



Characterization of the effects of work stress on the cognitive functions of staff from hotel companies

Caracterización de los efectos del estrés laboral en las funciones cognitivas del personal de las empresas hoteleras

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Abstract

Objective: Characterize the effects of work stress on the cognitive functions of hotel workers in the city of Sincelejo, Sucre. **Methodology:** Of the eighty-nine (89) hotels registered with the Sincelejo Chamber of Commerce, a sample of twenty (20) was selected; Likewise, the study subjects designated as collaborators to be surveyed were a total of fifty-three (53) members of the staff of said hotels with more than 5 years of experience in the area. Once the sample was selected, the survey prepared for the present investigation was applied, with a total of 18 questions. The questionnaire was built using the Likert-type scale, using five (5) response alternatives with their corresponding weighting: Always (A), Almost Always (AA), Sometimes (S), Almost Never (AN) and Never (N). **Results:** The results show that work stress is Present in the cognitive functions of Concentration and attention, Memory, Errors, Immediate Reactions and Logic and organization, while it is Moderately present in the cognitive function Current evaluation and future project. **Conclusions:** It was possible to conclude that the presence of work stress in cognitive functions can have negative effects on the quality of working life of workers and, in turn, on their performance within the organization.

Keywords: Work stress, cognitive functions, working conditions, human capital, productivity.

Resumen

Objetivo: Caracterizar los efectos del estrés laboral en las funciones cognitivas de los trabajadores de las empresas hoteleras de la ciudad de Sincelejo, Sucre. **Metodología:** De los ochenta y nueve (89) hoteles registrados en la Cámara de Comercio de Sincelejo, se seleccionó una muestra de veinte (20); así mismo, los sujetos de estudio designados como colaboradores a encuestar fueron un total de cincuenta y tres (53) miembros del personal de dichos hoteles con más de 5 años de experiencia en el área. Una vez seleccionada la muestra, se aplicó la encuesta preparada para la presente investigación, con un total de 18 preguntas. El cuestionario se construyó empleando la escala tipo Likert, mediante cinco (5) alternativas de respuesta con su ponderación correspondiente: Siempre (S), Casi Siempre (CS), A Veces (AV), Casi Nunca (CN) y Nunca (N). **Resultados:** Los resultados evidencian que el estrés laboral se encuentra Presente en las funciones cognitivas de Concentración y atención, Memoria, Errores, Reacciones inmediatas y Lógica y organización, en tanto que se encuentra Moderadamente presente en la función cognitiva Evaluación actual y proyecto a futuro. **Conclusiones:** Se pudo concluir que la presencia del estrés laboral en las funciones cognitivas pueden tener efectos negativos sobre la calidad de vida laboral de los trabajadores y a su vez en su desempeño dentro de la organización.

Palabras clave: Estrés laboral, funciones cognitivas, condiciones laborales, capital humano, productividad.

Introduction

From a historical perspective, the work itself has always entailed an intrinsic risk for the employee [1, 2]. For this reason, apart from the fight for the rights of workers and the promotion of respect for their human dignity, the conceptual relationship between safety, productivity and added value of the worker has been mutating over time until it derives in the that we know today as human capital [3, 4], which is recognized as one of the essential components in the growth of activities geared toward achieving the goals and objectives set by organizations. This is particularly true in the current environment, where globalization and new technologies have combined to create a highly competitive environment that calls for trained and motivated staff as well as strategic leadership to manage this capital with effectiveness and humanity [5].

For this reason, the study of the factors that condition or impair human capital has been in the forefront of the scientific community specialized in the business, managerial, social and economic branches for decades [6]. Although times have changed and social transformations have benefited many countries, working conditions continue to be worrisome due to the dangers that workers face on a daily basis [7]. From this global reality, multiple types of risks branch out, but the main focus in this paper is none other than the psychosocial approach to occupational risk, which in turn leads to the central point of this research: job stress [8].

The health of employees and their working conditions end up being one of the most important issues for senior management, where strategies and policies must be developed to create a healthy environment for employees and prevent physical or psychosocial risks [9, 10]. Various scientific findings that emphasize the importance of a healthy, motivated and comfortable staff within their productive context, and how the absence of these characteristics ends up generating work stress, which not only compromises their quality of life but also the final results of the organization itself [11, 12].

The negative impacts of job stress on job performance are well documented. In addition, stress can also trigger physical ailments such as headaches, hypertension, and muscle tension, as well as emotional problems such as mood swings, irritability, and disorientation, among others [13].

Similarly, empirical evidence demonstrates the direct impact of work-related stress on worker performance, job satisfaction, and the rate of turnover and absenteeism within an organization. This underscores the importance of both academia and organizations taking concrete steps to study job stress and develop effective prevention and treatment measures for staff [14]. In the particular case of Colombia, issues related to work stress have become a crucial area of research in various organizations, particularly in the health sector, emphasizing the transitory and sometimes permanent damage that work stress and Constant exposure to it can cause the cognitive functions of the worker [15].

It is for all of the above that this research paper highlights how contextual factors contribute significantly to the presence of work stress. Its importance lies in the indisputable evidence that cognitive disorders and conditions caused by stress represent one of the most widespread occupational diseases among workers in Latin America and Europe in this century, which has been boosted meteorically by the effects transformers of globalization, which have led organizations to seek ways to improve competitiveness, often sadly compromising the optimal working conditions of their employees [16, 17].

For the specific case chosen in this paper, the hotel industry in Sincelejo and the department of Sucre in general is a vital component of the tourism sector in the Republic of Colombia, for which reason it is considered sufficiently representative to measure the global effect of the work stress in Colombian workers,

who, like any other worker in the world, are subject to conditions and rights that must be guaranteed in accordance with the international protocols in force to date [18]. As a particular benefit, carrying out studies focused on the well-being of workers in this sector, being the main productive focus of the referred city, will allow to accurately visualize the internal and external factors that currently come together and can have a significant impact on the quality of life of its inhabitants, as well as the sustainability of industry in the city. In summary, the present study aims to apply a data collection instrument to examine and clarify the impact of work stress on the cognitive functions of the workers of the hotel companies of Sincelejo.

Literature review

This section shows a review of the literature available for each of the concepts handled within the indicators evaluated in the questionnaire applied for the purposes of this research.

Work stress

Stress is referred to some type of nervous, emotional manifestation, the result of an unusual or unexpected reaction, or as a cognitive interaction between a person and their environment. Based on this, previous research indicates that a significant portion of the global population experiences work-related stress, which is either brought on by the use of or the influence of technology at their workplace or, in the absence of that, by social or environmental changes that are challenging to adapt to [19].

Likewise, it is scientific knowledge that, when a physical, psychological, external or internal demand is executed, it will cause a biological response to the organism. Laboratory data and the changes brought on by these hormonal secretions in the individual can be used to quantify the hormonal changes brought on by this response [20]. Therefore, it can be affirmed that when a person's capacity to handle everyday situations is exceeded, stress can result, causing tension and psychological crises that can have serious repercussions.

According to other investigations, work stress can be seen as a phenomenon that is continuously generated, bringing with it physical and emotional effects on the individual and greatly deteriorating organizational health. Many authors consider it the element that alters health and acts most frequently in the workplace. Currently, the world economy and the high pace of work generate situations that require greater effort from workers, who often cannot adapt to the speed of these changes [21].

Stress occurs in an individual when they are feeling overwhelmed by the environment and circumstances surrounding them. This overwhelming feeling is generated by stressors, which is the technical denomination for every single element that causes stress in the person [22]. It is challenging to create a list of every stressor that exists because anything can be regarded as a stressor. However, other authors state that there are certain conditions and objects that are more likely than others to be considered as stressors [23].

In accordance with all of the above, it can be affirmed that stressors are found in the environment, while others are physical, others have to do with the social aspect and others have a psychic origin, that is, they originate from the interaction of the cognitive functions of the individual with their environment, and this interaction constitutes the central axis of this research, as explained in the following pages.

Cognitive Functions of Work Stress

Particularly when it is experienced as acute or chronic stress, it modifies an individual's cognitive capacity. Cognitive ability may be affected by stress in a variety of ways, but this depends on a number of variables related to both the stress itself and the cognitive ability in question. Stress's duration and intensity are two elements that help define its effects on a person's cognitive functioning [24].

Given this, other previous works point out that cognitive functions are those that involve the construction of conscious and intentional memory or those that require flexible and abstract reasoning. On the one hand, it is recognized that mild or moderate stress facilitates the cognitive capacity of the individual; instead, high stress is associated with impairment of these functions [25].

However, based on what has been collected from multiple investigations that serve as antecedents of this work, the effects of stress on the cognitive abilities of employees can be classified as follows:

Concentration and attention

Reading, watching television, studying, and other daily activities can all be hindered by a lack of concentration, which is nothing more than an interruption in attention span. It may be found it difficult to focus and pay attention when the anxiety levels rise to a chronic level [26]. When a worker is experiencing mental difficulties at work brought on by a high level of anxiety, they will find it difficult to focus on a given task and will easily lose their attention. Regarding the ability to filter or select information based on individual interests and motivations, attention enables people to concentrate on and remember the primary stimuli in the field of consciousness [27].

It could be affirmed, then, that attention and concentration are significant indicators for hotel companies, by virtue of the fact that the collaborators of said sector must maintain concentration and attention, both for internal and external clients, thus attending to said stimuli to be able to understand them.

Memory

Various authors express that memory is the process in which what has been learned can be stored and what is learned with life experiences, it also makes it possible for those knowledge that are stored to be fed and renewed with new experiences [28]. Memory is the ability to retain information in the short and long term, and it can be significantly reduced when the worker is subjected to chronic stress; this increases cortisol levels, and this in turn triggers a diminishing effect in the area of the brain responsible for short- and long-term memory [26].

This indicator shows that memory is fundamental in every human being, since it corresponds to the mental capacity that is available to make records, preserve and evoke experiences (lived events, feelings, ideas, images, among others) and the faculty that you have to retain and remember the past.

Immediate reactions

In correspondence with previous research, immediate reactions are the capacities that an individual has to take action in response to a stimulus. In the workplace, when a worker is subjected to a high level of stress, they may experience difficulties if they are in a situation that requires an immediate reaction, generating unpredictable responses [26].

On the other hand, other researchers comment that there are several immediate reactions resulting from stress, among which are: Physiological reactions, such as heart rate, muscle tension, among others; emotional reactions, those that lead to changes in mood, such as anxiety or anger and finally, cognitive reactions that lead to decreased attention, forgetfulness, or decreased ability to solve problems and learning [29].

Errors

It is common to make mistakes at any time, doing any activity at home or at work. However, according to what was expressed by previous research papers, when a very stressful situation is generated at work

where the mental activity of the employee is needed, the latter will be able to solve it, but making a large number of errors [26].

One of the most common mistakes produced by stress is the irrational desire for control. Given this, other authors indicate that the feeling of human beings being overcome is inevitable on a good number of occasions. In the same way, the same authors point out that another of the errors caused by stress is flight, for which it is recommended to establish more favorable conditions to manage this state of continuous alertness that causes discomfort in the worker [30].

It can be pointed out, then, that the errors produced by stress can cause inconveniences to the human being at a personal and work level, causing low or no productivity in companies.

Current evaluation and future project

In the opinion of multiple researchers, situational assessment is the way an organization has to measure performance in achieving objectives and the ability to achieve it. In a stressful situation in the work environment, the mind of an employee affected by stress is incapable of making accurate assessments of day-to-day situations and will not be able to make accurate assessments in the future [26].

Considering the above, this indicator represents a significant concept for the current study, since cognitive evaluation is developed with the purpose of knowing the performance of the subjects, such as their attention, memory and executive actions to develop future projects with them.

Logic and organization

Logic is the ability of a subject to logically organize daily commitments within an organization. However, the way of thinking of the individual affected by stress will not follow logical patterns, but will be executed in a disorganized manner. It can be affirmed then that the high level of stress prevents the subjects from being able to logically organize each of the tasks and functions within the organizations [26].

It can be added, according to what was expressed by other authors, that stress can generate in the affected employee a feeling of constant worry, indecision, low level of concentration and make them easily disoriented, in addition to suffering from irritability, hypersensitivity to criticism and lack of control [31]. According to what was stated above, it can be said then that, when an individual is subjected to high levels of stress for a long time in their work environment, they can experience problems in their cognitive abilities that will generate certain disorders in their health and well-being.

Materials and methods

The present study was developed from the positivist paradigm with a quantitative approach, being a descriptive level field research in which a collection instrument is applied directly to the sample objects for the characterization of work stress in the cognitive functions present in companies. hotels. from the city of Sincelejo, located in the Department of Sucre, Colombia. The data collection was carried out in the year 2022 in the mentioned city of Colombia.

As a study population, hotels legally registered in the Sincelejo Chamber of Commerce, belonging to the tertiary sector of the economy, were specifically addressed, taking as study subjects the workers at the operational and administrative levels of the hotels. In turn, a survey was used as a data collection technique to measure the variables studied.

According to the information provided by the Chamber of Commerce in the Database about the commercial establishments of the tourism sector, eighty-nine (89) were found, Hotel companies, which were considered in the current investigation. However, since the amount presented as the universe is high, purposive sampling was carried out. In this case, the criteria used were: a) Size of the Hotel (Micro, Small and Large); b) They were considered formalized as a company; c) Hotels whose years of service were greater than five (05) years.

According to the above, of the eighty-nine (89) hotels, a sample of twenty (20) was selected; Likewise, the study subjects designated as collaborators to be surveyed were a total of fifty-three (53) members of the staff of said hotels with more than 5 years of experience in the area. Once the sample was selected, the survey prepared for the present investigation was applied, with a total of 18 questions. The questionnaire was built using the Likert-type scale, using five (5) response alternatives with their corresponding weighting: Always (A), Almost always (AA), Sometimes (S), Almost never (AN) and Never (N), as shown in Table 1.

Table 1. Alternative Answers

Alternatives	Acronym	Weighing
Always	A	5
Almost always	AA	4
Sometimes	S	3
Almost never	AN	2
Never	N	1

Fuente: own elaboration

To validate the applied instrument, its reliability was calculated. Once the information of the subjects surveyed was obtained, the data was entered into the Cronbach's Alpha coefficient formula. For the data collected by applying the instrument, the result was $r = 0.6747$, considered a high reliability for studies related to the social sciences, which allowed us to conclude that the instrument used was valid for the purposes of this investigation. On the other hand, the scale of interpretation of the mean or arithmetic average was carried out, where the different categories with the ranges were indicated to position the variables, dimensions and indicators in the investigation.

In this sense, with the results of the scale, a statistical processing was carried out based on descriptive statistics with the indicators of frequency, absolute frequency and the arithmetic mean, to later analyze the arithmetic mean of the study variable with the following analysis relationship:

Table 2: Scale of interpretation of the Mean or Arithmetic Average

Alternatives	Range	Categories
Always	4.21 – 5.00	Strongly present
Almost always	3.41 – 4.20	Present
Sometimes	2.61 – 3.40	Moderately present
Almost never	1.81 – 2.60	Barely present
Never	1.00 – 1.80	Absent

Source: own elaboration

Results

The results of the field collection process of this study are presented below. From the summary table shown, they derived each of the graphs that illustrate the presence of work stress in each of the cognitive functions studied, presented as the indicators to be included in the present study:

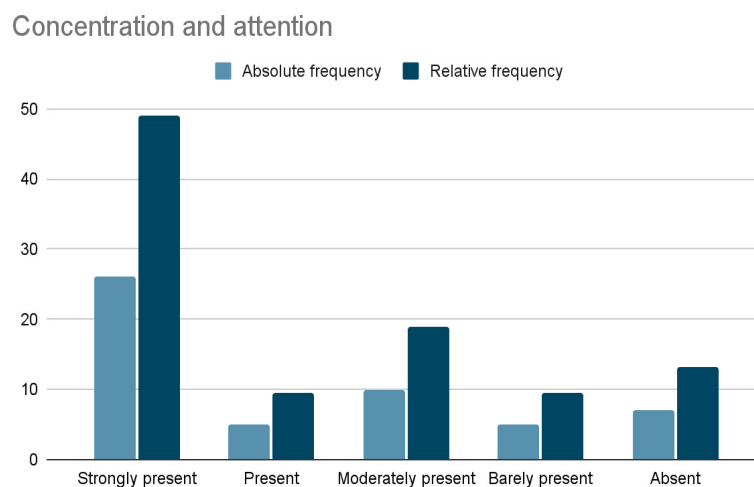
Table 3. Cognitive functions of work stress

Indicators	Items	Answer alternatives												
		A		AA		S		AN		N		Total Af	Total Rf	AVG
		Af	Rf	Af	Rf	Af	Rf	Af	Rf	Af	Rf			
Concentration and attention	1-3	26	49.06	5	9.43	10	18.87	5	9.43	7	13.21	53	100	3.71
Memory	4-6	28	52.83	11	20.75	9	16.98	4	7.55	1	1.89	53	100	4.13
Immediate reactions	7-9	17	32.08	10	18.87	17	32.08	5	9.43	4	7.55	53	100	3.6
Errors	10-12	20	37.74	11	20.75	13	24.53	6	11.32	3	5.66	53	100	3.8
Current evaluation and future project	13-15	16	30.19	8	15.09	14	26.42	7	13.21	8	15.09	53	100	3.3
Logic and organization	16-18	24	45.28	10	18.87	12	22.64	4	7.55	3	5.66	53	100	4
Arithmetic average		3,70												
Category		Present												

Source: own elaboration

From the summary table, each of the indicators is broken down graphically. For each of them, the results obtained were the following:

Figure 1. Concentration and attention

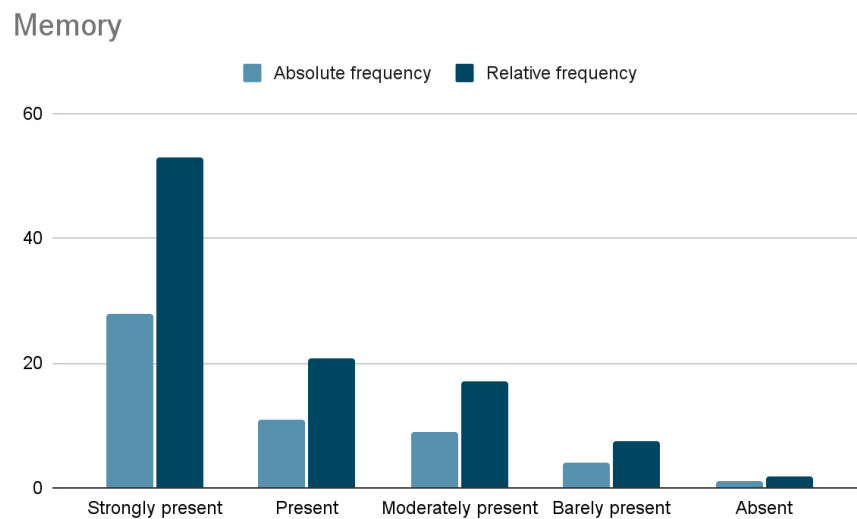


Source: own elaboration

As detailed in figure 1, for the Concentration and attention indicator, of the total of 53 respondents, twenty-six (26), which represent 49.06%, selected the "Always" option, indicating that in the company lack of concentration of the collaborators is evident, since there are disturbances that prevent the attention span of the collaborators and concentration. The 10 who answered the option "Sometimes" represent 10.87% and the seven (7) who answered "Absent" reflect 13.21%. Finally, the two groups of five (5) workers who indicated the options "Almost always" and "Almost never" are equivalent to 9.43% for each one. Based on these results, the arithmetic mean for the presence of disorders in the concentration and attention of employees due to work stress was 3.71 according to the scale, which means that work stress is "Present" in the cognitive function of concentration and attention, correctly reflecting the theories of concentration and attention [32].

Below is the breakdown of the indicator of memory conditions resulting from work stress:

Figure 2. Memory



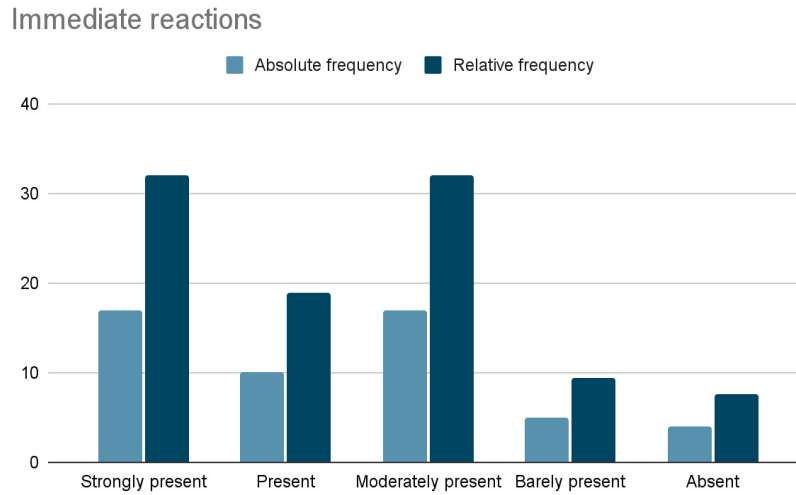
Source: own elaboration

Figure 2 explains how, for the Memory indicator, of the total of fifty-three (53) subjects, twenty-eight (28) of them, representing 52.83%, answered "Always" when questioned about the presence of stress in life. use of knowledge stored in long-term memory when handling work situations. Next, eleven (11) respondents, representing 20.75%, selected the item "Almost always", nine (9) respondents (16.98%) selected the item "Sometimes", four (4) people (7, 55%) selected the item "Almost never" and only one (1) collaborator (1.89%) selected the item "Never". This is how the Memory indicator showed an average of 4.13.

The fact that stress causes the short and long-term memory retention capacity to be significantly reduced [33] is taken as a point of support to affirm that when the worker is subjected to chronic stress, his cortisol level increases, which damages the area of the brain in charge of short and long-term memory, as evidenced in the study subjects.

Having said the above, the behavior observed for the item Immediate Reactions is shown:

Figure 3. Immediate Reactions

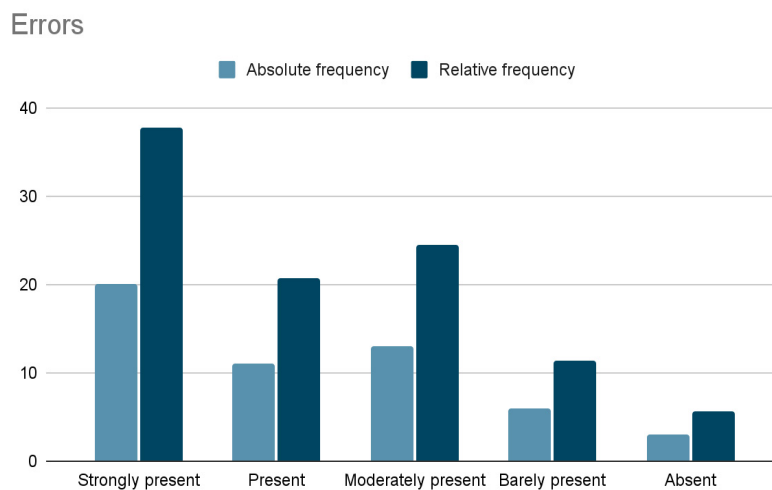


Source: own elaboration

Of the fifty-three (53) subjects surveyed, seventeen (17), representing 32.08%, chose the "Always" option and another group of the same size chose the "Sometimes" option. In short, respondents tend to respond immediately to work assignments, and being subjected to high stress, their immediate reaction speed is significantly reduced, causing work situations to be resolved in an unpredictable way. On the other hand, ten (10) subjects, which were 18.87%, selected the item "Almost always", five (5) subjects (9.43%) selected the item "Almost never" and four (4) subjects, who represented 7.55%, indicated the item "Never". The mean of the indicator gave as a result an average of 3.60 in the presence of work stress in the immediate reactions. It is appropriate to note that the results of the item Immediate Reactions coincide with previous investigations [33], which state that immediate reactions are the abilities that an individual has to take action in response to a stimulus and that these can be conditioned in stressful situations.

Continuing in the same line, the result of the Errors item is shown:

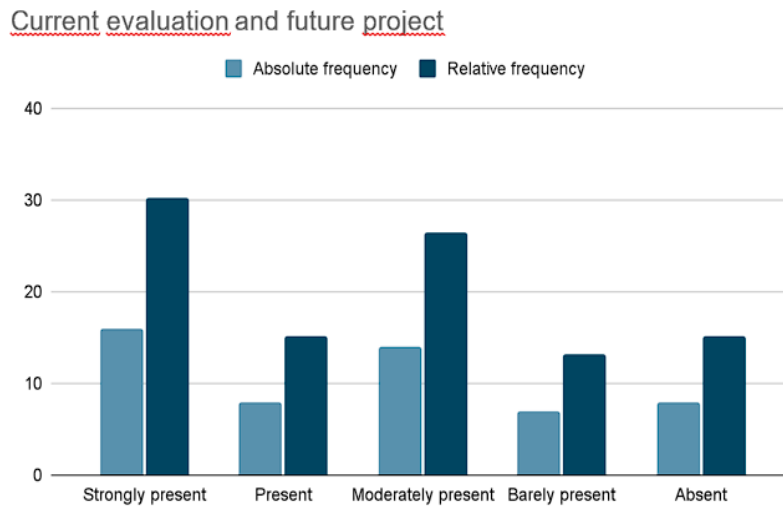
Figure 4. Errors



Source: own elaboration

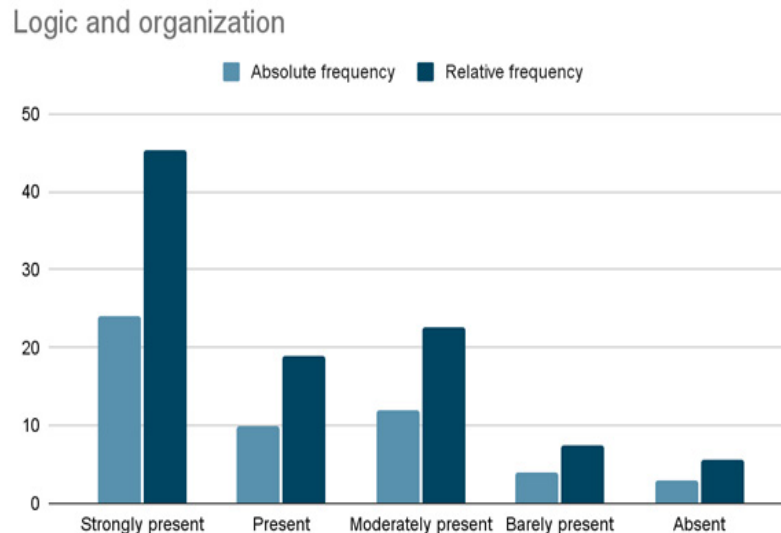
For a total of fifty-three (53) subjects, twenty (20) of them, constituting 37.74%, favored the response option "Always" when asked if there was any influence of stress on mistakes made by employees in their different work situations. In turn, thirteen (13) workers, being 24.53%, supported the response "Sometimes", eleven (11) collaborators (20.75%) selected "Almost always", six (6) subjects, which reflect 11.32% selected "Almost never" and, finally, three (3) reporting units, representing 5.66%, expressed the "Never" option with the approaches indicated in advance. Likewise, the arithmetic mean yielded an average of 3.80, concluding that stress is "Present" in labor errors. These results also support previous investigations [33], when he comments that, when a very stressful situation is generated at work, it is most likely that in order to solve it, the employee cannot avoid making a large number of mistakes.

Figure 5. Current evaluation and future project



Source: own elaboration

Subsequently, the indicator Current evaluation and future project, showed that, of the fifty-three (53) subjects interviewed, sixteen (16) of them, representing 30.19%, chose the alternative "Always", when questioning whether Stress is an impediment when making evaluations for the achievement of future projects and, therefore, undermines the Hotel project in the long term. In the same way, fourteen (14) subjects of the study population (26.42%) chose the answer alternative "Sometimes", eight (8) subjects selected the option "Almost always", another eight (8) chose the alternative "Never" and, finally, only seven (7) interviewees stated that "Almost always". This indicator gave an arithmetic mean of 3.30. In this regard, other investigators [33] affirm that in stressful situations in the workplace, the mind of an employee is incapable of making accurate assessments of day-to-day situations and will probably be wrong in the future assessment.

Figure 6. Logic and organization

Source: own elaboration

Finally, the results of the Logic and organization indicator show that, of the 53 subjects, 24 of them (45.28%) selected the alternative "Always", recognizing that compliance with logical patterns of work activities in hotel companies for which Those who work are affected by work stress, which negatively affects the final results of the entire organizational process. Likewise, 12 subjects, representing 22.64%, chose the alternative "Sometimes", 10 subjects (18.87%) stated that "Almost always" is like that, four (4) subjects, with 7.55% , indicated that "Almost never" is like that and three (3) subjects, with 5.66%, indicated that "Never". The average of the indicator returned 4.00. This also corresponds to previous investigations [33] that explain that the way of thinking of the individual affected by stress will not follow logical patterns and will act in a disorganized manner.

Ultimately, when globally evaluating the results of the survey designed to measure the affectation of cognitive functions due to work stress in conjunction with their respective indicators (concentration and attention, memory, immediate reactions, errors, current evaluation and future project and logic and organization), an average of 3.70 has been obtained. This means, in general terms, that work stress is "Present" in the affectations to the cognitive functions of the employees of the hotel companies in the city of Sincelejo, Colombia.

Conclusions

Once the results of the research have been interpreted, the process of hiring and reflecting on the findings obtained from the study focused on the characterization of work stress in cognitive functions present in hotel companies in the city of Sincelejo-Sucre is carried out. In the first instance, the indicators concentration and attention, memory, immediate reactions, errors, logic and organization and current evaluation and future project are present in the study sector.

Various studies in turn show how stress materializes through cognitive functions, causing consequences for the health of the worker and the performance that he has within his working day through affections to memory, attention and other proven elements. within this study [34, 35]. For the mentioned studies, the affections to the cognitive functions are a consequence of the stress that acts as a moderator towards other impacts of the individual and the organization.

Certainly the findings show considerable levels of stress present in the cognitive functions of workers, being contrasted with scientific evidence that mentions how stress affects labor productivity and suggests the involvement of functions at the cognitive, emotional, physiological and behavioral level [36, 37]. In this way, it is important that within the strategic level of the organizations these elements are taken into consideration for the study and assurance of health within the body of collaborators. Scientific evidence proves the importance of leadership as a mediating factor towards the reduction and prevention of stress in the workplace [38, 39].

The present study, by only being based on cognitive functions, allows us to recommend the relationship of new studies within the context worked focused on emotional, physiological and behavioral functions [40]; so that, based on field data, these actions can be adequately undertaken and that it addresses the complexity of the effects of work stress in hotels in the city of Sincelejo - Sucre. With reference to the cognitive functions related to the current evaluation and future project, the combination of linked factors is suggested, both with the stress itself and with the cognitive capacity at stake, through the construction of conscious and intentional memory or those that require reasoning. flexible and abstract so that the employee is aware of the reality at work [41, 42, 43, 44].

It is highlighted that for the above, workshops would be generated with experts in the management of cognitive functions with coaching processes, with the aim of carrying out learning as a professional strategy in the hotel companies studied in a six-month period of time and waiting for the results of the same to continue applying them in the course of time [43]. It is also pointed out that the Human Capital management of each hotel company would assume responsibility for its organization and execution, considering all the required resources, from the place where the workshop will be held, to the materials required.

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