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OCCUPATIONAL SAFETY AND HEALTH IN THE HEALTH SECTOR: AN ANALYSIS FROM THE PERCEPTION OF THE WORKERS.

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ABSTRACT

Compliance with occupational health and safety measures is of great relevance for the control and prevention of occupational diseases and accidents in the health sector, requiring greater efforts during the COVID-19 pandemic to minimize the spread of infection in health professionals, their families and the community in which they live. The present research evaluated the workers' perception of the implementation of the occupational health and safety system, comprised of 3 dimensions. A survey was conducted based on entities in the health sector between August 2021 and May 2022, taking into account a sample of 306 workers and a response rate of 100%. It was initially possible to characterize the population, which is made up of 69% women between 18 and 45 years of age and 31% men between 26 and 60 years of age, most of whom have more than 5 years of experience. The discussion oriented to the results allowed to evaluate the perception that workers have of the dimensions of safety and health at work and the different factors that compose it, determining the weaknesses that should be addressed to improve its management, taking into account that the large number of cases of infection by covid-19 in this population could be related to the lack of specific training on the care and use of Personal Protective Equipment - PPE - among other factors.

INTRODUCTION

The incorporation of occupational health and safety in companies is seen as a great possibility for organizations to make sustained progress in working conditions and their effects on productivity. However, for the different sectors of the economy, compliance with the legal provisions in this field is not a sufficient guarantee to prevent undesirable situations, a scenario that should make them aware of the urgent need to integrate, in their organization, an occupational safety and health management system, as a strategy that paves the

way to achieve the best overall results (Baena, 2015, p. 56). In other words, the management of occupational safety and health systems should not only be based on prescriptive principles and detection of non-compliance, but also on proactive principles, including an examination of how legal compliance affects day-to-day performance (Salguero et al., 2020).

Currently, according to the World Health Organization (2020) there is a worldwide consensus on the importance of workers' health, specifically the health sector acquires a special relevance due to the great responsibility it assumes, even more so, in the face of the crisis generated by Covid-19. The health sector employs more than 20 million workers in Latin America and the United States, which represents more than 5% of the economically active population and 7% on average of the Gross Domestic Product. Worldwide, more than 76% of medical and nursing personnel are women, although the proportion varies considerably depending on the profession and type of specialization. This workforce is also essential for the performance of health systems in the Region and the world.

On the other hand, Álvarez and Riaño (2018) state that, the characteristics of the health care service itself, is directly linked to the health and safety conditions in which the different professionals work in these entities. Therefore, achieving a balance between the needs of the person receiving care and the service providers it is an ambitious challenge in an environment with different external factors that are difficult to control. In addition, the development of new technologies, the health system reform processes, the crisis generated by covid 19 and the loss of valuable professionals who emigrate in search of a better future, among other factors, are negatively impacting human resources.

On the other hand, international standards establish the principle of protection of workers with respect to health care and life. However, every day people die as a result of occupational accidents or work-related diseases, according to data projected in the world report on social protection, according to the ILO (2021) there are more than 2.78 million deaths per year, and some 374 million non-fatal work-related injuries are reported, resulting in more than 4 days of work absenteeism. According to, Romero et al. (2022), these indicators not only affect the health and life of workers but also the economic system of organizations and the health system, derived from the weak safety and health practices in the country and in the world every year

In this sense, Cierniak and Manzur (2022) state that the issue of safety and health at work has been gaining strength, since the accelerated growth has required governments and international entities to design regulations aimed at ensuring the welfare of labor, as is the case of the International Standard OSHAS 18001, being the step or evolution and change from a restorative approach against damages caused to people to an administrative approach focused on the ways of acting of the organization to preserve the life and health of workers, later according to Palacic (2018), the standard was annulled by the current ISO 45001 standard which establishes the minimum requirements for the implementation of the Occupational Health and Safety System, its

application is voluntary and for purposes of certification or accreditation before national or international entities.

The management of occupational health and safety has certain characteristics which must be taken into account when designing and implementing the management system, in this sense it is essential to generate a preventive culture permanently, in order to protect the health and life of workers through compliance with specific safety measures and therefore it is not enough to certify that there are or have been proposed safety measures, but that compliance with them and the articulation of all areas of the organization is evidenced (Grandez et al, 2022).

Having stated the above, the objective of the article is to analyze through a descriptive type study with a quantitative approach, the occupational safety and health system of companies in the health sector, basing the research on the provisions of Decree 1072 of 2015 and the requirements of the Colombian Technical Standard NTC ISO 45001: 2018 (occupational safety and health management system-requirements for its management) determining the perception that workers have about the same system.

This paper presents the theoretical foundations of the research related to human management and occupational safety, then summarizes the methodology used for the development of the study, followed by the results and discussion of the results and finally the conclusions implications, and future lines of research.

HUMAN CAPITAL THEORY

The foundations of the human capital theory argue that aspects such as knowledge and health of workers increase productivity and economic growth of organizations, in this sense, Schultz (1960) supported for the first time in his "Teller Lecture" the concept of human capital, later his position is clearly expressed by Smith (1776) in chapter ten of his book "Wealth of Nations", in which he states that man should be remunerated according to his investment in education. Subsequently, Becker (1964) systematized Schultz's contributions and formally developed the theory of human capital in his book "Human capital". The main idea of his contributions was based on the importance of education and training as investments to increase productive efficiency and income. Lewis (1980), continuing Schultz's work, considered food and health as determinants of productivity; therefore, the organization, regardless of the economic sector in which it is located, should facilitate its workers' access to medical services, encourage healthy eating habits and, finally, provide them with an adequate place to rest. Similarly, Muskin (1962) in his theory states that people are much more productive if health and education conditions are favorable for workers.

LITERATURE REVIEW

The specialized literature related to occupational health and safety management has been evolving. This section summarizes the theoretical and empirical research on this topic, addressing research by different authors in databases such as Scopus, Wos, Redalyc.

The issue of occupational health and safety is an important element in organizations, because it contributes significantly to their continuous operation, productivity and efficiency. Consistent with the above, authors such as Barrios (2020), consider that accidents or occupational diseases affect workers and organizational performance, as well as decrease the results and sustainability of companies, reflected in the loss of working hours of employees and delays in production, which negatively affects the quality of the product or service and the reputation of the company.

Regarding the theoretical foundation of Occupational Safety and Health, Pérez and Castillo (2016) consider that it was influenced by the theory of human capital, in which personnel training and health care were considered as determining factors in individual productivity and the economic growth of organizations.

According to Marhavidas et al., (2018), many companies have adopted occupational health and safety management systems, through certification processes, which describe the requirements for the implementation of activities that minimize risks and reduce occupational accidents and occupational diseases arising from work; being more frequent, the concern for improving the sustainability of the organization and the safety of its workers, through the identification and evaluation of risks, and the establishment and enforcement of its internal policies on OSH.

On the other hand, for Bortolini et al. (2022), safety management strategies must take into account age-related factors, so that all workers, regardless of their age, feel safe and committed to the achievement of personal and corporate objectives. According to these authors, the severity of a workplace accident increases with the likelihood that the accident involves an older worker, they are more likely to suffer from chronic health problems and are exposed to hazards in the workplace for longer periods of time. In this context, occupational safety and health management must evolve, developing return-to-work procedures and workplace changes to avoid prolonged sick leave and early retirement for health reasons.

From their study on the return of prevention in Italy in the health sector, Guarini and Ranieri (2020) state that activities aimed at the prevention of accidents caused by work activities, if properly implemented, will be effective for the management of the organization's financial resources. Likewise, it is necessary to carry out an evaluation to identify the incidence of accidents not only in the health sector but in all sectors of the economy by analyzing the effectiveness of the operations carried out within the occupational health and safety system and the economic impact it has on companies.

For their part, Mutlu and Altuntas (2019) were interested in analyzing the occupational risk factors in the occupational safety and health system, considering the results for the implementation of accident prevention policies of the National Council of the Turkish Republic as useful. They state that occupational accidents often occur due to multiple factors that are associated with equipment, working conditions and organizational factors. As results of

their study, they found 5 factors that were directly related to the accidents presented such as: the equipment used, special activity, general activity, place of the accident and the profession.

In the same sense, Kahoa et al., (2019) conducted research with the objective of identifying the factors that generate the weak application of accident and disease prevention measures in companies. Through a semi-structured interview, they analyzed the perception of workers regarding criteria of the occupational safety system such as prevention concepts, occupational accidents, occupational diseases and risk factors, as well as behaviors and attitudes towards prevention processes, the interviewees had a lack of knowledge of prevention measures in companies. On the other hand, they conclude in their report that a promotion and prevention policy and an adequate training program for safety committees will contribute significantly to the creation of a culture of prevention and consequently improve the quality of life of workers.

Hamid A. et al., (2019) conducted an analysis of accident statistics and their causes in the health sector in Malaysia, focusing on 129 fatales cases and taking as a basis the information provided by the occupational safety authorities in this country. Among the results they found that the number of accidents due to work activities are increasing year after year, they identified as main causes the unsafe methods, the nature of the sector and the conditions related to the workplace, on the other hand, being a high risk sector, it is essential to take measures in the management of occupational safety and health in order to obtain better results in the shortest possible time.

McGregor et al., (2018), in study investigates the health of workers associated with environmental factors, through a self-report survey that relates 13 health conditions (allergies... stress), and nine related to the work environment (lighting, organizational policies, workload), applied to 229 workers, within the results obtained they identified stress and tension due to workload as a common factor. Other factors associated to a great extent are allergies, blood pressure together with poor leadership and lack of promotion opportunities. Finally, they determined the need to find the points of intersection between occupational health and environmental factors, which could be an efficient way to improve the general wellbeing of employees and thus achieve a reduction in the levels of absenteeism.

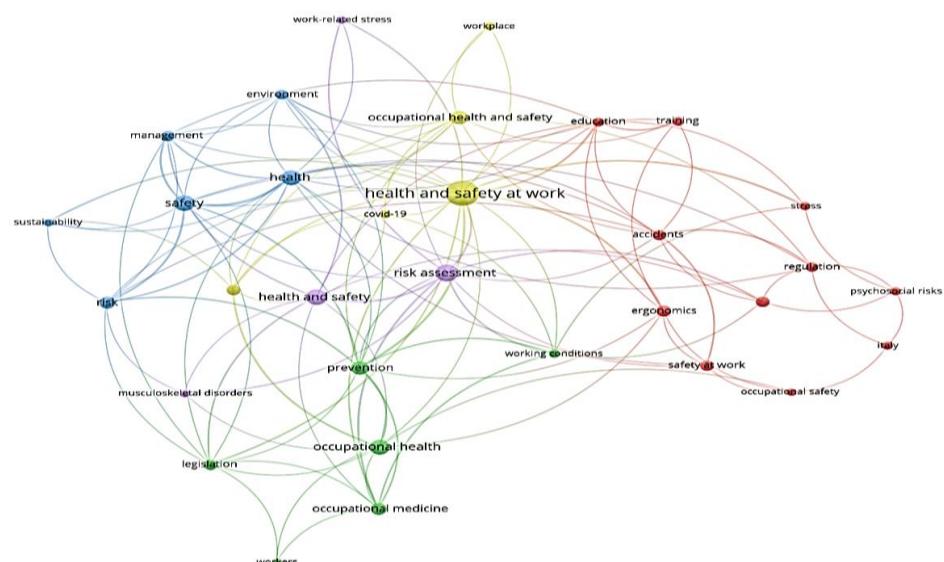
On the other hand, Hurjui and Hurjui (2018) analyzed occupational accidents and their impact on the health of employees in Europe, which have been increasing, becoming one of the main challenges of the European social policy on safety and health at work, likewise they state that it is the employer who has the obligation to take the necessary measures to preserve the life and health of their workers, evaluating the risks and dangers to which they are exposed, training the personnel and allocating the necessary resources for the management, on the other hand they mention the importance of the allocation of professional specialists in safety issues for the supervision of the activities and the establishment of adequate and safe areas to develop the activities inherent to the work..

In affinity with the above, Antao et al., (2016) and Reichard et al., (2017) consider that there is a deficit in the application of occupational safety and health policies, strategies and programs in most countries in all continents, due to the deficient infrastructure, institutional and human resources, coverage capacity, scope and content of these OSH strategies. It was also shown that emergency medical service workers present sprains and strains due to body movement in lifting and transferring patients and/or equipment, and that injuries are presented due to exposure to harmful substances.

These results are similar to those obtained by authors such as Marhavidas et al. (2018), who argue that in the scientific literature four stages stand out, regarding quantitative risk assessment, which are clearly evidenced in research conducted by authors such as Marhavidas et al., (2011), Gómez (2021) and Dubosson et al., (2022), in the first stage, a qualitative analysis is carried out where the definitions of the system and its scope are incorporated, in addition to identifying and describing the hazards and scenarios where they may occur; in the second stage, a quantitative analysis is developed, through quantification and the use of graphs in which the probability and consequence of undesirable events are incorporated; In the third stage, risks are evaluated according to the results obtained in the analysis of the previous stage; and in the fourth stage, a risk control and reduction phase is carried out, for which measures are adopted that contribute to risk reduction, exercising controls such as inspection, maintenance or warning systems.

Consistent with the above, authors such as Marhavidas et al., (2011), Ilbahar et al., (2018), and (Gul and Ak (2018), showed that in the literature a large number of research on occupational safety and health assessment of qualitative, quantitative and mixed type has been developed; from 2000 to 2022, 565 articles have been published in the Scopus database, being 2018 and 2019 the years of greatest publication. The area of highest publication on the topic Occupational Safety and Health is Business, management and accounting, followed by computer science and health sciences. The most used keywords are occupational safety and health, risk, occupational health and occupational medicine, as can be seen in the following figure.

Figure 1. Keywords in occupational safety and health studies in the Scopus database, performed through VOSviewer.



METHODOLOGY

A descriptive methodology with a quantitative approach was applied, based on that described by Hernández et al. (2014), which allowed identifying the characteristics, elements and components of the occupational health and safety management systems in companies of the health sector, in addition to determining the impact they have on the quality of life of their workers.

The participating organizations are registered in the chamber of commerce and have their respective license to operate. Eight (8) companies with a total of 306 workers contributed to the research; for confidentiality reasons, the companies involved will not be mentioned. As selection criteria, these companies had to be formal, have more than five (5) years of operation and a number of workers over 8, including administrative and health personnel.

For the collection of information, a survey format was designed consisting of 35 questions organized in two sections: the first with the purpose of identifying the socio-economic characteristics of the respondents and the second with questions that allowed evaluating the occupational health and safety systems implemented by the companies, taking into account 3 dimensions: 1: Implementation of policies, guidelines and dissemination of the occupational health and safety management system. 2: Planning and implementation of the occupational health and safety management system. 3: The evaluation process.

Procedure. For the validation of the instrument, the judgment of two experts was used and a pilot test was applied. Through the Cron Bach Alpha formula, an adequate validity of α : 0.79 was obtained. In the process of collecting information, it was necessary to contact and request authorization from the managers of each of the companies, and then the application of the instrument to the administrative and health personnel of each of the organizations was scheduled.

ANALYSIS AND RESULTS

The 306 workers of the companies in the health sector were surveyed, 69% of whom were female and the remaining 31% were male. In addition, information was collected regarding their age, level of education and years of experience in the sector, as shown in the following table:

Table 1. Characterization of the population

Dimensions	Characteristics	Participation
Participants	306	
Genre	Femenino Masculino	69% 31%
Age	18 a 25 años 26 a 35 años 36 a 45 años 46 a 60 años 61 o más años	13% 21% 39% 22% 5%

Distribution by age and gender	18 a 25 años	Women	Men
	26 a 35 años	12%	5%
	36 a 45 años	41%	39%
	46 a 60 años	23%	20%
	61 o más años	20%	28%
Experience in the healthcare sector	Menos de (1) año	8%	
	De 1 a 5 años	15%	
	Más de 5 años	77%	

The second section of the instrument included 3 dimensions to be evaluated, the first three with a rating scale from 1 to 5, being 1 very low and 5 very high.

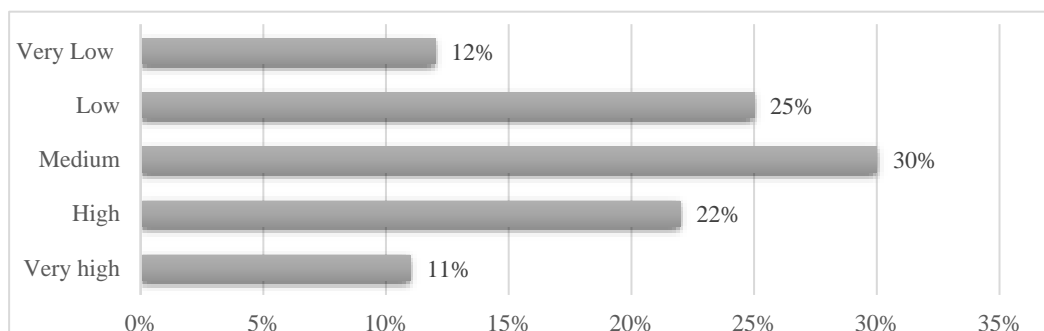
Tabla 2. Dimensiones evaluadas

Dimension	Criteria
Policies and System Addressing	Implementation and diffusion of the system
Planning and application of the occupational health and safety management system.	Training, induction and training
	Deliveries of personal protection elements
	Occupational medical exams
	Staff involvement
	Motivation, rewards, and promotions
Evaluation	Labor and health conditions
	Action plans and indicators of labor incidents and levels of absenteeism

Dimension 1. Implementation of policies, guidelines and dissemination of the occupational health and safety management system.

In relation to the level of implementation of the policies, dissemination processes and socialization of the occupational health and safety system, it is observed that around 63% of the respondents consider that they have considerable knowledge about the management system and its policies in the organization, 37% consider that they have low-very low knowledge and/or have not participated in the socialization processes.

Figure 2. Knowledge of the management system and its policies

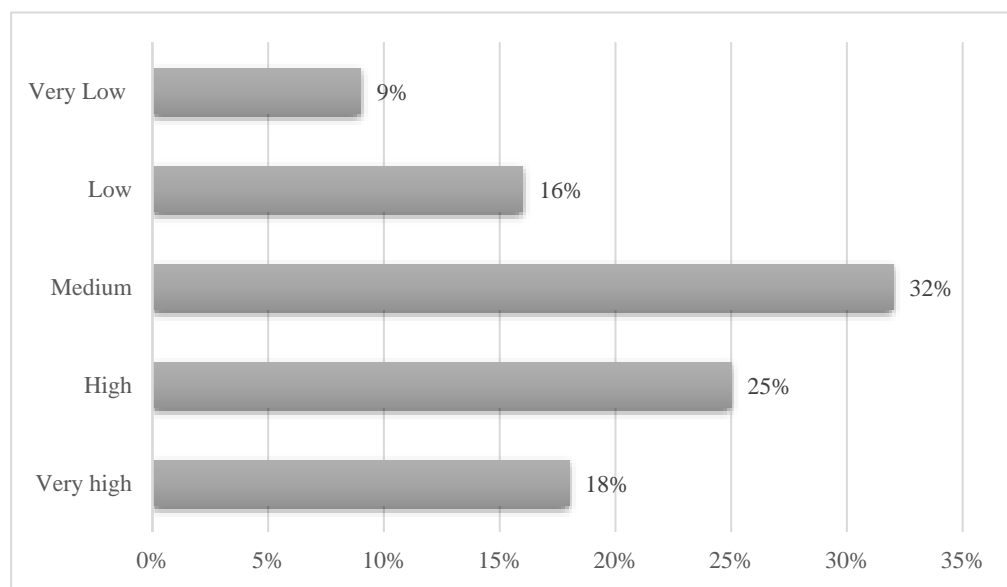


Dimension 2: Planning and application of the occupational health and safety management system.

This dimension included issues related to training, qualification, induction, delivery of personal protection elements, occupational medical examinations, hazard identification and risk assessment, participation and motivation, and health and work conditions of the population.

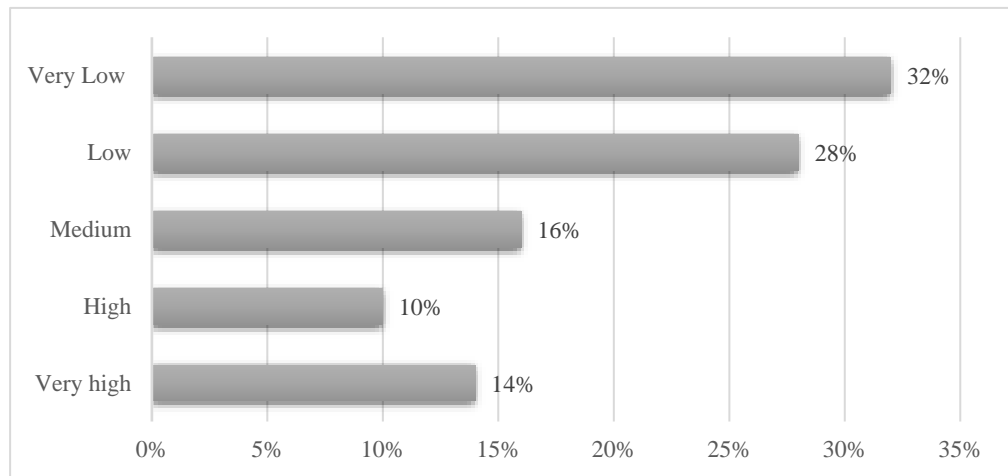
Regarding the training received, the induction processes and the elements of personal protection ordered for their activities, 75% of the respondents stated that they were satisfied with the processes carried out, presenting a range of qualifications between medium and very high, the remaining 25% have some disagreement, for which they assigned a rating between low and very low to the training activities carried out and the protection elements, since some consider that their personal protection elements are delivered without complying with the regulatory conditions, they are not replaced on time and /or they do not receive sufficient training for their proper use and maintenance, which should be more relevant in the face of the covid-19 pandemic.

Figure 3. Degree of compliance with the training processes and delivery of personal protection elements.



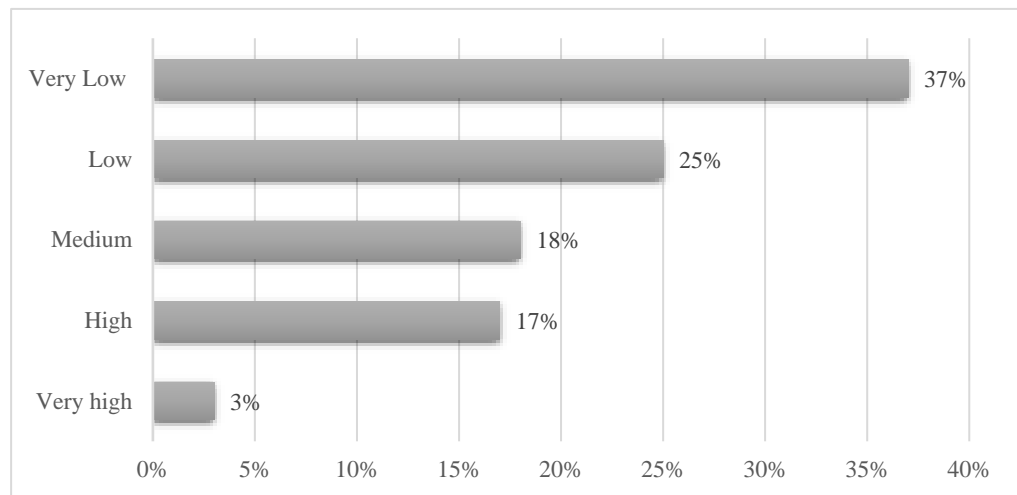
An important aspect is related to the application of occupational medical examinations such as: entry, periodic and retirement, in this aspect 60% of the staff is dissatisfied with this process, they consider it to be a great weakness of the security system and health at work and as a result of their hiring process, workers in the sector stated that in some cases they have only undergone the medical examination at entry and not the periodic examination to monitor their health conditions, and in other cases No type of examination has been carried out on them, the remaining 40% consider that this process has some degree of effectiveness and they express relative conformity with the functions they perform.

Figure 4. Perception about the performance of occupational medical examinations.



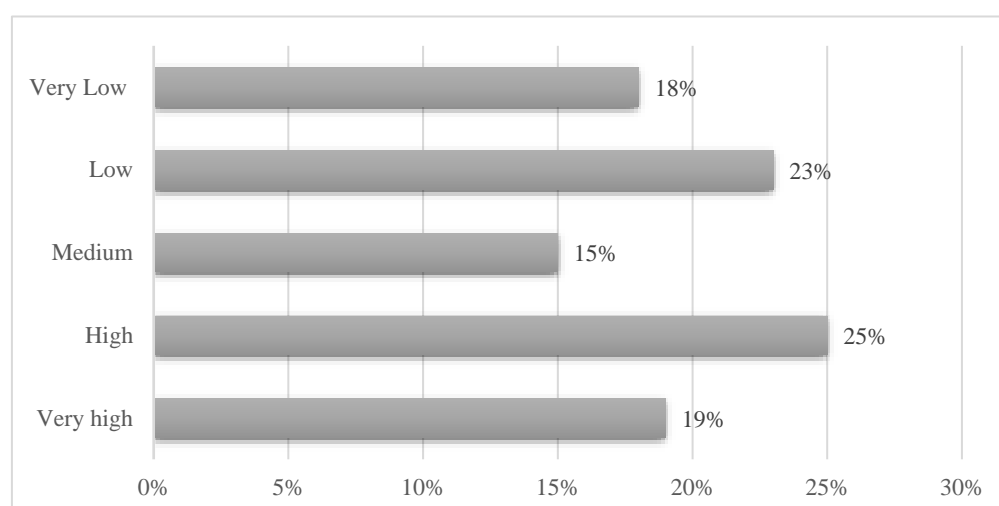
In relation to motivation, rewards, promotions, working and health conditions, 62% affirm that the system has weaknesses and promotion opportunities are few, they also affirm that working conditions are not the best considering that in this sector the labor outsourcing system is used and they are not hired directly by the health institution, but through Cooperatives and Employment Exchanges, 18% consider that their form is moderate, and only 20% claim to be satisfied with the criteria evaluated and have a high degree of motivation.

Figure 5. Motivation, rewards, promotions, work, and health conditions.



Dimension 3. Evaluation

In this dimension, issues related to action plans focused on minimizing risks, preserving the health and lives of workers, and accident indicators were evaluated. In this case, it was observed that 55% assigned a very low rating, considering as actions developed by the organization are inefficient, 18% claim to have moderate conformity in this aspect and only 21% consider them efficient.

Figure 6. Action plans and indicators of accidents, absenteeism

DISCUSSION

Through this research, it was intended to analyze the occupational safety and health management systems from the perception of workers of companies in the health sector located in Ocaña, Norte de Santander Colombia, being a high risk sector and requiring greater commitment at the time of implementation of activities that allow preserving the health and life of workers, likewise it is a sector that has been considerably affected by its leading role in front of the crisis generated by the Covid-19.

It was found that in the health sector the effectiveness of the systems is too low and actions should be prioritized to improve the activities by complying with the provisions of Decree 1072 of 2015 of the Ministry of Labor, with the purpose not only to prevent accidents and occupational diseases, but also to minimize the economic impact that this can bring to the organization and the sanctions for non-compliance with all measures.

Regarding the dimension. Implementation of policies and socialization of the OSHMS, it is clear that in most of the organizations, they have carried out activities so that the workers know the policies, appropriate the knowledge related to the system, being one of the first activities to be carried out in the implementation process, which coincides with what was raised by Vega (2017) who states that occupational safety and health is being limited to an exercise only of dissemination and until safety does not become a matter of the entire organization and resources are allocated for the implementation of all activities related to the system, the results will not be satisfactory.

In consideration of the training processes they consider that the trainings are not sufficient, some of the personal protection elements do not comply with the regulatory standards, and in many of the cases the workers do not receive the instructions for their use and maintenance, which coincides with the findings of the research exposed in by Mutlu and Altuntas (2019) in relation to the deficient allocation of equipment increases the risks of accidents and occupational diseases.

Occupational medical examinations are important within occupational safety and health management and correspond to assessments performed by physicians specialized in occupational health, who are responsible for examining workers taking into account the generalities of the job, the worker's medical history, symptoms associated with occupational diseases and the identification of the risks to which he/she may be exposed. These examinations must be carried out before the worker enters the company, during the performance of his/her work (once a year) and at the end of the employment relationship, in order to determine the health conditions with which a worker enters the company, his/her condition during the provision of services or the duration of the contract and the conditions in which he/she leaves the organization. In this aspect most of the workers assigned a low qualification considering that there are very few who have had access to this type of examinations, in some cases they are not performed by occupational health professionals and in others they are not accompanied by evidence to support the results of such evaluation, an excess of confidence is observed in the organizations of the health sector, because they consider themselves exempt from this obligation (Albalá and Guido, 2020).

Another topic evaluated was motivation, rewards and promotions system, of which there is great disagreement, a topic that only applies when it is necessary to achieve some specific results and in a short time and not a permanent program implemented in the organizations, also workers mostly consider that the opportunities to advance professionally in their work are limited and accessible only to some.

It is noteworthy that the 8 companies have occupational health and safety management systems, however, they present deficiencies in their implementation, being a sector that is classified as high risk, as Rodriguez (2020) expresses it is not enough for companies to have policies and procedures if these are not implemented properly.

CONCLUSIONS

Companies in the health sector in the city of Ocaña have occupational safety and health management systems (OSHMS) that are subject to improvement, since the findings show that the degree of implementation is still weak, demonstrating little commitment to the protection of workers' lives and the lack of alignment between organizational culture and compliance with policies, It is not enough to plan the system and identify the hazards associated with the activities performed by the workers, if the measures to mitigate them are not determined and complied with, and consequently there is an increase in the accident and occupational disease rates in the country.

In relation to the characterization of the population working in the health sector, the great majority belong to the female gender between 18 and 45 years of age, and the male gender in a smaller proportion, with ages ranging between 26 and 60 years.

It can be concluded that risk management in this sector from the workers' perception is limited to compliance with legal regulations and the handling of documentation, with few controls or measures implemented to reduce hazards

and improve the working conditions of their collaborators; the large number of cases of covid-19 infection in this population could be related to the lack of specific training on the care and use of Personal Protective Equipment (PPE), among other factors.

Consequently, it is essential that at the moment of designing the management systems there is a real commitment of the organization and the necessary resources are assigned for their proper functioning, so that they can fulfill their purpose of preserving the life and health of workers, subsequently demonstrating their positive impact on the indicators of accidents and occupational diseases, as well as on the quality of health care.

Finally, future lines of research are suggested, in the field of safety and health at work, that broaden and deepen the theoretical and methodological development and that give responses to the demands and needs of the various contexts, which can address comparisons between countries Latin American and European and Asian countries.

List of abbreviations

ILO International Labor Organization
NTC: Colombian technical standard
OSH Safety and health at work
OSHAS: Occupational Health and Safety Assessment
PPE Personal protection elements
SG: Management System

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