INTRODUCTION

From a global perspective, the coronavirus pandemic (COVID-19) has triggered unprecedented alterations, where a latent threat has been found in the population in their emotional state that generates a negative impact that compromises both their health and how to prevent it. The health crisis that exists worldwide due to the COVID-19 pandemic has triggered multiple factors that compromise the emotional state of the general population, where high rates of depressive symptoms, anxiety and stress pictures are evident due to the confinement and self-quarantine of the population.

Although, not only have these factors been seen in the population, but they are also prone to experiencing loneliness, anguish, sadness and worry generated by quarantine and isolation in their homes since sometimes some people tend to live alone in their homes and experience these factors mainly. All these factors have not only been caused by the COVID-19 outbreak in the population, but are also due to the preventive measures that were taken by the government. COVID-19 will play a fundamental role in the implications that not only affect people’s physical well-being, but also their psychological well-being.

Therefore, the impact of the COVID-19 pandemic is one of the causes that generate a very high emotional burden, where the person does not tolerate certain prevention measures, isolation and quarantine makes their mental health more vulnerable.

In a study in Spain, with 3480 participants aged 18 years old and over, its results showed that in females 18.7% presented depression, 21.6% anxiety and 15.8% present post-traumatic stress, concluding the female sex with health problems, presenting symptoms related to COVID-19 and having a close relative infected, make her more vulnerable to presenting these factors compromising her mental health.

In a study conducted in Australia, with 3770 study participants, they stated that 21.6% of the participants had moderate to highly severe depression, 28.6% moderate to highly severe anxiety and 28% moderate to highly severe stress,
although between 22% and 29% of the participants of both sexes presented symptoms of depression, anxiety and stress, although the majority were seen more in sex feminine than masculine.

In a study carried out in Turkey, with 2076 participants who are health workers, their results stated that 86.9% of health workers were afraid of infecting their relatives with COVID-19 and due to this, they manifested a high index of depression, anxiety and stress, they infect the members in their homes.13

Therefore, the objective of the research is to determine the emotional state due to the COVID-19 pandemic in people who reside in a vulnerable area in North Lima.

Therefore, its hypothesis in the research work is that the emotional state is presented negatively due to the isolation and quarantine of the population caused by the COVID-19 pandemic.

**METHODOLOGY**

**Type of Research**

In the present research work, due to its properties and the way of collecting data according to the present variables, it is a quantitative approach, with a descriptive, non-experimental and cross-sectional methodological design.14

**Population**

The study covered 306 study participants from the ages of 17 to 85 who live in a Human Settlement in the Carabayllo district. Also, the Sociodemographic data of the population is shown in Table I.

**Inclusion criteria**

- People ranging in age from 17 to 85 years old.
- People who are voluntarily present in the research work.
- People residing in the Carabayllo district.
- People who signed the consent informed ACTAN°050-2020-CE/UMA UNIVERSIDAD MARIA AUXILIADORA.

**Technique and instrument**

The technique for the study was carried out using the DASS-21 questionnaire or data collection instrument, which aims to measure the emotional state of the COVID-19 pandemic in people residing in a vulnerable area of North Lima.

The depression, anxiety, and stress scale (DASS-21), each of the three DASS scales contain 14 items, divided into sub-scales of 2 to 5 items with similar content. The depression scale assesses dysphoria, hopelessness, devaluation of life, self-loathing, lack of interest or participation, anhedonia, and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and the subjective experience of anxious affect. The stress scale is sensitive to levels of non-specific chronic arousal. It evaluates the difficulty to relax, the nervous excitement and the discomfort, agitation, or irritation, over-reactivity and impatience. It consists of 4 answer alternatives, 0 “not at all”, 1 “sometimes”, 2 “many of the time” and 3 “most of the time” to rate the degree to which they have experienced each state during the past week. To obtain the final score of the DASS-21, the total score obtained must be multiplied by two (data x2).14,15

The validity of the instrument to measure emotional state was determined based on the exploratory factor analysis technique. The Kaiser-Mayer-Olkin sample adequacy measure obtained a coefficient of 0.962 (KMO > 0.5), while the Bartlett sphericity test obtained significant results ($X^2$ approx. = 7050.468; $gl = 210$; $p = 0.000$).

The reliability of the instrument was determined with the Cronbach’s Alpha statistical test, in which a coefficient of 0.977 ($\alpha > 0.8$) was obtained for the items ($i = 21$).

In this research work, the depression, anxiety, and stress scale (DASS-21) will be used as a data collection instrument. The data collection processing was through the questionnaire in people residing in a vulnerable area of North Lima, in which the matrix for the database was carried out in the SPSS Statistics Base 26.0 program, in which the data analysis and processing to make tables and figures to later be described and interpreted in results and discussions, respectively.

**Place and application of the instrument**

The questionnaire was carried out to measure the emotional state due to the COVID-19 pandemic in people residing in a vulnerable area of North Lima, in which it was carried out in the district of Carabayllo, in the Las Malvinas de Carabayllo Human Settlement.

Coordination was made first with the directive members for the permits to carry out the research, then the corresponding permission for each head of household explaining about the study, also knowing what is going to be carried out.

The questionnaire only took approximately 15 minutes to fill out, and at the time of collecting the surveys, we concluded that people supported us in the study, generating an atmosphere of trust and satisfaction in the study.

**RESULTS**

In Figure 1 and Table 1, we observe the emotional state, where 186 (60.8%) of the participants have a low emotional state, 92 (30.1%) have a high emotional state and 28 (9.1%) have a medium emotional state.
In Figure 2, we can see that the female sex presents a low emotional state 103 (55.4%) than the male sex 83 (44.6%), at the medium level the female sex 15 (53.6%) and the male sex 13 (46.4%) and a high level 53 (57.6%) female and 39 (42.4%) male.

In Figure 3, the emotional state is observed about its dimensions, where we can see that in the depression dimension, 94 (30.7%) of the population have extremely severe depression, followed by 88 (28.8%) with normal depression, 59 (19.3%) with moderate depression, 38 (12.4%) with mild depression and 27 (8.8%) with severe depression, in terms of their anxiety dimension, we observe that 134 (43.8%) of the population presents extremely severe anxiety, 60 (19.6%) with normal depression, 46 (15%) with moderate depression, 38 (12.4%) with mild depression and 28 (9.2%) with severe depression and in its stress dimension, we observed that 142 (46.4%) of the population presented normal stress, 64 (20.6%) severe stress, 44 (14.4%) extremely severe stress, 28 (9.2%) moderate stress and 29 (9.5%) mild stress.

In Table 2, we observe the relationship between the emotional state and the level of education in people residing in a vulnerable area of North Lima, which was determined with Pearson’s chi-square test ($\chi^2$). The level of significance of the test obtained a value of 0.73 ($p > 0.05$) ($\chi^2 = 40.627$; d.f = 12). Therefore, an association hypothesis is not rejected, for which there is statistical data that verify the relationship between the emotional state and the level of education. In which, we can interpret that people with university education complete 68 (73.9%) have a low emotional state, followed by secondary education complete 45 (58.4%), university education incomplete 28 (66.7%), secondary education incomplete 24 (55.8%) and people with primary education complete have a high emotional state 14 (48.3%).

DISCUSSIONS

The research work has emphasized the emotional state from a focus on mental health in the general population, which seeks to carry out preventive strategies that allow the population to maintain or improve at a psycho-emotional level that allows them to cope with the situation in which they are undergoing quarantine and isolation because of the COVID-19 pandemic.

The results reflected that the emotional state of the population is low, this is because many of the population have not been able to cope with the COVID-19 pandemic since last year, where the risk of being infected has impacted at the level of mind them, where factors such as depression, anxiety and stress that are the main ones in affecting their emotional state, since being in quarantine and isolation make people unable to face this situation in the most appropriate way. They argue that depression, anxiety and stress are factors that compromise people’s mental health, where it makes them vulnerable to any situation that they cannot confront, and due to this, they are prone to have negative ideas in themselves and can hurt themselves by not knowing how to deal with it.

Regarding sex, it is observed that the female sex presents a lower emotional state than in the male sex, this is because the psycho-emotional burden in the female sex is highly compromised not only because the COVID-19 pandemic affects their daily routines and puts their well-being at risk, but also affects due to factors such as infected or deceased family members, the alarming increase in positive cases, makes the symptoms of anxiety and stress mainly become more noticeable. They argue that women are more susceptible to their emotional state is altered, where factors such as apathy, sadness, despair, pessimism and low self-esteem, are indications that the person presents high depressive symptoms since when more depression is serious, anxiety and stress begin to rise, complicating their physical and mental well-being11.

Regarding its dimensions, it can be observed that depression and anxiety are highly compromised, this is because as a result of the health crisis caused by the COVID-19 pandemic, since, during confinement at home, people have problems such as Insomnia, changes in appetite and physical activity, feelings of frustration, guilt, loneliness and helplessness and lack of courage, all of which have caused anxious depressive symptoms in the population and this can be considered aggravated causing obsessive and hypochondriacal behaviours. They argue that quarantine and isolation have generated difficulties in people, factors such as inactivity, sedentary lifestyle, inadequate food intake, insomnia, fatigue and worry, since all this manifests itself because depressive symptoms are present and because of this these factors are becoming more noticeable12.

CONCLUSIONS

It is concluded that virtual medical care should be carried out for the mental health care of vulnerable people.

It is concluded to carry out strategies to promote mental health, such as relaxation activity, healthy diet, adequate water intake, daily breaks and maintaining sociable contacts, since they are important to reduce anxiety, depression, and stress in people.

It is concluded that it is necessary to intervene in public and mental health to improve the perceptions of the person of risk to COVID-19, the concern for loneliness and improve the state of mind so that they improve the person in a positive way.

The limitation in the research work is the few studies that have been carried out in our country since in these times
mental health is what is being prioritized more because over time it can generate conflicts and consequences in people due to the consequences by COVID - 19.

This study will be beneficial because there have been no studies where the research was raised and the instrument details important points to know how the population is at a mental level due to COVID - 19.

Conflict of Interest
The authors declare no conflict of interest.

Funding Source
This research work does not have Funding Sources

ACKNOWLEDGEMENT
The authors acknowledge the immense help received from the scholars whose articles are cited and included in references of this manuscript. The authors are also grateful to authors/editors/publishers of all those articles, journals, and books from where the literature for this article has been reviewed and discussed.

Author’s Contributions
Rosa PS: Conceived and designed the analysis, wrote the paper and translation.
Hernan MS: Collected the data, Performed the analysis.
Eduardo MS: Contact the people for the survey-taking.
Anika RA: Contributed data and analysis tools.

REFERENCES

Table 1: Sociodemographic data of the people residing in a vulnerable area in North Lima

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Frequency (f)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>306</td>
<td>100%</td>
</tr>
<tr>
<td>Minimum - Maximum</td>
<td>17 – 85</td>
<td>38.83</td>
</tr>
<tr>
<td>Level of Education</td>
<td>8</td>
<td>2.6</td>
</tr>
<tr>
<td>No Education</td>
<td>29</td>
<td>9.5</td>
</tr>
<tr>
<td>Primary education complete</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Primary education incomplete 15 4.9
Secondary education complete 77 25.2
Secondary education incomplete 43 14.1
University education complete 92 30.1
University education incomplete 42 13.7
Marital Status Frequency (f) Percentage (%)
Single 113 36.9
Married 67 2.9
Cohabitting 104 34.0
Widower 22 7.2
Type of Family Frequency (f) Percentage (%)
Nuclear 80 26.1
Single parent 70 22.9
Extended 51 16.7
Expanded 32 10.5
Reconstituted 47 15.4
Family equivalent 5 1.6
Single person 21 6.9
Occupancy Condition Frequency (f) Percentage (%)
Has stable job 73 23.9
Has temporary job 177 57.8
Does not work 56 18.3

**Emotional State**

![Emotional State Graph](image1)

**Emotional State regarding to Sex**

![Emotional State by Sex Graph](image2)

**Figure 1:** Emotional state due to the COVID-19 pandemic in people residing in a vulnerable area of North Lima.

**Figure 2:** Emotional State due to the COVID-19 pandemic in relation to sex in people residing in a vulnerable area of North Lima.
Figure 3: Emotional State in relation to its dimensions due to the COVID-19 pandemic in people residing in a vulnerable area of North Lima.

Table 2: Emotional state due to the COVID-19 pandemic in relation to the level of education in people who reside in a vulnerable area of North Lima.

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Emotional State</th>
<th>Total</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Education</td>
<td>Count</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>% within Education Level</td>
<td>37.5%</td>
<td>25.0%</td>
<td>37.5%</td>
<td>100.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary education</td>
<td>Count</td>
<td>11</td>
<td>4</td>
<td>14</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>complete</td>
<td>% within Education Level</td>
<td>37.9%</td>
<td>13.8%</td>
<td>48.3%</td>
<td>100.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary education</td>
<td>Count</td>
<td>7</td>
<td>0</td>
<td>8</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>incomplete</td>
<td>% within Education Level</td>
<td>46.7%</td>
<td>0.0%</td>
<td>53.3%</td>
<td>100.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary education</td>
<td>Count</td>
<td>45</td>
<td>16</td>
<td>16</td>
<td>77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>complete</td>
<td>% within Education Level</td>
<td>58.4%</td>
<td>20.8%</td>
<td>20.8%</td>
<td>100.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary education</td>
<td>Count</td>
<td>24</td>
<td>2</td>
<td>17</td>
<td>43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>incomplete</td>
<td>% within Education Level</td>
<td>55.8%</td>
<td>4.7%</td>
<td>39.5%</td>
<td>100.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>University education</td>
<td>Count</td>
<td>68</td>
<td>1</td>
<td>23</td>
<td>92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>complete</td>
<td>% within Education Level</td>
<td>73.9%</td>
<td>1.1%</td>
<td>25.0%</td>
<td>100.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>University education</td>
<td>Count</td>
<td>28</td>
<td>3</td>
<td>11</td>
<td>42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>incomplete</td>
<td>% within Education Level</td>
<td>66.7%</td>
<td>7.1%</td>
<td>26.2%</td>
<td>100.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>186</td>
<td>28</td>
<td>92</td>
<td>306</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>% within Education Level</td>
<td>60.8%</td>
<td>9.2%</td>
<td>30.1%</td>
<td>100.0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chi-square tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymptotic significance (bilateral)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson's Chi-square</td>
<td>40.627</td>
<td>12</td>
<td>.000</td>
</tr>
<tr>
<td>Likelihood ratio</td>
<td>41.981</td>
<td>12</td>
<td>.000</td>
</tr>
<tr>
<td>Linear by linear association</td>
<td>9.178</td>
<td>1</td>
<td>.002</td>
</tr>
</tbody>
</table>

N of valid cases: 306

a. 8 cells (38.1%) have expected a count less than 5. The minimum expected count is .73.