

DOI: <https://doi.org/10.24297/jssr.v17i.9084>

The impact of a public health environmental contingency (COVID-19) on Stress and a General Health of workers from different industrial sector.

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Abstract.

The problems that arise in society, in relation to health affect workers to some extent, this is the case of the COVID -19 pandemic, which has somehow affected organizations in general, such as: in their profits, in the reduction of personnel, in adapting new forms of work if required, and in activating health protocols to avoid the spread of it in its workers, this health situation that is present worldwide has had a great impact on people from the psychological aspect, it is for this the interest to carry out this research, with the purpose of knowing the perception of the workers of different organizations in this pandemic situation, that is to say, how it has affected them in relation to stress and therefore their general health, the instruments applied were: Perceived Stress Scale (10 items) and the Golberg General Health Questionnaire. The results of this work gave us a Coronbach alpha of $\alpha = .85$ of reliability which indicates that this study is reliable, likewise 60% of the population report that they have felt stress due to COVID-19, as well as 42% of the population state that they have perceived factors or symptoms that affect their mental health to some degree.

Keywords. Health, Stress, workers, organization, environmental contingency.

Introduction

Nowadays, organizations and society itself live in constant change since new forms of work, the processes that have to be implemented in organizations, as well as the different ways of thinking of workers in relation to their chronological age, meaning, the different types of generations that interact in organizations; this encourages the generation of a basic psychosocial phenomenon in which every human being constantly lives with, this phenomenon is Stress, it manifests itself in people through a stimulus and it causes an alteration since the person perceives that the demands of this stimulus exceed their coping capacity and as a response manifests tension and shows it in different ways, which can be physical, psychological or emotional.

Another effect produced by stress is that people can perceive that their health has been affected, therefore they do not develop favorably either in their daily activities nor in their work, in addition to the constant changes that society is currently experiencing such as new forms of work, the processes that have to be implemented in organizations, as well as some other not very frequent affect the organization in some way, in this case we can mention the pandemic situation generated by the SARS-CoV-2 virus that causes COVID-19, which has affected humans and in some cases can lead to death.

This health contingency, which the World Health Organization declared as a pandemic (March 11, 2020), made the organizations take preventive measures to avoid or minimize some type of contagion, this leads to a certain type of perception in workers and at point in time their health may be affected.

In this sense, the WHO defines Health as "a state of complete physical, mental and social well-being and not only the absence of affections or diseases", said quote comes from the Preamble of the Constitution of the World Health Organization, which was adopted by the International Sanitary Conference, held in New York signed on July 22, 1946, and entered into force on April 7, 1948, said definition has not been modified since 1948.



On the other hand, Briceño-Leon (2000), mentions that "health is a synthesis; it is the synthesis of a multiplicity of processes, of what happens with the biology of the body, with the environment that surrounds us, with social relations, with politics and the international economy".

Moreover, Moreno takes up the definition of Oblitas (2010) which considers health as physical, psychological and social well-being that does not necessarily imply the absence of alterations and diseases, but includes different degrees of vitality and adaptive functioning, it is also considered a social phenomenon that can only be explained by taking into account highly complex structures, such as human behaviors, where variables with strong interaction occur between them (Moreno, 2008 in Mebarak and Suárez, 2016).

With this, it is clear to us that depending on the perspective and even academic education a person is observed, is how it can be considered whether they are healthy or unhealthy, this is that if we speak from the medical perspective and the person does not present any symptoms, then they are considered healthy. Likewise, from the psychological perspective if by the time of their assessment they do not present any symptoms or trait of mental illness, they will get a positive result, otherwise it can happen from the perspective of society since if a person does not comply with the beliefs, values, or customs of the culture in which they live, they can be considered as an unhealthy person.

As Alcántara (2008) mentions, the idea of health also responds to a historical condition, since at each moment, a certain society may have a particular vision of it. In fact, each era corresponds to a certain unrepeatable structure of power, techniques, ideas, values, customs, beliefs and norms. So, the notion of what is understood by health is a social product or construction, or as Emile Durkheim would say (in Ritzer, 2002), "a social fact that can be treated as a thing and is external and coercive to the individual"

Considering the importance of having knowledge of health in workers, it is necessary to speak of mental health since it cannot be separated due to the fact that it is immersed within this concept of health, therefore returning to the definition of the WHO, which mentions that "Mental health covers a wide range of activities directly or indirectly related to the component of mental well-being included in the definition of health given by the WHO: «a state of complete physical, mental and social well-being, and not only the absence of affections or diseases». It is for this reason that these different activities must be taken into account so that the individual is in favorable mental health.

Moreover, attention must be paid to the fact that when talking about mental health it refers to different mental disorders that can be manifested in people and therefore it will be categorized as poor mental health, otherwise, if there are no symptoms of mental disorder, then they can be categorized as mentally healthy, without taking into account that these symptoms may be latent in the individual. For this reason, the role that mental health workers must perform is to promote better lifestyles where a balance is found in the different factors involved in mental health.

Therefore, talking about mental health should consider the organizations where people develop a job function, since as Hespanhol (2018) mentions, the new rules and organizational structures, such as globalization, interdependence, automation and the technological evolution in the mental health of the worker, it is asserted that, regardless of the causal factors, the work environment is a conducive space for education and maintenance of mental health, therefore this type of organizational changes can affect the worker and it commonly manifests as stress.

Stress

This effect on health is the result of the stress that has been generated in organizations, which manifests itself in people through a stimulus and this causes an alteration since the person perceives that the demands of this stimulus exceed their ability to cope and as a response manifests tension, in which there is a different symptomatology, which can be physical, psychological or emotional, this results in a deterioration in the perception of workers' health. The World Health Organization (WHO) defines stress as the set of physiological reactions that prepares the body for action. On the other hand, Lazarus and Folkman (1991, in Gutiérrez, 2008), define stress as a "set of particular relationships between the person and the situation, when the situation is

valued by the person as something that surpasses or exceeds their resources and that endanger their personal well-being”.

Stress is necessary in people because it helps in the process of adaptation, self-regulation, as well as it can be a motivator to achieve goals. It should be mentioned that this stressful situation is not necessarily the same for everyone, meaning, that each person based on their perception will determine if it is stressful or not, in this sense, as mentioned by López Santana (2014) “it is an organism’s response to stimuli that tend to break its balance, of which these responses can be psychosocial, physical or a biological response, it can be a systemic response, moreover the stressful situation depends on the novelty of the situation, lack of information, predictability, uncertainty, duration of the stress situation”.

This phenomenon must be adequately addressed since the effects on people are very varied, it can range from affectations in the body (Leal, 2006) such as sweating, palpitations, headaches, back pain, chronic fatigue syndrome, hypertension, colitis, ulcers, loss of appetite, respiratory diseases, among others. Psychologically it can cause depression, anxiety, etc. (Gutiérrez, 2008). Secondly, the effect in relation to their work can be manifested in the loss of creativity, loss of motivation, decreased effectiveness, decreased quality of life.

On the other hand, if an organization leaves aside attention to this phenomenon, it would be affected in low productivity from the workers, interpersonal conflicts, high turnover, as well as deterioration in communication will occur and therefore the work environment will be deficient. In this sense, it is important that special attention must be paid to this phenomenon in organizations so that their staff works with the appropriate levels of stress and do not affect the health of any of them, since as the WHO defines’ “health is a state of complete physical, mental and social well-being and not only the absence of affections or diseases” (Alcántara, 2008).

As Gutiérrez (2004, in Fernández, 1999) retakes, which mentions that a good health allows the adequate development of work activity and constitutes the basis for achieving the necessary well-being at work that allows the development of physical and intellectual capacities, since it encourages the person to remain satisfied, healthy and full”. It is in this sense that the purpose of this project is to know the impact on stress levels that an environmental public health contingency exerts on people who perform a job and how their health is reflected by this, as well as to capture an intervention proposal to reduce the stress levels that workers may experience in said environmental contingency, which is specifically the SARS-CoV-2 virus that causes COVID-19.

Stress is a psychophysiological reaction that is triggered by a feeling of physical or emotional tension that can be caused by a thought or action of annoyance, anger, frustration or anxiety. This reaction of demand or challenge that is expressed is positive as long as it warns of a risk or danger situation or to support a meeting deadline that is imperative to achieve, in other words: a mild stress can help as a motivator. The response to being adaptive is known as eustress. However, it can arise from exhausting and wearying demands or pathological (distress).

There are three different types of stress.

- Routinary stress.
- Provoked stress.
- Traumatic stress that leads to PTSD.

Routinary stress, also known as eustress, is related to everyday situations that normally support the realization of activities properly and on time than in causing psychophysiological problems. It is when, for example, it is necessary to deliver a job and it is on a deadline, it can also be due to an excess on traffic to get to a place, even as a motivator to achieve higher goals in a company. Others are usually placed to carry out tasks in a relatively short time, it can even be applied to oneself. It is normally used in a temporary way as an evaluation or pressure at work.

Provoked stress is the most exhausting type since it occurs due to a sudden and negative change in the way of living. Within the normality it is caused by a change of job or the loss of it, or a divorce, or an accident or illness.

Post-Traumatic Stress Disorder (PTSD), there are very specific criteria for acute stress disorder or PTSD. The DSM-5 refers that people with this problem have been exposed to situations of real death, or really significant threats,

serious injuries or rape. According to NOM 0035, the first three are our responsibility, whether they are on the same individual or with colleagues. When three or more symptoms are present, they tend to show emotional numbness (Ozer, 2003).

When talking about PTSD it is important to consider that the worker requires psychological support. Traumatic situations lead to amnesia that can be partial, meaning that is over a certain part of the event or total, which occurs very rarely. They may appear to be in shock. Workers with PTSD have witnessed the event in co-workers in the case of death. When it comes to work accidents, they may have been part of it or be in the presence of the act. The consequences that they can report have to do with a compulsive need to talk about the event, recurrent memories with anguish, distressing dreams of the event that present disorders of it. A persistent negative state of mind unable to notice anything positive around you. Also, flashbacks or in other words: dissociative reactions, concentration problems or startled behaviors, physiological responses to the memory. These alterations lead to immediately discomfort after the event and a persistence of three days to one month to meet the criteria for the disorder. As a last fact that should be mentioned: it is important to emphasize that they must have remained in person, with the exception of workers who work through video cameras and who can be affected in the same way in the presence of these acts (Navinés, 2010).

Stress is composed of a variety of symptoms which can be confused with various diseases, the symptoms are mainly related to psychological and psychosomatic problems, it has to do closely with problems such as anxiety and depression. The main symptoms that can be found in this health problem are remembrance of the trauma (flashbacks), hallucinations, extreme anxiety when coming into contact with people, places or any circumstance that recalls the event. Palpitations, shortness of breath, and elevated sweat secretion each time the triggering event is recalled. Inability to remember details, feeling psychically distant, numb and paralyzed before any normal emotional experience, losing interest in hobbies and entertainment, finally, showing signs of hyperactivity.

Laboral stress should be considered as the relationship between the company and the worker. It is the result of a series of transactions that the employee establishes with his work environment. When the worker perceives excessive labor demands on his ability to adapt or compete, his health and productivity can be reduced, the consequence is a complex adaptation process determined by the work environment of the department or company. Here it is important to have a transformational leadership that allows the approach to the problem that may be presenting.

The stress due to COVID 19 is not only laboral, but it has affected people's lives from having to take sanitary measures to which they were not used to, in addition to losing a series of privileges that were not even contemplated, such as the attendance to cinemas, stadiums, theaters even weddings, gatherings with friends, family gatherings. Creating a feeling of isolation that leads to an anxiety crisis, depression, domestic violence, exhaustion and fear, the feeling of confinement or lockdown of daily activities should be perceived as a problem to keep in mind within organizations, since tele-work can bring a series of damages or benefits in the labor area.

As part of the pandemic, it can be ensured that the alterations that it causes to the health of both infected and non-infected people generate a wave of variations in health that alter it, leading to the death of some patients, which generates the second wave of the pandemic that produces alterations in daily life such as confinement, alterations in the workplace as already mentioned and alterations in health since economic conditions are going downwards, conditioning that only urgent must be addressed. As a result of the second wave there are changes in personal conditions related to chronic degenerative diseases that people suffer, not paying the needed attention to them, generating the third wave of the pandemic, which conditions an altered state of health that predisposes an increase in the morbidity and mortality of the pandemic disease since having uncontrolled comorbidities increases the possibility of dying. Due to the aforementioned, it conditions a fourth wave of the pandemic that is about psychic trauma, mental illness, economic disorder and Burn-out, situations in which homeostasis is altered (Pfefferbaum, 2020).

Materials and Methods

This study is part of a broader investigation on how COVID-19 affects stress and health workers from different companies in the state of Nuevo León, México, the result shown in this work are the preliminary ones that were obtained from a large sample.

Desing.

This research was a correlational Exposfacto study, which was carried out in organizations with different business turns

Participants.

The sample that the instruments were applied was 237 workers from different companies, of which 62.9% are female and 37.1% male, the age range is from 18 to 54 years, having an average age of 29 years, the sample was divided into two groups; the first one is the administrative group, which is made up of Directors, department or floor managers, and the second group was the operative group, it is made up of security guards, quartermaster, technicians. The inclusion criteria to answer these instruments was that they must be workers, either plant or contract, with at least two years of belonging to the organization that is attached, they can be of any gender and hierarchical position.

The turns of the organizations in which the people who participated in this research work were: maquiladoras, metalworking, assembly, information technology, automotive, sales, retail, educational, etc.

Materials.

For this research, the following instruments were used: the Perceived Stress Scale was applied, which is one of the most widely used and it measures people's perception of life situations as stressful, this scale has been adapted to Mexican culture by González and Landero, its approximate application time is 8 -10 minutes, it is made up of 14 items of which there are questions about the stress levels experienced in the last month, its type of responses are five Likert-type options, where 0 is (never), up to 4 (very often, items 4, 5, 6, 7, 9, 10 and 13 have an inverse score. The score on this scale is from 0 to 56, which indicate that the higher the score is, the higher the stress perception (González and Landero, 2007 in Torres-Lagunas).

The second instrument used is the General Health Questionnaire whose author is David Goldberg, which helps us to evaluate self-perceived health, this is the evaluation that the individual makes of their general state of well-being, especially with regard to the presence of certain emotional states is answered using a Likert-type scale of 0 to 3 points, in which the total score was calculated by adding the scores obtained in all the statements of the scale (as the scores increase, the level of mental health decreases), (García, 1999).

Process.

The application of these instruments it was agreed with students of the Bachelor of Psychology career that they must apply them to employees of different hierarchical positions, these organizations are where these students are doing their Propedeutics course.

Analysis of data.

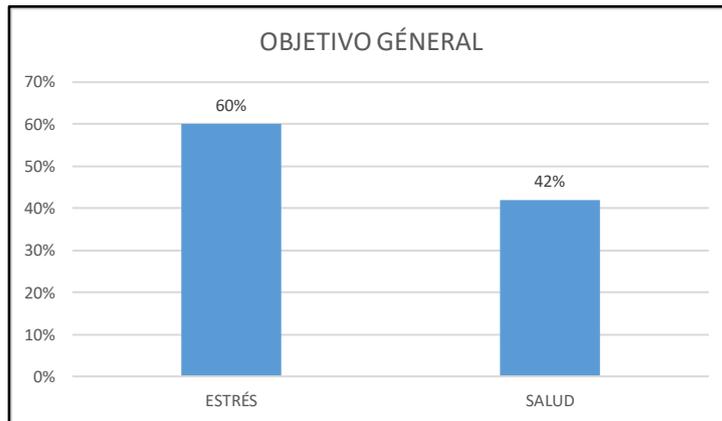
A database was created with the answers provided by the workers, said database was subjected to analysis using the statistical package SPSS Statistics 25, this to obtain the internal consistency $\alpha = .867$, descriptive analysis and cross tables to determine relationships between variables.

Results.

The results obtained from this research will respond to the general objective and specific objectives from one to five, with the last specific objective remaining pending since it was reserved for the final results of this research. It should be noted that this study was divided into three stages where the first one is a pilot study, the second stage are preliminary results and the last or third stage are the final results.

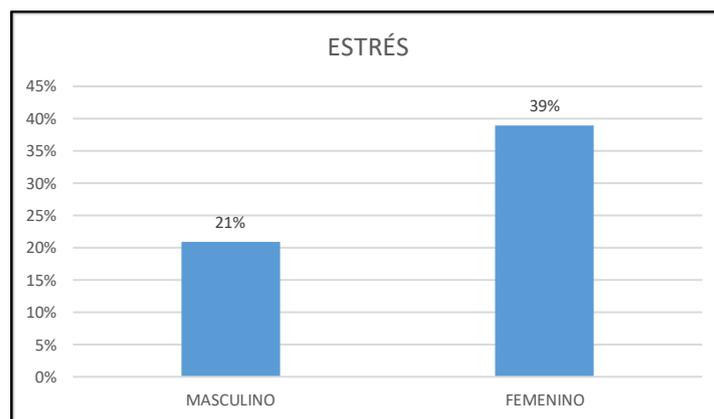
Next, the preliminary results of this study will be described, responding to the **General Objective**. Determine the impact of the environmental contingency in terms of stress and general health of workers from different

business sectors located in the state of Nuevo León, which allows establishing an intervention strategy for affected organizations.



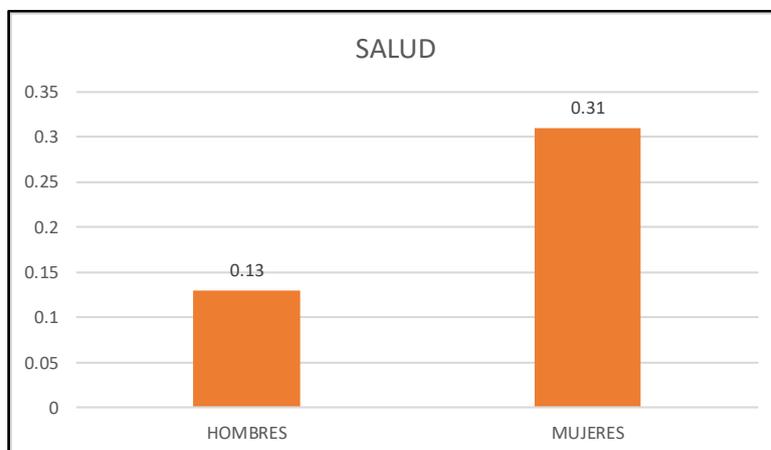
As seen in the graph, from the total population, at least 60% of the general population report having felt stress. On the other hand, from the total population at least 42% have perceived factors or symptoms that affect their mental health to some degree.

Responding to **specific Objective 1**: Identify the perception of stress in men and women from different organizations located in the state of Nuevo León, facing the contingency of COVID-19, it was found,



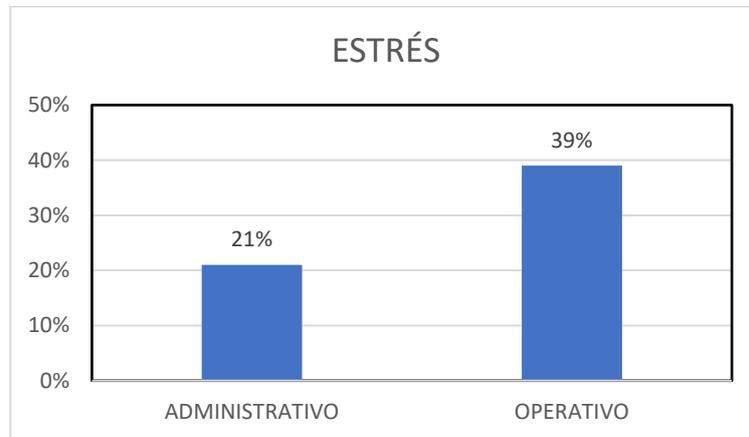
As seen in the graph, from the total population, 21% of men report having felt stress, on the other hand, from the total population, 39% of women report having felt stress.

Specific Objective 2: Identify the perception of general health in men and women from different organizations located in the state of Nuevo León in the face of the COVID-19 contingency.



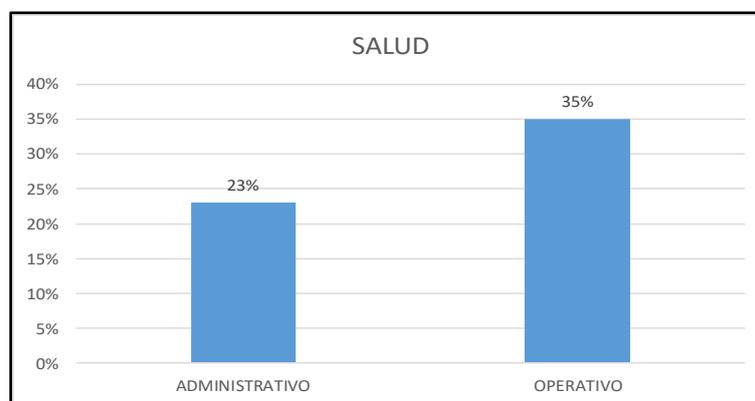
As seen in the graph, from the total population, 13% of men have perceived factors or symptoms that affect their mental health to some degree. On the other hand, from the total population, 31% of women report the same case.

Specific objective 3: Determine the perception of stress in workers with administrative functions (middle and senior managers) compared to workers with an operational position, derived from the COVID-19 contingency.



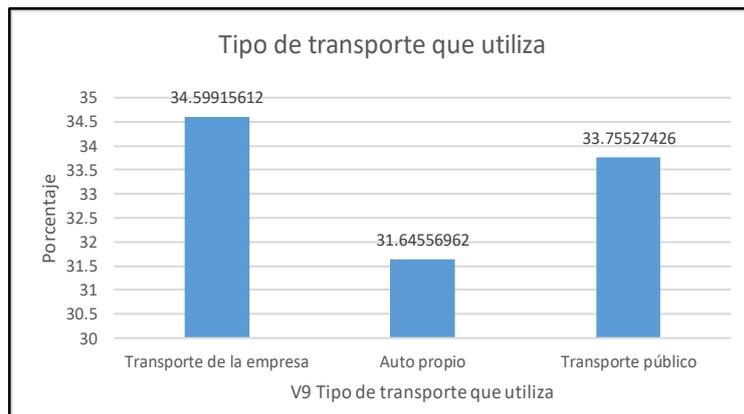
As seen in the graph, from the total population, 21% of the people with an administrative position report having felt stress. On the other hand, from the total population, 39% of the people with an operational position report having felt stress.

Specific objective 4: Determine the perception of general health in workers with administrative functions (middle and senior managers) compared to workers with an operational position, derived from the contingency of COVID-19.

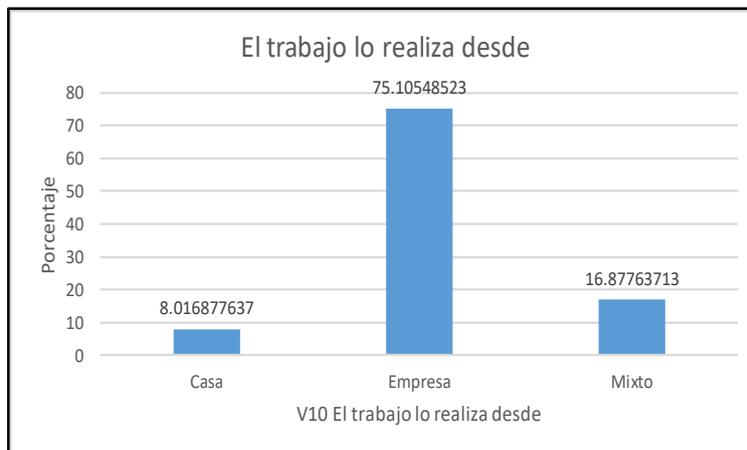


As seen in the graph, from the total population, 23% of the people with an administrative position, have perceived factors or symptoms that affect their health to some degree, in the same way, from the total population, 35% of the people with an operational position report the same case.

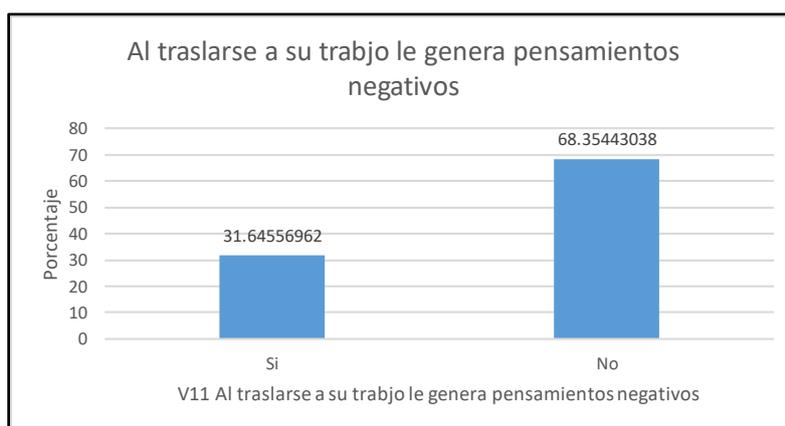
Specific objective 5: Know the perception of workers regarding the measures implemented by their organization to safeguard their integrity in the face of the contingency of COVID-19.



As seen in the graph, from the total population, 31% of the people travel in their own car. On the other hand, 33% of people travel by public transport, and 34% of the population travel by company transport.



As seen in the graph, from the total population, 17% of the people work with a mixed modality (home and company). On the other hand, 75% of people go to work at the company, and only 8% of people only work from home.



As seen in the graph, 31% of the total population mentions that they generate negative thoughts when commuting to work.

Conclusions.

Our study shows the importance of identifying and knowing what the worker's perception of the current situation in the pandemic is. With that said, various factors, including company decisions, affect the person in

various ways, from aspects such as the way in which the work modality will be carried out depending on the position, to the most extreme such as dismissal. Therefore, it is necessary for organizations to implement certain types of measures for the well-being of the worker.

In conclusion, this study responds to numerous current needs in the labor field by making the following contributions: a) Identification of factors that impact worker well-being within organizations in the Mexican population; b) Prevalence data of perception of stress and health in workers; c) Greater involvement of female workers in the face of stress symptoms.

Conflicts of Interest.

The authors express that we do not present conflict of interest to the editor of this manuscript.

Funding Statement.

This study has been funded by PROGRAMA PARA EL DESARROLLO PROFESIONAL DOCENTE (PRODEP).

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