results:** Regarding the economic situation, 57.3% presented many or some economic problems to buy necessities, 69.8% has food supplies for less than seven days; 56.8% has enough monetary income for less than two weeks. Likewise, 79.5% has not benefited from a state bond or subsidy and 65.8% declare that the bonds or subsidies are not enough to be able to acquire the basics. Regarding health aspects, 10.5% of those surveyed stated that some of the members of their household had symptoms, and 1.1% say that in their family there is a confirmed carrier of COVID-19. 88.3% have altered the sensation generated by social isolation and 56.4% have felt stress due to social isolation. **Conclusion:** There are economic problems to acquire food and medicine. The food supply is enough for 7 days, the monetary income is only enough for two weeks, the vouchers are scarce to buy the basics and most of the family has not been benefited by state bonuses. In the aspects of health, most people feel altered by social isolation and stress from quarantine.

Key words: Coronavirus; Quarantine; Economic aspects; Health aspects (source: MeSH NLM).

RESUMEN

Objetivo: Identificar los aspectos económicos y de salud en tiempos de cuarentena por COVID-19 en la población peruana en el año 2020. **Métodos:** Enfoque cuantitativo, descriptivo y no experimental; con una muestra de 1064 peruanos de todas las regiones del Perú encuestados en el mes de marzo a abril del año 2020. Se empleó la distribución de frecuencias absolutas y relativas. **Resultados:** En cuanto a la situación económica, se tiene que el 57,3% refiere que ha presentado muchos o algunos problemas económicos para comprar productos de primera necesidad, el 69,8% manifiesta que tiene alimentos en la actualidad para menos de siete días; el 56,8% tiene dinero suficiente para menos de dos semanas. Asimismo, el 79,5% refiere no que han sido beneficiado con algún bono o subsidio del estado y el 65,8% declara que los bonos o subsidios son poco para poder adquirir lo básico. En cuanto a los aspectos de salud, el 10,5% de los encuestados manifestó que alguno de los integrantes de su hogar tenía síntomas; y el 1,1% refiere que en su familia hay algún portador confirmado del COVID-19. El 88,3% tiene alterada la sensación generada por el aislamiento social y un 56,4% ha sentido estrés debido al aislamiento social. **Conclusión:** Existen problemas económicos para comprar alimentos y medicinas, que los alimentos son suficientes solo para 7 días, el dinero solo es suficiente para dos semanas, los bonos son pocos para adquirir los básico y la mayor parte de la familia no ha sido beneficiada por ningún bono. Y, en cuanto a la salud, la mayor parte tiene una sensación alterada por el aislamiento social y presenta estrés por la cuarentena.

Palabras clave: Coronavirus; Cuarentena; Aspectos económicos; Aspectos de salud (fuente: DeCS BIREME).

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INTRODUCTION

The World Health Organization (WHO), after the high cases of contagion of the new coronavirus (COVID-19), has come to describe the outbreak originating in China as a pandemic to increase the political commitment of some countries[1]. It is important to mention that the new coronavirus is a particular strain that had not been previously identified in humans; therefore, there is currently limited information on transmission and clinical impact, as well as the best treatment[2].

Globally, the new coronavirus has infected more than 2.8 million people worldwide with a death rate of 204.891 and 812.548 being in the recovery phase. It has an upward trend in infections and the number of deaths. Countries such as the United States, Spain, Italy, France, Germany, and the United Kingdom (in that exact order) are the most affected by the pandemic in terms of the number of confirmed infections and are the only ones where the barrier of 100.000 cases has been exceeded. These countries have overtaken China (the original epicenter of the pandemic) in terms of cases of contagion and deaths[3].

In this sense, Lai C et al. (2020) mentioned that more than 43.000 confirmed cases of COVID-19 have been identified in 28 countries/regions[4]. Likewise, Palacios M., et al. (2020) pointed out that the mortality rate for COVID-2019 is not high (about 2-3%), but its rapid spread has led to the activation of protocols for its arrest[5].

At the Latin American level, three weeks ago 0.1% of global cases were noted and rising to 2.4%. Brazil leading this list with 54.043 cases and 3.704 deaths, followed by Peru with 25.331 cases and 700 deaths, and Ecuador with 22.719 cases and 576 confirmed deaths, although more deaths are reported[6].

These cases and increased deaths have led to several analyses or studies on COVID-19 in different countries, for example, Zakaria H et al. (2020) in Saudi Arabia showed that the demographic profile of the participants was between 20 and 39 years of age (61.5%), females (52.9%) and with university education (63.8%), although unemployed (56.3%), with family income greater than 8000 SAR/month, living in the urban region (95.8%), about a third with farm ownership (34.9%) and few had camels (9.6%). Most showed moderate knowledge of coronavirus (85.5%). Age, education, and occupation were significant predictors of low wisdom (p<0.05).

The essential source of information was the Ministry of Health, then social networks and community communication[7].

This situation has generated economic, social, and health crises. Social distancing has forced the reduction of the labor forces in the vast majority of economic sectors causing the loss of many jobs, and monetary problems. It does not only cause physical but also psychological health problems[8].

In India, Roy D et al. (2020) found that there is a moderate level of knowledge about COVID-19 infection in the population and adequate knowledge about its preventive aspects. The attitude towards COVID-19 showed the willingness of individuals to follow government guidelines on quarantine and social distancing. The levels of anxiety identified were high. Additionally, more than 80% of people were concerned with thoughts associated with COVID-19 and 72% reported the need to use gloves and disinfectants. Likewise, sleeping difficulties (12.5%), paranoia about the acquisition of COVID-19 infection (37.8%), and anxiety related to social networks (36.4%)[9] were recorded.

In Turkey, Açikgöz Ö and Günay A (2020) revealed that this COVID-19 pandemic has serious adverse effects on employees, customers, supply chains, and financial markets[10].

Likewise, Qiu W, Chu C, Mao A, and Wu J (2018) found that severe acute respiratory syndrome has had an impact in China, causing significant negative effects on health, the economy, and even national and international security[11].

In South Korea, Lee A and Cho J (2016) showed through their research that older workers faced a higher probability of unemployment after the Middle East Respiratory Syndrome outbreak. In particular, they experienced higher involuntary unemployment and a state of underemployment, as well as a reduction in working hours. It was confirmed that the relative vulnerability of the labor market for older workers was higher than for the other age groups after the epidemic outbreak due to the double blow of vulnerability in the medical and labor markets[12].

Defining the coronavirus, it is an enveloped RNA virus that causes respiratory diseases of varying severity, from the common cold to fatal pneumonia. Only 7 coronaviruses are known to cause disease in humans, and only 3 causes respiratory infections. The most current being SARS-CoV2 and is identified as the cause of the 2019 coronavirus disease (COVID-19)

which started in Wuhan, China, in late 2019 and has spread around the world[13].

On December 31, 2019, the authorities of China reported several cases of pneumonia of unknown etiology to the WHO in Wuhan, a city located in the Chinese province of Hubei. A week later they confirmed that it was a new coronavirus that has been called SARS-CoV-2. Like others in the coronavirus family, this virus causes various clinical manifestations encompassed under the term COVID-19[14].

Cases are currently known in some areas of Thailand, Japan, South Korea, Italy, Spain, Iraq, France, the United States, Mexico, Brazil, Ecuador, Chile, Peru, among other countries. It is important to mention that this virus is transmitted from person to person through droplets that a patient expels when talking, coughing, or sneezing. These can be inhaled by people who are close to the patient and also remain on any type of surface (handrails, tables, pencils, among others) and be touched with the hands.

The virus enters the body when the eyes, nose, and mouth are touched with unwashed hands[15]. Also, a person can contract the virus by touching contaminated surfaces and then touching their face (eyes, nose, or mouth). It has been observed that the COVID-19 virus can survive on a surface for several hours, but can be removed with simple disinfectants [16].

People with COVID-19 may have few or no symptoms, although some become seriously ill and die. Symptoms may include fever, cough, and dyspnea. Patients with more severe disease may have lymphopenia and chest imaging findings consistent with pneumonia. The exact incubation time is not known with certainty; however, according to some estimates, it ranges from 1 to 14 days[13].

Singhal T (2020) reported that the condition is mild; but in some (generally the elderly and people with comorbidities) it can lead to pneumonia, acute respiratory distress syndrome (ARDS) and multi-organ dysfunction, besides, many people are asymptomatic [17].

Diagnosis is made by special molecular tests, where the virus is demonstrated in respiratory secretions. Common laboratory findings include normal/low white blood cell counts with elevated C-reactive protein (CRP), and chest computed tomography is often abnormal, even in those without symptoms or mild disease[17].

Various preventive measures include handwashing with soap and water for at least 20 seconds, especially after being in a public place or after blowing your nose, coughing, or sneezing. If soap and water are not available, use a hand sanitizer that contains at least 60% alcohol. Avoiding touching eyes, nose, and mouth without washing hands and preventing direct contact; covering the mouth and nose with a cloth covering when surrounded by people and covering the mouth when coughing and sneezing, either with the inside of the elbow or with disposable tissues, are required measures. In addition to daily cleaning or disinfecting surfaces that are frequently touched or that are dirty[18].

In the review by Adhikari S et al. The main preventive measures were identified as: masks, hand hygiene practices, avoiding public contact, case detection, contact tracing, and quarantine[19].

At the national level, the total population of Peru in 2020 is 32 625 658 million, and the economically active population (from 18 years and over) is made up of approximately 23 052 170 million. The population is directly affected by the coronavirus, either at an economic, labor, and health level[20]. The situational reality of this population to COVID-19 has been affected alarmingly, given that the population has different opinions about this pandemic. According to a survey conducted by Datum to 410 people from different regions of the country at the end of March, it is found that 49% believe that the measures established by the Peruvian government will partially control the contagion of COVID-19. 70% of Peruvians have not been able to work from home and only 18% were found to do so, 41% have food supply and money problems, and 64% of the population is concerned about this economic situation and health also 32% found themselves bored. The positive aspect of the measures of social isolation was that they enjoyed their friends and family more (53%)[21]. It should be noted that this situation, to date, has changed considerably, since the increase in the number of cases and deaths by the end of April 2020, has transformed opinions on the measures taken by the government; causing a great impact on the economic aspect. Due to the absence of work, which has been causing monetary deficiencies, affecting both the mental and physical health of the Peruvian population. In this analysis, we seek to know, in a detailed way, the economic situation and certain health aspects, according to the point of view that people from different districts and/or regions of the country have based on the new

coronavirus, a disease that is causing an important impact on Peruvian society, this to show the situation that Peru is going through from different points of view.

The objective of this article is to identify the economic and health aspects in times of quarantine due to COVID-19 in the Peruvian population in 2020.

METHODS

A study with a quantitative approach, descriptive level, and non-experimental design was conducted. The sample consisted of 1064 Peruvians from all the regions of Peru surveyed from March to April of the year 2020. For the selection of the sample, the finite sample formula was applied, taking into account a total population of 23 052 170 million, an error of 3%, and a prevalence of 0.5%. Inclusion and exclusion criteria were met.

Inclusion criteria:

- Person over 18 years old and under 75 years old.
- Both females and males
- Person who wishes to participate in the virtual survey.

Exclusion criteria:

- An illiterate person

The technique used was the personalized online survey and the instrument was a structured questionnaire with closed questions that evaluated the economic aspects and the health situation of the Peruvians who agreed to participate in the study. This instrument is entitled: "Situational analysis of the economic and health aspects in the Peruvian population in times of COVID-19, 2020", which is divided into three parts. The first describes the age and gender of the Peruvian population consisting of 2 questions. The second one corresponding to the economic aspects dimension made up of 9 questions. The third health aspect dimension is made up of 4 questions.

This instrument was validated by expert judgment through the expert appraisal index, obtaining agreement between their appraisals (p <0.05). Likewise, the questions of the instrument were made reliable through a pilot test applied to 30 people, obtaining a Cronbach's alpha coefficient of 0.80 for Likert-type questions, and reliability by Kuder Richardson of 0.82 for dichotomous questions, showing these results very high reliability for both cases, and suitable for your application.

The statistical analysis was carried out using the SPSS v.25 program, using the distribution of absolute and relative frequencies for qualitative variables, also being presented in graphs made with the Microsoft Excel program.

RESULTS

Of a total of 1064 respondents in different regions of Peru, most are between the ages of 30 to 59 years (64.6%), in addition to gender, 66.3% are male and 33.7 % woman. (Figure 1 and 2). Regarding the economic situation, 84.1% agree that in this quarantine period they have managed expenses in a more orderly manner. Likewise, 47.5% agree concerning having sufficient financial resources to face quarantine. 42.7% report that they have had few financial problems to buy necessities, 69.8% state that the food is currently sufficient for less than seven days. Also, 56.8% have enough money for less than two weeks, 79.5% say that the family has not benefited from any state bond or subsidy, 65.8% state that state bonds or subsidies are not enough to be able to acquire the basics to survive with the family during the quarantine period. 64.1% refer that they have not resorted to loans, transfers, or remittances from family or friends, and 39% report that a family member or friend has had many financial problems. (See Table 1).

Regarding health aspects, 10.5% of those surveyed stated that some of the members of their household had symptoms such as dry cough, fever, sore throat, general malaise, no perception of odors, or flavors. 1.1% report that there is a confirmed carrier of COVID -19 in their family. 88.3% have altered the sensation generated by social isolation, and 56.4% have felt stress due to social isolation. (See Tables 2).

Table 3 presents the economic aspects and the presence of clinical symptoms related to COVID-19. The respondents who state that the food is currently sufficient for less than seven days mention are that 74.1% have someone at home with clinical symptoms related to COVID-19, and 69.3% do not show symptoms. On the other hand, of those who report having enough money for less than two weeks, 55.4% have someone at home with clinical symptoms related to COVID-19, but 56.9% do not.

Table 4 shows the economic aspects and the sensation generated by social isolation. Those surveyed who state that food is currently sufficient for less than seven days mentioned that 69.3% present alteration of the sensation generated by social isolation, while 74.2% show no alteration. Likewise, participants

who report having enough money for less than two weeks stated that 57.1% present an alteration in the sensation generated by social isolation, while 54% show no alteration. Regarding those participants who agree that in this quarantine they have managed expenses in a more orderly manner, 83.8% present alteration of the sensation generated by social isolation, while 86.3% show no alteration. As for those who have presented a few financial problems to buy necessities, 42.3% present alteration of the sensation generated by social isolation, while 45.2% do not. And those people who did not benefit from any member of their family with any subsidy or state bond, 78.4% presented an alteration in the sensation generated by social isolation, while 87.9% did not.

Table 5 shows the economic aspects and stress. Those surveyed who state that food is currently sufficient for less than seven days declared that 73.2% present stress, while 65.5% do not present any stress. Likewise, those who report having enough money for less than two weeks, 65% present stress, while 46.1% do not. Regarding those who agree that in this quarantine they have managed expenses in a more orderly manner, 83.3% present stress, while 85.1% do not. As for those who have had few financial problems to buy necessities, 33.5% present stress, while 54.5% do not. Finally, those people who did not benefit from any member of their family with a subsidy or bond from the state, 76.2% present stress, while 83.8% do not.
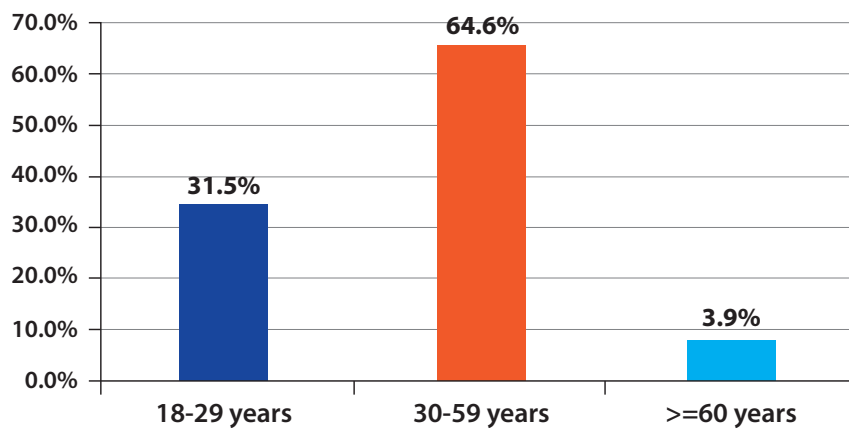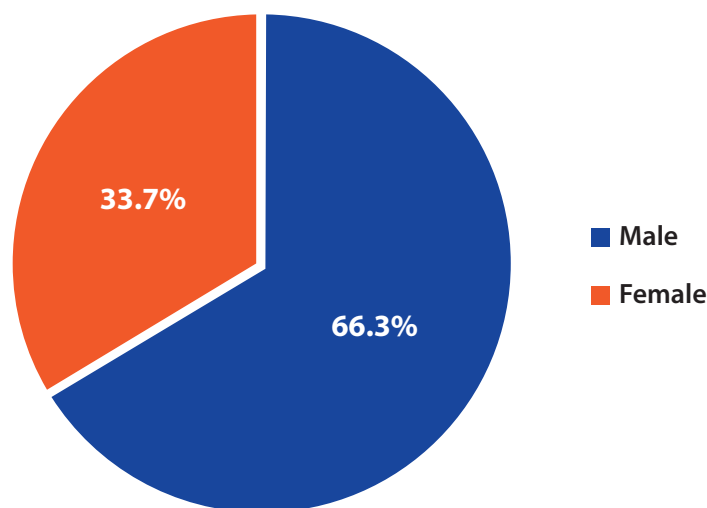

Figure 1. Age of participants, in 2020.

Figure 2. Gender of participants, in 2020.

Table 1. Economic aspects in times of quarantine due to COVID-19 in the Peruvian population, in 2020.

Economic aspects		n	%
More orderly management of expenses during quarantine.	Agree	895	84.1%
	Neither agree nor disagree	110	10.3%
	In disagreement	45	4.2%
There are financial resources to face this quarantine period.	Agree	505	47.5%
	Neither agree nor disagree	248	23.3%
	In disagreement	214	20.1%
Financial problems to buy basic necessities (food and medicine).	Many	216	20.3%
	Some	394	37.0%
	Few	454	42.7%
Food today is enough to support your family.	< 7 days	743	69.8%
	≥ 7 days	321	30.2%
Money today is enough to support your family.	< 2 weeks	604	56.8%
	3 weeks to 1 month	239	22.5%
	> 1 month	221	20.8%
State bonds or subsidies are enough to buy the basics (food and medicine) during quarantine.	It's too much	25	2.3%
	It's enough	339	31.9%
	It's little	700	65.8%
Loans, transfers or remittances from friends or relatives were used.	Yes	382	35.9%
	No	682	64.1%
Family member or friend has had problems for money.	Many	419	39.4%
	Some	394	37.0%
	Few	251	23.6%
Family benefited by a bond or subsidy from the State.	No	846	79.5%
	Yes	218	20.5%

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Table 2. Health aspects in times of quarantine due to COVID -19 in the Peruvian population, in 2020.

Health aspects		n	%
Presence of clinical symptoms related to COVID-19 (dry cough, fever, sore throat, general malaise, you do not perceive odors or taste food and / or have difficulty breathing)	Yes	112	10.5%
	No	952	89.5%
Any member of the family with whom you live or frequent is a confirmed carrier of COVID-19	Yes	12	1.1%
	No	1052	98.9%
Sensation generated by social isolation	Altered	940	88.3%
	Not altered	124	11.7%
Stress	Yes	600	56.4%
	No	464	43.6%

Table 3. Economic aspects and presence of clinical symptoms related to COVID-19 in quarantine times due to COVID-19 in the Peruvian population, in 2020.

Economic aspects		Presence of clinical symptoms related to COVID-19			
		Yes		Not	
		n	%	n	%
Food today is enough to support your family	< 7 days	83	74.1%	660	69.3%
	≥ 7 days	29	25.9%	292	30.7%
Money today is enough to support your family	< 2 weeks	62	55.4%	542	56.9%
	3 weeks to 1 month	31	27.7%	208	21.8%
	> 1 month	19	17.0%	202	21.2%

Table 4. Economic aspects and feelings generated by social isolation in times of quarantine due to COVID-19 in the Peruvian population, in 2020.

Economic aspects		Sensation generated by social isolation			
		Altered		Not altered	
		n	%	n	%
Food today is enough to support your family	< 7 days	651	69.3%	92	74.2%
	≥ 7 days	289	30.7%	32	25.8%
Money today is enough to support your family	< 2 weeks	537	57.1%	67	54.0%
	3 weeks to 1 month	209	22.2%	30	24.2%
	> 1 month	194	20.6%	27	21.8%
More orderly handling of expenses during quarantine	Agree	788	83.8%	107	86.3%
	Neither agree nor disagree	99	10.5%	11	8.9%
	In disagreement	53	5.6%	6	4.8%
Financial problems to buy basic necessities (food and medicine)	Many	190	20.2%	26	21.0%
	Some	352	37.4%	42	33.9%
	Few	398	42.3%	56	45.2%
Family benefited by a government bond or subsidy	Not	737	78.4%	109	87.9%
	Yes	203	21.6%	15	12.1%

Table 5. Economic aspects and stress in times of quarantine due to COVID-19 in the Peruvian population, in 2020.

Economic aspects		Stress			
		Yes		**Not**	
		n	**%**	**n**	**%**
Food today is enough to support your family	< 7 days	439	73.2%	304	65.5%
	≥ 7 days	161	26.8%	160	34.5%
Money today is enough to support your family	< 2 weeks	390	65.0%	214	46.1%
	3 weeks to 1 month	103	17.2%	136	29.3%
	> 1 month	107	17.8%	114	24.6%
Expense Management	Agree	500	83.3%	395	85.1%
	Neither agree nor disagree	57	9.5%	53	11.4%
	In disagreement	43	7.2%	16	3.4%
Financial problems to buy basic necessities	Many	153	25.5%	63	13.6%
	Some	246	41.0%	148	31.9%
	Few	201	33.5%	253	54.5%
Family benefited by a government bond or subsidy	Not	457	76.2%	389	83.8%
	Yes	143	23.8%	75	16.2%

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DISCUSSION

Coronaviruses are common infectious agents in many species of animals such as camels, cows, cats, and bats. In rare cases, they can infect people and then spread among them. However, COVID-19 is a new virus that causes a potentially serious respiratory illness in humans and was first discovered in Wuhan City, Hubei Province, China. From here, thousands of cases have been detected and in a growing number in other countries. In the early stages, the epidemic doubled in size every 7.4 days. At the end of January, the World Health Organization (WHO) declared the outbreak a public health emergency of international concern.

The virus is spreading from person to person by direct contact with respiratory droplets of infected persons transmitted directly or by hands or fomites in contact with the mucosa of the recipient[22].

Peru is facing a quarantine period as a result of the pandemic caused by COVID-19, so it is necessary to know the economic and health status of the population to cope with this stage.

In the economic sphere, the respondents indicate that they agree that they have managed their expenses in a more orderly manner (84.1%) and that they have resources to face the quarantine (47.5%); however, 20.1% disagreed about the economic means. Likewise, few have had financial problems to have necessities (42.7%), although 20.3% have had many financial problems. Food generally lasts

less than 7 days (69.8%) and money lasts less than two weeks (56.8%). They also consider that social bonds or programs are not enough to subsist with the family (65.8%), in the last week they have not resorted to loans (64.1%), except for 35.9% who did need it and many have had relatives or friends with money problems (39.4%). A high percentage have not benefited from subsidies or bonuses (79.5%), but 20.5% obtained the subsidy. In contrast, the Diario Gestión report shows that 59% of participants do not have food supply problems and 53% maintain that they will pass this social isolation without problems[21]. Açikgöz Ö. and Günay A. study observed that this COVID-19 pandemic has serious effects on employees and financial markets[10]. Although the population can support itself economically for a period of quarantine, the money may not be enough if this situation spreads, so it would be essential that the government prevent this context to provide alternative solutions since many have been unemployed or have no bonds.

Concerning personal or family health, a large part of those surveyed referred that no family member has presented symptoms related to COVID-19 (89.5%) and has not had or had contact with a confirmed carrier of COVID-19 (98.9%), although 1.1% have had contact. The feelings generated by the quarantine are generally altered (88.3%) including concern, anxiety, fear, and helplessness. Stress was seen in 56.4%. Likewise, Roy's research detected high levels of anxiety, concern about COVID-19 (80%), difficulty

sleeping (12.5%), paranoia about the acquisition of COVID-19 infection (37, 8%), and anxiety related to social networks (36.4%) (9). In the Diario Gestión, the participants indicated feelings such as worry (64%) and stress (31%)[21]. For this reason, subjects must engage in recreational activities and breathing and relaxation techniques to reduce anxiety and stress.

When looking at the economic indicators according to the health of the population, it was obtained that the economic aspects such as food available for less than 7 days, having money for less than 2 weeks, low-cost management, and economic problems to buy necessities. These generate stress perhaps because by not being able to work and seeing that the expenses increase when the quarantine is not completed and the population becomes more stressed. The feelings of uncertainty about the resume of activities pre-social isolation. In addition to this, possibly many of the families live from day to day and do not have savings, which affects them even more in the face of the situation.

Limitations

Among the limitations for carrying out the research are the fact of not knowing how to use an application to fill out the survey given that the survey was filled in virtually, the time factor, among others.

CONCLUSION

From the results, it is concluded that there are economic problems to buy food and medicine, that food is enough for only 7 days, money is only enough for two weeks, the vouchers are few to acquire the basics and most of the family has not been benefited by any bonus. In terms of health, most of them have a feeling altered by social isolation and present stress from quarantine.

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