

## STUDY OF PSYCHOSOCIAL RISK FACTORS ASSOCIATED WITH COVID-19 AND ITS IMPACT ON THE HEALTH COMPANY SEGURILAB M&S GROUP

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### KEYWORDS

Psychosocial risk,  
work impact, Covid-  
19.

### ABSTRACT:

This article addresses the author's interest in the impact on occupational health, particularly the psychosocial implications, that the pandemic has had on healthcare workers, specifically laboratory workers. It analyzes conceptual aspects from both national and international perspectives, including insights from international organizations and European studies. Conceptually framing the issue, COVID-19 is situated as a factor associated with psychosocial morbidity among laboratory workers, based on the perceptions of 40 workers. Factors associated with psychosocial disorders such as stress are identified, with an unexpected growth leading to organizational hypertrophy and subsequent mandatory staff expansion. This resulted in increased work hours and responsibility, leading to a sense of instability. Methodologically, the study describes and explores the phenomenon, considering the entire workforce at the Quito Headquarters. Data collection was done through a perception-based scaling instrument. Regarding the results, a vast majority acknowledged experiencing work-related stress, with "information" identified as one of the causes. Assuming responsibility and a high workload were also stress factors. Organizational growth and the influx of new personnel contributed to a sense of job instability, leading to continuous organizational changes that affected working conditions. Recommendations include adapting the current protocols for psychosocial disorders used by the Ministry of Labor to incorporate COVID-19 experiences. Continuation of research in this area is also proposed to establish a solid line of investigation in the field of occupational psychosociology.

### Introduction.

The Pandemic, a before and after in the development of Occupational Health: In general, the pandemic cannot be understood as a specific affectation that over time has returned to "pages 0", since this virus has marked a before and after in general in the world of work. It is interesting to refer to a study carried out by a group of health researchers led by Dr. Magali Bermejo (2022) called; *Social and psychological impact of COVID-19 on health personnel. Ecuador Case*. Where an association is established between the pandemic and its effects on health workers, but excluding laboratory personnel. However, this lack allows us to visualize studies that confirm the author's thesis, as the pandemic did have a clear impact on the mental health of health sector professionals. Effects that can be classified as traumatic (Huremovic, 2019). Likewise, in this line of a study, reference should be made to research carried out in Canada after the SARS-CoV2 virus pandemic. This study confirmed obvious disorders derived from psychological stress, such as a state of almost apprehensive psychosis due to the possibility of contracting the virus, impacting professional and social life. According to the study, this situation implied depressive symptoms among health professionals, in addition to situations of mental fatigue attributable to manifest work overload, which translates into almost chronic physical and mental exhaustion (Lozano-Vargas, 2020).

Although it is true that the above was incorporated with great rigor mainly In the so-called strategic sectors of the economy, it cannot be minimized that health services, including clinical laboratory services, also had to generate protocols and programs for "prevention to prevention".

It is true that the industry adopted actions that guaranteed productive operations, considering the new reality that required the care of the integrity of the personnel. Specifically, in the face of the

biological risk derived from COVID-19, for example, UNACEM-Ecuador (a company linked to construction) highlighted the need to develop an Occupational Health protocol, in order to ensure the operation of the company in a safe and healthy way. This was done as a regional goal since this company, whose headquarters are in Colombia, has offices in Chile, Peru, the United States and Ecuador. This holding company linked to its purposes the permanent use of the services of clinical laboratories, in the same way that companies operating in Ecuador did, such as the mining company Lundin Gold, SolGold, Lumina Gold. The construction company Holcim, the oil company SERTECPET®, or the food and beverage service company such as the National Brewery.

Through the attention to the prevention of occupational risks in general and occupational health in particular, of these important companies, the importance of promoting a health and safety management system is evident, for the preventive approach to the new "pests" that can undoubtedly be repeated, since it seems that situations such as those generated by the coronavirus will unfortunately not be an isolated event.

In general, the responses were more or less rapid for the business fabric with experience in risk management and experience in occupational health. And to a large extent due to the operational contact of these companies with the authorized laboratories that allowed after the studies, to develop specific protocols.

The companies mentioned, including mining and oil, as well as many others, were able to implement measures, such as the definition of a new form of organizational organization by virtue of the health reality that the laboratories were able to draw. In such a way that, based on the data from the clinical studies, protocols for the entry of personnel could be developed; internal and external (contractors and visitors). Without a doubt, the clinical laboratory acquired a very socialized presence among the population of Ecuador. In the capital (Quito) and in the first year of the pandemic, 41 laboratories were authorized, of which 17 were private and 24 public. Of the private ones, it should be noted that 3 of them were incorporated in university centers (Universidad San Francisco, Universidad Católica and the Universidad Central), the remaining 14 were: Synlab, Zurita & Zurita, Diagen, Cruz Vital, Biolab, Veris, Clínico Pasteur, **Segurilab**, Alsalem, Praxmed, Hunev, Surediagnostics, Biotest and Consesalud (El Comercio 20/04/2020).

The reality that the pandemic drew through clinical studies, forced the reorganization of common spaces, distancing rules and continuous processes of operational prevention for all personnel. The responses to the clinical studies were of such magnitude that it can be said that there is a before and after in the measures of hygiene and occupational health; pre and post-pandemic.

At present and in Ecuador, companies have opted for the strengthening of existing safety protocols and the adaptation of new scenarios, which make occupational health and safety a transversal axis within organizations, even more so when they must continue to fight against a global crisis that caused great human and economic losses and of which it is unknown if its end has come.

The information forces us to understand that the pandemic, in addition to affecting medical services, festered particularly in public and private clinical laboratories, which were in practice a direct barrier against severe acute respiratory syndrome type 2 (SARS-CoV-2), when its magnitude was unknown. At present, there is no social recognition of the work of laboratory analysts, since this recognition focused on medical and nursing activity in the field. This invisibility has not allowed the generation of a preventive action program that includes these services, which in the pandemic were among those that were in permanent contact with the "genesis of mortality."

According to a study carried out in Spain over a period of more than 12 months during the peak phase of COVID-19 (2020-2021), and which focused on the effects of the pandemic on the work of clinical laboratories (Lasierra et al., 2021), some effects of the pandemic on the activity of clinical laboratories were analysed. According to the research, a large part of the

studies carried out on the role of clinical laboratories during the COVID-19 pandemic have focused exclusively on the diagnosis of SARS-CoV-2, considering Microbiology laboratories fundamental. This line of study also indicates the so-called tests for diagnosis, severity monitoring and, of course, the diagnosis of patients infected by SARS-CoV-2.

If the above is evident, there is no denying the lack of interest and the few scientific articles currently published that evaluate the role of laboratories in meeting demand, both in terms of the effects derived from the pandemic and those related to pre-pandemic tests, which in many cases were added in clinical laboratories. There is no scientific evidence or even evaluative statistics on how the pandemic affected the control of other chronic diseases historically demanded from clinical laboratories, from the general practitioner to primary care.

It can be concluded by analyzing the data from the aforementioned study that the work of Spanish clinical laboratories required adapting their work to new and future needs according to the degree or phase in which Spanish society found itself. It should be noted that this is the first and only scientific study that could be identified in 2021 in Spain and that it added the pathology tests derived from the pandemic and others external to it. That is, laboratory analysis processes used in the control and management of pathologies prior to COVID-19. This situation caused the level of care for some and neglect for others, to further aggravate the problem of the virus from a clinical perspective, but also from a social perspective. It can be confirmed that in the period of the pandemic there is a decrease in requests and demand for analysis on the most prevalent chronic pathologies such as; diabetes, hypertension or obesity. This decrease in requests can be assumed to be indirectly proportional to the risk factor in the increase in morbidity of these clinical conditions.

The research in a prospective analysis announces that in the years following the pandemic, a double impact can be seen both on chronic pathologies (and their patients) and on medical and laboratory personnel. It is not strange for anyone to see today that a lack of attention in the control and management of chronic pathologies resulted in a decrease in programs. A situation that has had and will have a real impact on the so-called "morbidity and mortality" and on a certain greater demand for health services to clinical laboratories. This requires a prospective analysis with some urgency.

The pandemic and the extreme work of clinical laboratory professionals is evident. If we look at a specific case such as the Segurilab Medical Center of Specialties ([www.segurilab.ec](http://www.segurilab.ec)), an entity that allows us to approach some of the conclusions that the study carried out in Spain also refers to (Lasierra et al., 2021), in a clear global vision of health, as confirmed by a recent publication by the University of San Marcos in Peru that shares that the reality is only one and that in the framework of the of health, ethics must prevail for globalization to be a factor of scientific development (Izaguirre, 2020).

The aforementioned study states that the pandemic defines new challenges, a situation that, as we will see, also became a necessity in the Specialty Center that allows confirming some statements. The work at Segurilab in the pandemic period increased in endless days, as expressed by data from the company in the clinical laboratory sector in Quito (Ecuador), which had to increase its staff by almost 4 times (from 17 to 60) professionals during the pandemic, a situation that materialized over the course of several months between 2021 and 2022. This "unexpected" growth led to a situation of instability in general, with logistical, economic, and work organization problems, affecting both the receiving workforce (17 professionals) and those who were added over the months to increase by 352% (Segurilab, 2023).

According to the aforementioned report and from a very general vision, musculoskeletal disorders in the upper extremities could be identified and this due to the positions in many cases, not very ergonomic in which the work of laboratory professionals is carried out. We know that musculoskeletal disorders are invariably recognized, but in general the derivations that these disorders have in the field of occupational health and particularly in psychosocial derivations are neglected, in a sector - laboratories - that due to the working conditions themselves generate these affectations.

In the specific case of the company Segurilab, it had to reinvent itself, in relation to an adaptation that apparently could be positive due to the volume of work that meant an unusual growth, affecting the development of a company in the sector as shown in the following table, but which in the long run generated varied consequences.

Board 1 Growth derived from the pandemic

<b>CITY</b>	<b>BEFORE</b>	<b>DURING</b>	<b>AFTER</b>
Quito	17	60	52
Zamora	3	8	5
The Coca	0	5	4
Guayaquil	0	0	3

Source: SEGURILAB, elaboration: Own.

The situation expressed in the table resulted in a series of changes towards organizational stabilization, which led to clear problems of staff adaptation, causing a high level of stress as the manifestation of the most obvious psychosocial risk. It is true that at the time and in the situation of living in an exceptional situation, the company did not have the possibility of stopping and analysing the situation and its possible consequences from the outside. For example, in the city of Quito this exponential growth can be identified, which translated into the generation of new actions that the laboratory itself could never imagine, due to the detailed ignorance of the virus, its consequences, gestation time and clear recognition of morbidity as such. This situation meant that at the time there were no protocols, for example during one of the highest peaks of the pandemic in Ecuador (December 2021 – February 2022), however, an average of 900 RT-qPCR tests were processed daily for the diagnosis of SARS-CoV2, a period in which the largest number of personnel worked in the area of molecular biology. Segurilab had no history of either that influx, or the pandemic as such. Prior to 2020, no sample of those required by COVID was processed, that is, it went from 0 to 900 tests per day and this meant an obvious change, if we consider, for example, that the technical professionals quadrupled the workforce.

Board 2 Distribution of technical staff 2022-2023

<b>AREA</b>	<b>DURING PANDEMIC</b>	<b>POST PANDEMIA</b>
Molecular	7	0
Clinical	5	4
Commercial	7	6
Phlebotomist	3	2
Doctor	9	13
Logistics	6	4
Accounting	6	6
Administration	2	3
TICS	0	1
General Services	0	1
<b>TOTAL</b>	<b>45</b>	<b>40</b>

Source: Segurilab 2023, elaboration: own

As we can see, this growth implied the incorporation of a large number of professionals, this situation of "fast signing" and continuous, which dragged and still has consequences, one of them has become a constant, for example the repeated question if: are we sure we are prepared for new changes in operation?

It can be summarized that: Segurilab grew as a result of COVID-19, adapting infrastructures and personnel for that purpose but, at present, we identify a kind of organizational hypertrophy

for the purposes of growth since during the last year 2023, an average of 150 tests per month were processed in the first half of the year, while that amount was reduced to 50 in the second half of the year, evidencing the clear decrease in the use of installed capacity, with the consequent derivations resulting from a dysfunction between operating conditions and real demand. While it is true that the company has managed to dodge the changes, this does not mean that it is not presumed that they have had an impact on the organization as such.

This allows us to associate ourselves with the history of public health of the 80s when Acquired Immunodeficiency Syndrome (AIDS) was discovered, through clinical studies, the research processes lacked antecedents, previous studies, even if they were only clinical explorations, that is, it began from scratch and practically without conceptual definitions of the problem that would allow, to have a scientific knowledge base to address this manifestation that caused significant mortality. The lack of definitions was so evident that it was only at the beginning of 2010 that a Russian team led by Ivan Konstantinov took on the task of reviewing and analyzing data from several dozen scientific studies, published in various scientific journals around the world with the purpose of conceptually and digitally representing the HIV virus in a real way. The author Konstantinov, 30 years after the virus was identified, was able to conceptualize it digitally: "We consider such 3D models to be a new way of presenting and promoting scientific data about human viruses everywhere" (Konstantinov 2010).

The above is nothing more than a reference to indicate the need to conceptualize phenomena, look for their dimensions and indicators, the only way to be able to measure and compare from a scientific perspective. According to the data expressed, we must point out, for the purposes of this article it is necessary to make it clear that we will understand as: "occupational psychosocial risk, derived from COVID-19 in a clinical laboratory".

According to Spanish legislation, one of the most advanced in the framework of occupational risk prevention, we must understand what a clinical laboratory is and what its function is in the context of health. Focusing its action on the detection and study of infectious agents, considered as pathogens that affect humans, influencing knowledge through microbiological or parasitological tests that affect the population. A result aimed in part at preventive health through the promotion, diagnosis, monitoring and intervention of diseases. A health infrastructure we are referring to assumes a series of risks that are not exclusively biological, since there are other risks associated with the use of chemical reagents, the use of equipment or postures in which the analyst operates, which are generally not entirely respectful of ergonomics (<https://www.boe.es/eli/es/rd/1997/05/12/664/con>).

The way to neutralize both biological risks and those derived from the use of physical or chemical agents involves preventive strategies that generally focus on training in the management and use of protective equipment, both collective and individual. All this within a Strategic Plan for Prevention in Occupational Health and Safety.

The different prevention measures within the framework of the risks generated in a laboratory must be permanently articulated with the specific legal and regulatory provisions of the country. It should be noted that there are a series of measures on risk protection, such as the regulations for the protection of laboratory workers, with exposure to biological agents during the working day, including characteristics of the spaces for laboratories, ventilation, lighting. However, these measures are of reference, but insufficient for the effective control of biological risk at levels of greater danger.

The work carried out by the World Health Organization (WHO) with the Biosafety Manual in the Microbiology Laboratory in its 3rd edition in 2005 and its 4th edition in December 2020 and which largely includes the 2005 guidelines, cannot be ignored. Unfortunately, due to a matter of dates, the "new reality" resulting from COVID-19 could not be incorporated in an operational way.

In Ecuador, the problem of psychosocial risks derived from the pandemic in health workers in general and laboratory personnel in particular has not been addressed. Thus, of the

few studies in this regard, we can point out one recently carried out in the city of Manta (Ecuador) by Tatiana Marcillo et al. (2022), a study that attempts to identify psychosocial risk factors among laboratory workers in a hospital entity in that city, the study is carried out according to the application of a standardized psychosocial risk instrument of the Ministry of Labor and prior to the pandemic (Mintrab.2018). This means that the questionnaire did not consider the risks generated by COVID-19. On the other hand, it is applied to a very small number of personnel, using a sample that, according to the methodology and because the universe was small, should have been applied to all laboratory personnel. Therefore, the conclusions refer to issues established prior to the pandemic such as psychosocial risks of discrimination, workplace harassment and sexual harassment. The inclusion of this study in the elaboration of this scientific product -the article- is to ratify that in Ecuador the psychosocial effects of the pandemic on laboratory professionals have not been addressed specifically and with the required scientific rigor. For the above and in the absence of information, it is essential that we are able to answer the following question; Was there and/or is there a relationship between the approach to COVID-19 by health personnel and the generation of psychosocial disorders among laboratory personnel of a medical services center in Quito during the pandemic?

For this reason, it was proposed from a conceptual point of view to define for practical purposes what we will understand as: occupational psychosocial risks derived from the pandemic in a clinical laboratory, in the city of Quito during and after the pandemic. To this end, a scalar perception instrument was designed, which was applied to all Segurilab staff in Quito. This whole process within the framework of the research methodology pointed out by the Spanish methodologist who states: *that the most representative sample is the universe*, Lira i Morel (2016).

In order to have an instrument that would respond to levels of validity and reliability from a scientific perspective, a provisional conceptualization of what we will understand for the purposes of the study as; Psychosocial Risks associated with COVID-19, formalizing it as formulated below, is assumed and incorporated into the conceptual basis of this study as; *"some of the factors that caused changes and emphasis on a work development that was risky in itself and that due to the volume of work and the little information about the COVID phenomenon, translated into the generation of disorders in social behavior, individual inside and outside the workplace, affecting professional self-esteem, and generating an organizational situation of permanent change"*.

Because the background has allowed us to know some factors (independent variables) that affect our problem that we have duly conceptualized, we can specify the phenomenon to be studied through a list of variables: that is, to measure how COVID-19 and the measures derived from it have generated psychosocial disorders that affect workers of the SEGURILAB company. That is, we have identified some factors such as the lack of information, or the lack or protocols found during the pandemic, but, surely there will be other factors that the study will want to verify, but the mere fact of being able to establish causal relationships allowed us to develop a general hypothesis: ***The lack of knowledge and information about the virus affected that, in the approach to COVID-19, health professionals and especially laboratory workers, will generate or enhance psychosocial disorders.***

#### **Methodological Framework.**

Based on the above, the following is formulated: The identification of some associated factors between the pandemic and the referral of psychosocial disorders in laboratory workers of a Medical Center in Quito. The study that is the basis of the article responds to applied research. The basis of this article, within the framework of its scientific nature, is inscribed in a documentary descriptive research in its first phase to opt for a descriptive perception study with primary information in the second phase of the research. The study supported by this publication has generated the need to explore an aspect of reality that, at least in Ecuador, has no scientific precedent. In any case, it does not intend to be a statistical reference of significance,

but only an exploratory study whose findings allow us to lay the foundations for future studies of an explanatory nature. In accordance with the insertion of a line of research on the prevention of occupational risks, specifically in occupational health and its derivations in the field of occupational psychosociology.

The study identified the universe in 40 workers of the company Segurilab-Quito headquarters and the problem formalized as; the lack of knowledge of the psychosocial consequences derived from COVID-19 for the workers of the company's Quito headquarters. It was necessary to formalize the articulation between reality and concepts. That is, to point out the operational methodology, technically the conceptual definition of the problem allowed the identification of the following dimensions, the same ones that when conceptualized, are assumed as exclusive categories but that in reality establish multiple causal relationships in the development of the problem to be elucidated.

The problem as a formalized concept for the purposes of the scientific process derived from the following dimensions:

1. Changes and labor emphasis.
2. Workload
3. Information on the COVID phenomenon.
4. Behavioral disorders.
5. Professional self-esteem.
6. Organizational changes.

The dimensions through a new conceptualization process, re-edit the decoding process, which allowed the identification of 28 scalar indicators, which are incorporated into the measurement instrument, assuming the form of statements in which the consulted evaluate on a scale of -2 to +2. with a semantic value as follows:

Table No. 1 Scale of the Measuring Instrument

Board 3 Scale of the Measuring Instrument				
Strongly disagree	Disagree	He does not pronounce himself.	I agree	Strongly agree
-2	-1	0	1	2

Source: Author's elaboration

Note: For details of the scalar instrument, refer to Annex No. 1

On February 24, 25 and 26, 2024, the instrument was applied to 40 workers in accordance with the following table:

Board 4 Fieldwork (application of the Scalar Instrument)			
Staff WorkArea	Date of application	Number of workers consulted	
Molecular	NA	0	
Clinical	24/01/2024	4	
Commercial	24/01/2024	6	
Phlebotomist	24/01/2024	2	
Doctor	25/01/2024	13	
Logistics	26/01/2024	4	
Accounting	26/01/2024	6	
Administration	26/01/2024	3	
TICS	26/01/2024	1	
General Services	26/01/2024	1	
		<b>40 workers</b>	

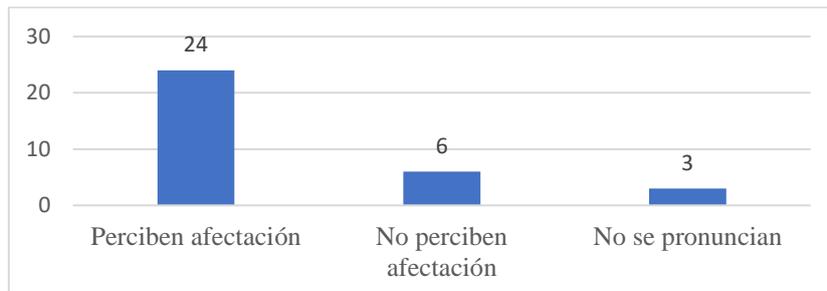
Source: Authors.

The instrument was applied digitally, following the technical observations of the GATE Observatory (UPM. 2024), which allowed the processing of the data, which were analyzed by the author, through an analysis matrix that articulated, problem, purposes and hypothesis. From this, the following results could be obtained based on the 6 dimensions to be evaluated through the 28 indicators (Design of the Instrument and data processing in Annex No. 1).

First, we must refer to the dimensions assessed by means of the Scalar Instrument: job changes, workload, information, recognition of behavioral disorders, professional self-esteem, and the organizational changes that resulted. All these dimensions are analytically separated but in reality respond to a single phenomenon: **the psychosocial derivations of COVID-19, in workers of the Segurilab company.**

If we take into account that job instability is a factor that influences psychosocial derivations in the world of work, as already stated in the Ninth Congress on the subject held in Argentina by Dr. Constanza Salaschi (2009), who stated that problems of job insecurity are determining factors to generate stress and psychosocial disorders.

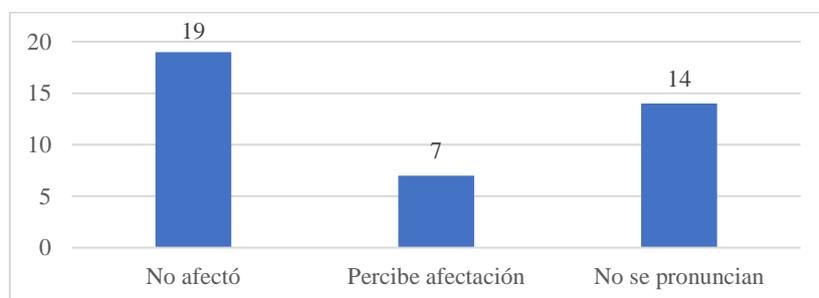
In the specific case of the study carried out in Segurilab, when 40 workers were asked if in the period of the pandemic, they felt that their stability was affected, the answers are conclusive.



Graphic 1. The pandemic and the perception of job stability. In original language Spanish  
Source: Segurilab 2024

As can be seen, approximately 2 out of 3 respondents felt affected, which was basically due to the lack of knowledge of the details, and of the dimensions of this situation that is detailed below (information dimension).

On the other hand, and adding to this incipient situation of disorder, the company was required to take charge of SARS CoV2 analysis tests in a volume unknown until that moment, since those tests that prior to 2019, and for obvious reasons, were not requested and were not even known. Therefore, the company was forced to make new hires, This issue of staff expansion also strengthened that idea of instability. As shown in part by the graph below:



Graphic 2. Perception of job stability. In original language Spanish  
Source: Segurilab 2024

According to Toledano (2009) the "rapid" expansion of the workforce has psychosocial effects on the company (and we are talking about "normal" situations), the researcher refers to a

European study where it was concluded that: "... the processes of business restructuring are seriously affecting the health of many people in Spain and Europe...". Although the study is pre-pandemic due to its object of study, it is clearly valid for the thesis of this article.

As already mentioned, the company Segurilab particularly increased the volume of laboratory work, a situation that was recognized by at least 7 of the 40 workers, who assume it as a factor of unfair labor competition, since these new hires were apparently perceived as very fast and without as many controls as those of the "old" workers had been. The 7 respondents who choose to assess incorporation as a threat can be recognized as a small fraction, but we must analyze the data of those who do not speak out (14). However, it was pointed out that this group (the 7) corresponds to former workers (40% of the initial workforce).

In order to delve into the intricacies of the conceptualized problem, it cannot be ignored that one of the most pressing manifestations when talking about psychosocial disorders at work is anxiety.

As defined in the Spanish Occupational Health Strategy (2023-2027), in terms of the anxiety generated in the workplace is an occupational disease, having its seriousness in the fact that it is a generalized effect and on many occasions without the worker himself being able to identify its root, reaching situations called "floating anxiety" a type of anxiety whose origin is unknown to the worker. Anxiety can be classified as a psychosomatic morbidity, since it is accompanied by symptoms such as heart acceleration, agitation or tension, sweating, a feeling of danger or panic, or hyperventilation, it is for this reason that it must be understood that in the framework of occupational safety and health, psychosocial disorders can have consequences on the general health of the worker (Guzmán, 2023).

In the case of the workers of the Segurilab company, more than 50% of those consulted recognize that they were victims of anxiety, as a consequence of the pressure in the pandemic stage, a percentage that contrasts with the 25% who recognize that they have not been affected.

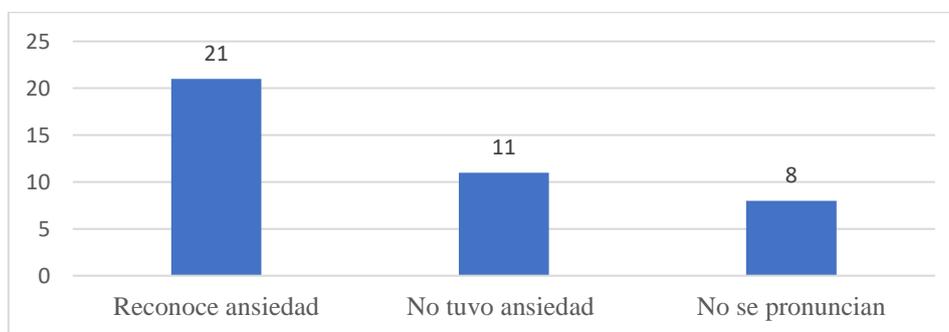


Figure 3. Perception of anxiety during the pandemic. In original language Spanish  
 Source: Segurilab 2024

From a psychosocial point of view, anxiety is a sensation that manifestly affects daily relationships, and it is very difficult to identify the factors that are at the base, but without a doubt the ignorance or lack of awareness of a danger can pay for the possibility of an accident, without ignoring that when anxiety is generated, The work environment can express this sense of danger ("you can see it in the environment"). In the case of the pandemic for the workers of the Specialty Center that is analyzed, they state from a retrospective look, that there was no real awareness of the danger they faced, of the 40 consulted only 6 (15%) recognize having known the consequences that the pandemic could have on their occupational health, but they are more than 75% of that population that thinks the opposite: there was no information that could formalize the seriousness of the danger. From a technical point of view, it can be said that most of those consulted suffered from a kind of alienation, that is, and corroborating the thesis of

Marx Westreicher (2020). The author of this article confirms that there was a lack of awareness of herself and the environment, therefore her professional reactions may not always be accurate.

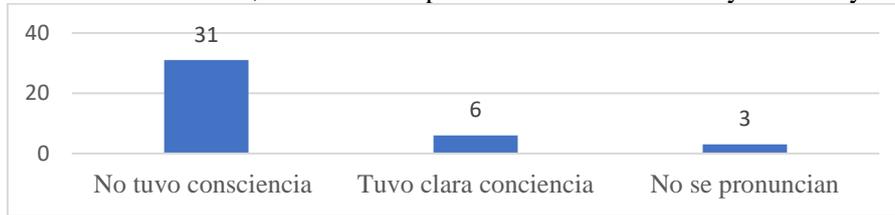


Figure 4. Perception of danger during the pandemic. In original language Spanish

Source: Own elaboration

An important part of those consulted had the feeling that the situation was beyond them, personally and professionally, evidently affecting their self-esteem and therefore their capacity for professional development, this is also based, among other arguments, on a study carried out at the University of La Sabana, Colombia and based on work related to the professional security of the worker as a factor of labor development, confirming the thesis of N. Branden that in his work; Self-esteem at work, (2002). In other words, insecurity or lack of labor control affects the self-image that one has as a worker.

In the study carried out in Segurilab, we can confirm what Branden says, since 50% of those consulted had the feeling that they were not professionally capable of facing the crisis. This is shown in the following graphic figure.

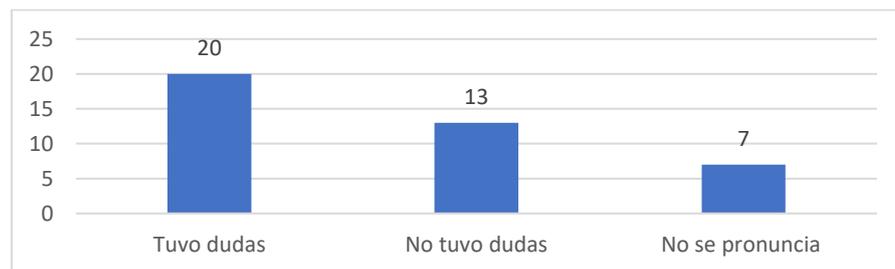


Figure 5. Doubts about their professional capacity. In original language Spanish

Source: Segurilab2024, own elaboration

The situation that could be a mere assumption at the beginning of the article, as the data are analyzed the situation experienced by the workers of the company under study, confirms with more evidence the derivations of psychosocial disorders and their impact on occupational health (Salanoba, 2009). As has been expressed, we are almost certainly facing a picture of impact on the health of workers, as a result of an unprecedented situation and that in other medical centers may have had greater consequences, as expressed by the data of health personnel who lost their lives in the period of the pandemic. In Spain, for example, 12 months into the pandemic, 17,000 deaths among medical personnel were recognized (AI-Routers, 2021), in the case of Ecuador the data are unreliable and the existing data minimize deaths. For example, according to the newspaper Primicias, using data from the government of Ecuador dated August 11, 2021, only 60 deaths from the virus are recognized among health personnel. (Scoop, 2024) For this reason, it was considered an international benchmark that allows us to measure the severity and pressure to which health workers were subjected.

Currently, and almost 5 years after the first case of COVID-19 was known in Ecuadorian territory, we can say that health professionals, and in particular in this case laboratory personnel, recognize psychological effects that still persist with respect to what the pandemic was. The following graphic figure is significant.

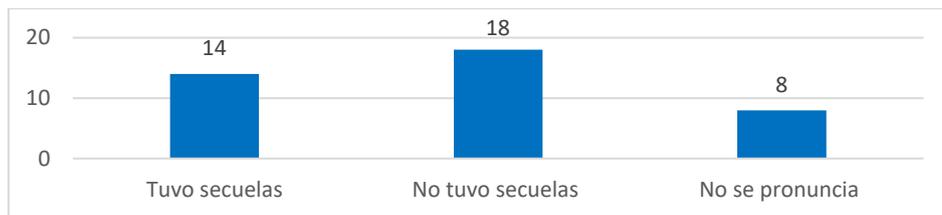


Figure 6. Recognition of post-pandemic sequelae. In original language Spanish  
 Source: Segurilab 2024, own elaboration

It is important to note that since 2020, once the pandemic began and more than 2 years after it ended, at least in what this first affectation meant worldwide, 35% of Segurilab workers state that they still have sequelae, which translate into fears and lack of ability to plan their lives in the long term. On the other hand, and seen from the other perspective, less than half of the population consulted (18 out of 40) say they have no sequelae.

The above data are partly ratified, when consulted, if the sequelae presented are related to their current job (2024). 20% confirm this relationship, and just over half of those consulted say they do not recognise this relationship in the period of the pandemic.

Looking back, for these 40 workers, the virus had a derivation in psychosocial disorders to different degrees.

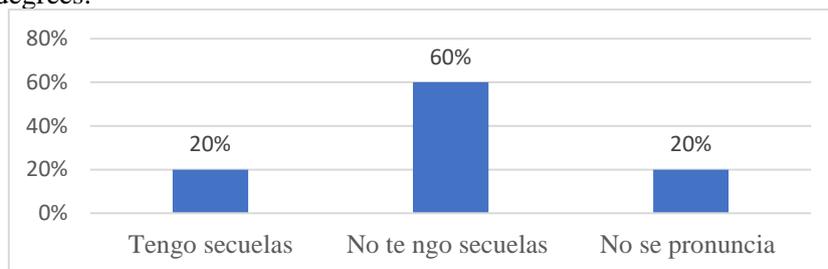


Figure 7 Perception of job-related sequelae. In original language Spanish  
 Source: Segurilab 2024, own elaboration.

There are two dimensions that must undoubtedly be analyzed, since they are part of the dimensions derived from the problem formalized in the company, these are; the information and organizational effects that the management of the Specialty Center had to assume, not only at the time of the beginning of the pandemic but also after it, the graphic figures presented below are very expressive.

Currently, the workers consulted have a perception about the information lines that were had regarding the virus, its consequences, protocols and the role of the authorities.

According to the data, 8 out of 10 consulted stated that the information on the pandemic, the preventive rules and the actions that should be carried out by citizens and the health sector, lacked a governing body and the information was fed from different sources, sometimes of a clearly contradictory nature.



Graph 8 Perception of the information leadership of the governing body of health. In original language Spanish

Source: Segurilab 2024, own elaboration.

In addition to the above, where almost all of those consulted recognize a great diversification of information sources, it must be added that this information lacked verifiable rigor. In addition to this, a large part of the people consulted report that this information was not easily accessible either. As it is not difficult to imagine, the great burden that the workers had to bear. In short; They had to face guidelines from government entities without an "official" information line, inaccessible, and with questionable validity.

In the course of the study, the phrase attributed to Aeschylus was more firmly concretized: "Truth is the first victim of war."

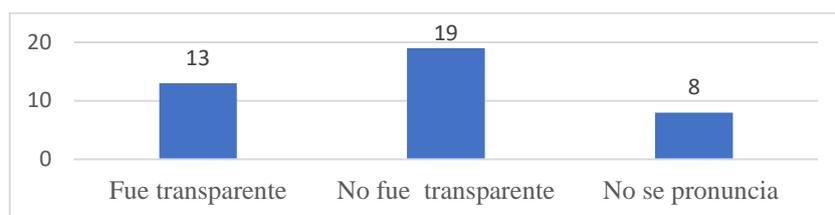


Figure 9. Perception of transparency of information. In original language Spanish  
 Source: Segurilab study. 2024, own elaboration

In this article, mention was made of the role that information played in "the war" against the pandemic. As the Greek playwright said, the first victim in a war is the truth, and information builds truths. (La Voz de Galicia, 2023). This particular "crusade" was no exception and this is how part of the 40 consulted perceived it, as described in the figure above, where almost 50% of the workers consulted think that the information, in addition to being diverse according to their sources, responded to a dosage that did not allow identifying not only the causes of the pandemic but, also the consequences in real time.

It is necessary to mention an issue already referred to in the introductory background: the pandemic had a direct impact on the organizational structure of the company where the analysis focused (Segurilab).

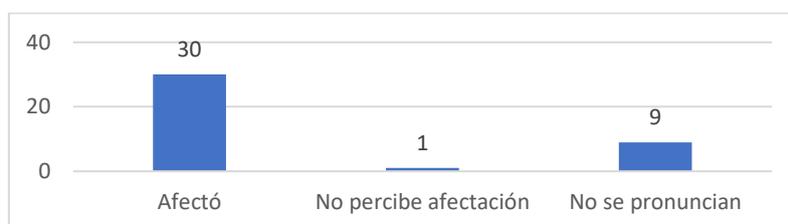


Figure 10. Perception of the impact of the pandemic on planning. In original language Spanish  
 Source: Segurilab study. 2024, prepared by the authors.

The workers of the Quito Specialty Center recognized that the pandemic implied organizational effects since, in order to give continuity to the operation of the center with an excessive demand in an area, such as molecular biology. This area is basically intended for the analytical management of COVID-19, a specific management that was unknown until 2020.

As can be seen in the graph above, of the total number of people consulted, only 1 of them does not perceive any impact on the planning of the work, while 75% clearly formalize this impact.

The workers are clear that this unforeseen growth had and has consequences in the current organization of the company, this from a "commercial" point of view can be a positive affectation, but within each worker the perception has particularities. Considering that this reorganization was carried out in a short time and in basically unknown conditions, among other reasons, due to the "disinformation" problem in which the country was immersed.

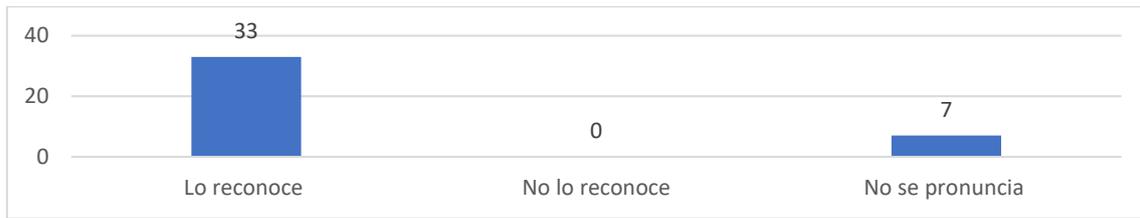


Figure 11. Perception of labor reorganization. In original language Spanish

Source: Segurilab study. 2024, own elaboration

All of those consulted assume that there was a labor reorganization, as shown in the previous figure. Added to this confirmation is the critical view on the matter. This can be deduced when we analyze the following graph, where more than 75% of the people who were part of the study say that they felt affected, since a planning prepared based on the pandemic implied a biased score on the real assessment of the performance of each professional and therefore, with consequences on their working and economic conditions.



Figure 12. Perception of the labor affectation, of changes without planning. In original language Spanish

Source: Segurilab study. 2024 own elaboration.

Doubting that performance appraisal may have been a management highly conditioned by the pandemic, was one more factor for unrest and anxiety at work and therefore generated a picture of psychosocial disorders.

To conclude this analysis, it is necessary that we consider the latest data an issue that was addressed with particularity, in the first place it refers to the qualification made by the respondents regarding a feeling or perception of the stress derived from the pandemic, the way of approaching it and the role that Segurilab assumed in that situation, as a center of medical specialties.

Work stress is a psychosocial disorder that is not given severity from an exclusively medical perspective, which contrasts with the rigorous attention that is given to it from occupational health, where it is considered not only an affectation in the individual but also from a collective perspective. Stress should be understood as an accumulation of reactions associated with emotions, also cognition and physiology added to mood swings and excitement translated into behavioral changes, which can generate aversion to colleagues or to spaces in the center in which one works. In a study carried out in the Spanish city of Zaragoza (Vidal, 2019), they are confirmed and framed in what has been expressed, reaffirming that stress is much more than a sensation of the subject, it is an affectation of the environment and this implies the work, social and family environment.



Figure 13. Perception of stress management. In original language Spanish  
 Source: Segurilab-2024 study, prepared by the authors.

According to the data issued by the people consulted, there is a recognition by almost all (37 out of 40 cases), that the pandemic influenced the generation of some type of work stress, and it is recognized that in at least 16 cases it was not always controllable by the worker.

The second point to conclude the analysis refers to the organizational changes to which the staff of Segurilab Quito was subjected. The change is evidenced by the significant variation in personnel in a short period. As expressed in the last graphic figure of the analysis.

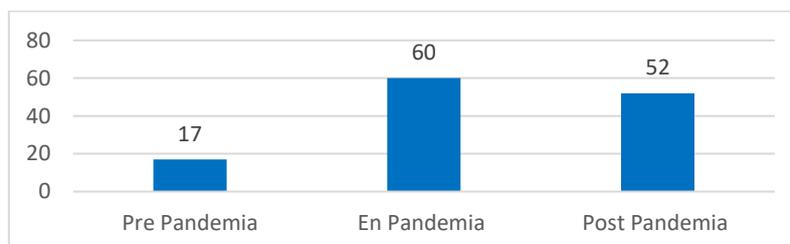


Figure 14. Staff variation in the pre- and post-pandemic period. In original language Spanish  
 Source: Segurilab 2024 Study, prepared by the authors.

This variation of technical professionals and support personnel implied the making of a series of decisions, in a very short time and therefore without the possibility of being socialized in the measure that they were incorporated and assuming new challenges in some cases, in fields that were not entirely known.

**Conclusions:**

In terms of conclusions or operational synthesis of the data.

- The pandemic affected the company due to the need to make rapid changes in operation, which in turn affected the workers by creating uncertainty about job stability.
- The high demand for severe acute respiratory syndrome (SARS-CoV-2) analysis and testing generated stress among the staff of Segurilab - Quito.
- It is concluded that one of the factors that most affected the professional safety of Segurilab workers was the lack of information and quality of information about the pandemic.
- The pandemic had consequences on the work, social and family life of Segurilab workers.
- The lack of information on causes and consequences caused workers to doubt the operational capabilities of their professional field, affecting their self-esteem.
- It is concluded that Segurilab acted quickly to generate a functional and organizational change in the midst of the pandemic, but this business success affected the emotional and labor stability of its workers.
- Almost all the workers had manifestations of stress as a result of COVID-19 and their referrals to the Segurilab Specialty Medical Center.

- It is concluded that the health emergency caused by COVID-19 left behind other chronic clinical conditions, and therefore patients who delayed their treatments.

### **Recommendations**

Based on the conclusions provided, the author believes it is necessary to make the following recommendations:

- In the face of a public health crisis, workers in the sector must know official information on causes and consequences in real time.
- Official information must be verified and validated and made public.
- Labor reorganization processes in the sector must have the direct participation of workers.
- The company's occupational health must have a protocol for national health emergencies, which does not allow chronic diseases to be delayed, with the impact on the so-called morbidity and mortality.
- Occupational disorders in general should be prospectively analyzed in their psychosocial derivations.
- The "feeling" of job stability or instability must be worked on within the framework of the work environment and relationships.
- It is necessary within the company's Occupational Health policy, the development of an accessible protocol, which allows the worker to recognize symptoms and recommendations on stress-generating situations.
- It is recommended to delve into this topic using this study as an exploration that helps to carry out other studies of greater importance and with an explanatory nature.

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