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Health and safety management system as a strategy to reduce occupational diseases

Sistema de gestión de seguridad y salud como estrategia para disminuir las enfermedades laborales

RESEARCH ARTICLE

ABSTRACT

Constant changes in society affect the labor market, imposing on companies the responsibility of offering quality living and working conditions to their employees. The objective of the study was to design a Safety and Health Management System as a strategy to reduce occupational diseases at the San Vicente de Paul de Fomeque E.S.E Hospital. The approach is quantitative, projective, descriptive, non-experimental design. The sample consisted of 20 people intentionally selected. Structured multiple-choice interviews were used. The findings show a low compliance with current regulations (Decree 1072 of 2015) and the SG-SST manual at the San Vicente de Paul de Fomeque E.S.E Hospital and its affiliated health centers. It is concluded that, given the nature of the institution and occupational risks, it is feasible to implement the Occupational Health and Safety Management System (SG-SST) manual and a self-care format based on said system.

Keywords: Diseases; Management, Labor; Health; Safety; system

RESUMEN

Los constantes cambios en la sociedad afectan el mercado laboral, imponiendo a las empresas la responsabilidad de ofrecer condiciones de vida y trabajo de calidad a sus empleados. El objetivo del estudio fue diseñar un Sistema de Gestión de Seguridad y Salud como estrategia para disminuir las enfermedades laborales del E.S.E Hospital San Vicente de Paul de Fomeque. El enfoque es cuantitativo de tipo proyectiva, descriptiva, diseño no experimental. La muestra fueron 20 personas seleccionadas intencionalmente. Se utilizaron entrevistas estructuradas de opción múltiple. Los hallazgos evidencian un bajo cumplimiento de la normatividad vigente (Decreto 1072 de 2015) y del manual de SG-SST en el E.S.E Hospital San Vicente de Paul de Fomeque y sus centros de salud adscritos. Se concluye que, dada la naturaleza de la institución y riesgos laborales, es viable implementar el manual del Sistema de Gestión de Seguridad y Salud en el Trabajo (SG-SST) y un formato de autocuidado basado en dicho sistema.

Palabras clave: Enfermedades; Gestión, Laborales; Salud; Seguridad; Sistema

INTRODUCTION

Constant changes in society also impact the labor market, creating new demands for companies. They must adapt to offer an ideal and quality standard of living to their employees. In this way, the company not only meets its objectives, but also ensures that the needs of its clients or users are met. To achieve this, it is essential that employees work in optimal conditions. However, in many cases, inadequate working conditions can deteriorate the workers' health. Improving working conditions is essential to protect health, which contributes to the well-being of the employee, his family and a significant increase in the company productivity.

In Colombia, Occupational Health and Safety has evolved thanks to the regulation and adjustment of standards, adapting to the needs of organizations. These standards focus on protecting the health and quality of life of workers by preventing occupational diseases and accidents. Productivity and effectiveness in different organizational processes depend on this protection. It is important to note that many occupational accidents and diseases are due to the lack of self-care by workers. Improper use or lack of Personal Protective Equipment (PPE) and the omission of self-care practices can result in injuries, loss of work capacity, illness, disability or even death (González et al., 2016). This problem often has cultural roots, since some workers, due to overconfidence or obeying to old methods, may consider that following current protocols is unnecessary or complicated (Angarita and Cortes, 2018).

In relation to the topic, Gómez et al. (2021) carried out research with the aim of designing an Occupational Health and Safety Management System for the company Garzón y Asociados SAS, in accordance with the provisions of Decree 1072 of 2015. Using the GTC 45:2012 methodology, the research identified and analyzed the hazards present in each work activity and assessed the associated risks. This approach made it possible to prioritize the most critical risks and develop an action plan to mitigate them, which contributes to the prevention of occupational diseases and accidents. These findings provide a solid framework for designing and implementing effective preventive measures, helping to significantly reduce accidents and illnesses at work, and promoting a safe and healthy work environment.

It is important to note that a well-designed workplace health promotion program can be highly effective, demonstrating benefits for both workers and companies. These benefits include increased productivity, reduced absenteeism due to illness, improved labor relations, and increased employee self-esteem, as well as a better public image for organizations that implement these programs (Goneth, 2015). Furthermore, with the globalization influence on work models worldwide, companies, including health institutions, have found it necessary to develop occupational health and safety management systems to ensure the employees well-being and improve their productivity (Gallo and Terán, 2017).

Thus, hospital safety management becomes more relevant as the risk panorama within a company expands. Although the total elimination of occupational illnesses and accidents cannot be guaranteed, preventive management can significantly reduce accident and illness rates. The objective of safety at work is to promote and maintain the highest degree of physical, mental and social well-being of workers in all their activities; to protect them from risks that may affect

their health; to ensure that employment is suited to their physical and psychological capacities; and, in general, to adapt work to the human being and each person to their activity.

It is essential to highlight that building a culture of prevention in the hospital environment begins with knowledge of the risks. Safety culture is closely linked to the quality of care service, which makes these concepts of particular interest in health institutions (Figueroa and Hernández, 2021). To measure risks in a system, two factors are mainly considered: the happening probability and the impact that their happening would have on the system. Intervention to address these vulnerabilities is called prevention. Although prevention does not guarantee the complete absence of damage, it does reduce the impact of adverse events. When an impact occurs, measures to minimize damage or loss are known as mitigation. Risk analysis is crucial to reduce the impact of possible scenarios, from the least severe to the catastrophic. Preparing for the worst scenarios ensures that you are ready to handle the less serious ones (Renda, 2017).

In this context, the Health and Safety Systems Management culture focuses on positive mitigation, which helps reduce the damage and losses associated with occupational diseases. This is achieved through a series of measures that must be understood and applied in the workplace. These measures are divided into two categories: self-care and institutional.

For his part, Tobón (1986) defines self-care as the daily practices and decisions that a person, family or group performs to maintain their health. These practices, acquired throughout life, are learned skills that are used continuously to strengthen or restore health and prevent disease. Self-care responds to the ability to survive and the cultural practices in which one is immersed. This aspect is essential for people´s life and well-being and those around them. Given its potential to positively influence health and prevent disease, self-care is a key strategy in health protection.

Institutional actions, on the other hand, include the initiatives taken by organizations to ensure the protection and their employees' well-being. It includes the implementation of management systems aimed at occupational health and safety, offering adequate training, providing the necessary resources, and promoting a culture of care in the work environment. In addition, these measures include the creation of fair working conditions, maintaining open communication, supporting mental health, and allocating budgets for comprehensive well-being, covering both personal and group care to obtain effective results (Ortega et al., 2017).

In simpler terms, improving employees' economic well-being should not be seen as the only priority, as it is directly linked to the work they do, which involves both physical and mental effort. Currently, companies' focus is on improving working conditions and the work environment. Factors taken into account include work organization, length of work day, remuneration, ergonomics and psychological pressure.

In this sense, modern work systems no longer consider work and health deterioration to be inseparable. Occupational risks are, to a large extent, the consequence of poor working conditions, so preventing these risks involves addressing their origin, so that work is not synonymous with health deterioration (Ministry of Labor, Employment and Social Security;

Ministry of Education; National Institute of Technological Education; International Labor Organization, 2014).

According to the International Labor Organization (ILO), approximately 2.78 million deaths related to work-related accidents and occupational diseases are recorded each year, as well as 374 million non-fatal injuries resulting in absences from work of more than four days per person (ILO, 2021).

Therefore, the problem identified is not unrelated to the presence of occupational diseases among employees and contractors of the San Vicente de Paul Hospital in Fómeque, Cundinamarca. This issue has been detected through the analysis of the incidence of various diseases in the staff, as well as through medical reports and possible claims that suggest a direct relationship between working conditions and the illnesses suffered. The absence of an Occupational Health and Safety Management System has been recognized as a factor that intensifies this situation, evidenced at the time when work-related diseases were detected among employees, indicating the lack of adequate preventive and corrective measures.

In this context, the present research aims to recommend the design of an Occupational Health and Safety Management System, as a strategy to reduce the occupational diseases incidence at the San Vicente de Paul de Fómeque ESE Hospital and in the associated health centers. In addressing this problem, it has been determined that there is a connection between work accidents and the lack of self-care habits in the performance of work activities, which negatively affects the workers security.

The study has a significant social justification, given that the implementation of an effective Occupational Health and Safety Management System would contribute to improving the working conditions of health sector employees, reducing occupational illnesses and accidents. This benefit would not only be reflected in the workers directly involved, but would also have a positive impact on their families and communities, by reducing the problem of work-related illnesses and injuries.

METHOD

The methodology used in the research focuses on quantitative analysis. The type of research is projective, descriptive because what is sought is to specify the tools, techniques and predictive models to help the population under study, in order to focus on promoting improvement, which allows a parallel between the results obtained in each of the measurement aspects and precise and coherent information to obtain the mitigation of occupational diseases in the collaborators at the San Vicente de Paul de Fomeque ESE Hospital and its affiliated health centers. The research design corresponds to that of a non-experimental one.

The population of this research corresponds to 200 collaborators at the San Vicente de Paul de Fomeque ESE Hospital and its affiliated health centers, with different positions such as in the administrative, emergency and hospital areas. The sample was made up of 20 people. The collaborators had to meet the following variable criteria: an age range between 18 and 40 years, who have presented some occupational disease at the San Vicente de Paul de Fomeque ESE Hospital and its affiliated health centers, with more than 2 years of experience in that

hospital or affiliated centers and collaborators in administrative, emergency and/or hospitalization areas to which the research is directed as objects of study. This means that the sampling is non-probabilistic of an intentional type with criteria to follow according to a specific objective.

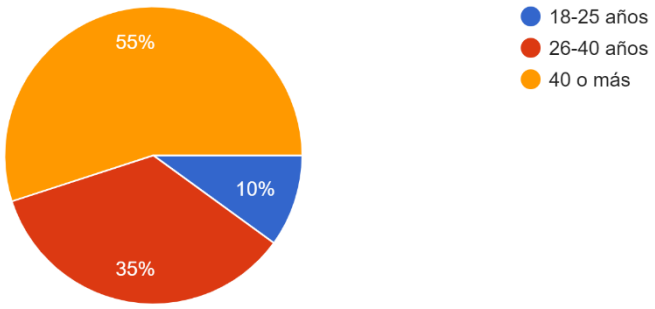
This research data collection instrument is through structured (closed) multiple choice surveys, which are presented through Google Forms and applied to 20 people. The aim is to make estimates of variables in the population; these variables are measured through the Likert scale measurement instrument, analyzed in Excel and then graphed.

RESULTS

The research results are presented below. During this study, the main risks to which workers are exposed were identified, as well as the control measures implemented to mitigate them. The research, with a quantitative and descriptive approach, allowed obtaining a detailed understanding of the current situation in the hospital and its health centers. The data collected on the incidence of occupational diseases, the factors that contribute to their appearance and the institutional response to these challenges were analyzed. Below, with Graph 1, the results begin with the range by age:

Graph 1

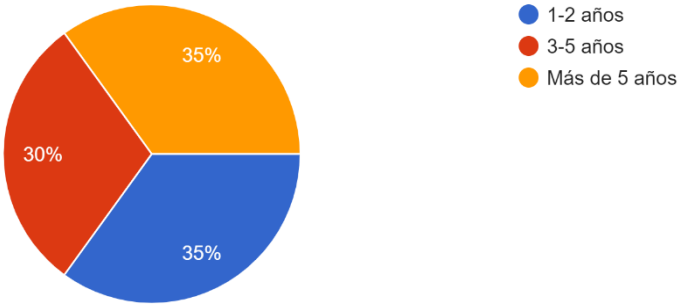
Range by ages



The age distribution sample in Graph 1 shows that the largest group of workers is in the 40-year-old range with 55% of the people surveyed, suggesting that this group could be more vulnerable to occupational risks associated with aging, musculoskeletal injuries or chronic fatigue, among other factors. On the other hand, the age group between 26 and 40 years with 35% also represents a considerable proportion of the population, indicating the need to address the specific risks associated with younger workers in order to mitigate the hospital's occupational risks exposed to potentially risky work environments. Finally, 10% represents the age range between 18 and 25 years. Below is the experience of the collaborators, in Chart 2:

Graph 2

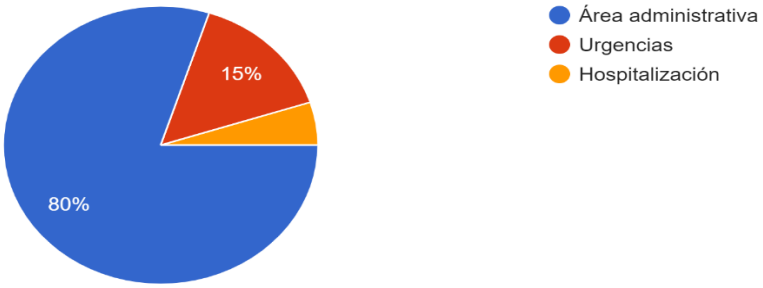
Employees experience: How long have you been working at the San Vicente de Paúl in Fomeque ESE Hospital or its affiliated health centres?



Graph 2 represents a notable balance in work experience between hospital employees and their affiliated health centers, 35% of workers have been in the institution for a relatively short period of 1-2 years, which may be more receptive to new policies and procedures, facilitating the initial adoption of SG-SST practices, and another 35% have a long career of more than 5 years, What this leaves behind serves as crucial accumulated knowledge to identify specific risks and provide valuable information on the effectiveness of the Occupational Health and Safety measures implemented. On the other hand, 30% is represented by employers with a durability of between 3-5 years, which offers continuous updating and improvement, managing their experience to continuously improve SG-SST practices. Below in graph 3 are the areas of performance of the collaborators' work:

Graph 3

Work performance area of. In which area do you perform your work?

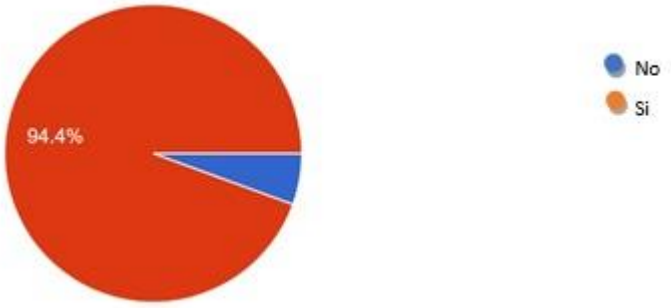


According to the data provided in Graph 3, the majority of staff, 80%, work in the administrative area. 15% work in the emergency department and 5% in hospitalization. These data suggest that most employees are exposed to risks related to office work, such as musculoskeletal disorders due to prolonged postures, work stress and visual fatigue. As for emergency and hospitalization staff, although they represent a minority, they are also exposed to particular risks, such as exposure to biological agents, workplace violence and physical strain. Below, in Graph 4, illnesses in recent months:

Graph 4

Occupational illness in the last 12 months. Have you suffered from any occupational illness in the last 12 months?

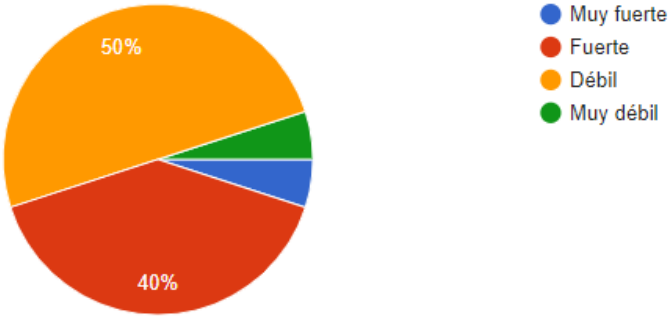
According to the data in graph 4, 95% of the staff at the San Vicente de Paul de Fómeque



ESE Hospital and its affiliated health centers have suffered from some occupational disease in the last 12 months, while only 5% have not had this type of condition. These results are alarming and show the urgent need to strengthen the Occupational Health and Safety Management System (SG-SST) in the institution. Occupational diseases not only affect workers health, but also negatively impact productivity, the quality of services provided and the costs associated with disabilities and treatments. Graph 5 is presented below, with information on the safety and health culture:

Graph 5

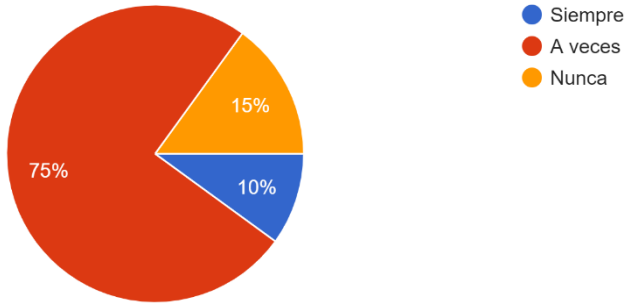
Occupational Health and Safety Culture. Do you consider that the San Vicente de Paúl de Fomeque ESE Hospital and its affiliated health centers have an occupational health culture and safety such as active breaks, compliance with legal working hours, etc.?



The analysis of graph 5 reveals that the majority of staff considers the occupational health and safety culture to be weak, with 50% of surveyed people evaluating it as such. 40% consider it strong, while only 5% rate it as very strong and very weak. These results suggest that, although policies and programs have been implemented to promote occupational health and safety, such as training in accident prevention and management, much remains to be done to create an effective health and safety culture in the institution. Below in graph 6 is the occupational risk situation:

Graph 6

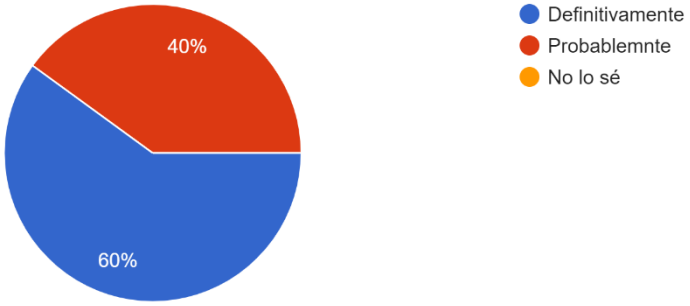
Occupational risk assessments. Are occupational risk assessments carried out regularly in your work area?



According to Graph 6, only 10% of the surveyed people indicated that occupational risk assessments are always carried out, which indicates a notable insufficiency in the consistency and rigor of these assessments. The majority of employees, 75%, report that occupational risk assessments are only sometimes carried out, which suggests that, although there are efforts to carry out these assessments, they are neither consistent nor regular. Irregularity in the identification and assessment of risks can lead to a lack of preventive measures updating, exposing workers to potentially dangerous working conditions that are not identified or managed appropriately in time. The 15% of surveyed people who stated that occupational risk assessments are never carried out in their work area is an alarming figure. This total lack of assessment indicates a serious omission in the compliance with occupational health and safety policies, which can have direct negative consequences on the incidence of occupational diseases. Regarding the implementation of an OSHMS:

Graph 7

Implementation of an Occupational Health and Safety Management System. Do *you think that the implementation of an Occupational Health and Safety Management System can reduce occupational diseases?*

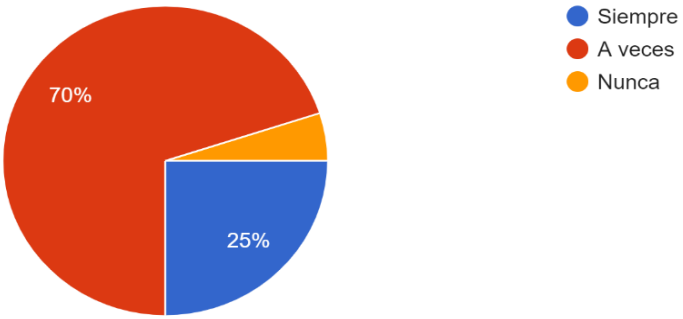


The data in Graphic 7 show a clear trend in staff confidence in the effectiveness of this system, as 60% of surveyed people believe that the implementation of an OSHMS can definitely reduce occupational diseases, which indicates a strong belief in the system effectiveness and its ability to create a safer and healthier work environment. The certainty expressed by this majority suggests that staff have identified or anticipate significant improvements in working

conditions that could result from the implementation of the OSHMS, such as risk reduction and the promotion of healthy practices. On the other hand, 40% of surveyed people responded that the implementation of an OSHMS would probably reduce occupational diseases. Although this group is not as certain as the first, their response indicates a positive expectation and an inclination to believe in the system benefits, although perhaps with some reservations. Below is Graph 8:

Graph 8

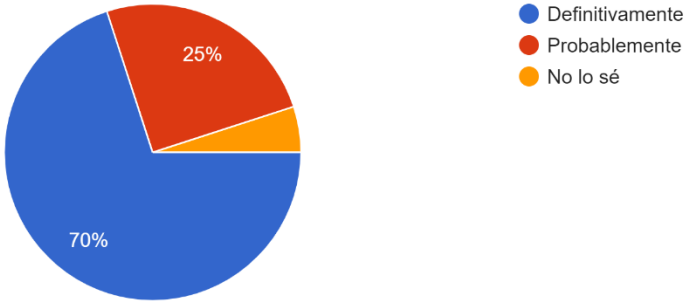
Safe work environment. Do you consider the work environment in your workplace to be safe?



The majority of surveyed people, 70% in Graph 8, said that the work environment is safe only sometimes. This majority indicates that, although there are efforts to maintain a safe work environment, these are not consistent or sufficient for all employees. 25% consider that the work environment in their workplace is always safe. This quarter of employees have a positive and consistent perception of safety in their workplace, suggesting that in certain areas or under certain conditions, occupational health and safety policies and practices are implemented effectively and continuously. And 5% of consider that the work environment is never safe; which underlines the urgent need to identify and address problem areas, implementing effective corrective and preventive measures to ensure a safe work environment for all employees. Below, in Chart 9, implementation of an OSHMS, to improve the quality of care:

Chart 9

Implementation of an Occupational Health and Safety Management System improves the quality of care. Do you think that the implementation of an Occupational Health and Safety Management System can improve the quality of care at the San Vicente de Paúl de Fomeque ESE Hospital and its affiliated health centers?



According to the findings in Graph 9, 70% consider that the implementation of the SG-SST can improve the quality of care in the hospital, while 25% believe that it is likely to do so and 5% are unsure. The majority consider that the implementation of the SG-SST can improve the quality of care in the San Vicente de Paul de Fomeque ESE Hospital and its affiliated health centers. This suggests that there is a clear awareness about the importance of safety and health at work to ensure the quality of care in the hospital.

The results obtained show the need to strengthen the SG-SST, not only to comply with current regulations, but also to ensure the employees well-being and the institution sustainability. In this sense, the findings implication will be discussed, as well as the recommendations to improve the Management of Safety and Health at Work, thus contributing to the reduction of occupational diseases and the promotion of a culture of prevention within the organization.

Below, the **Occupational Health and Safety Management System Manual** is focused on the **Design of the Self-Care Format.** This manual aims to provide the necessary guidelines to implement a comprehensive approach that promotes the safety, health and employees' well-being, ensuring compliance with current regulations.

The self-care format, based on the Health and Safety Management System, seeks to encourage the adoption of practices that promote risk prevention and the strengthening of the self-care culture within the organization. This is expected to reduce the incidence of occupational illnesses and accidents, contributing to the creation of a healthier and more productive work environment.

Table 1.

Format Design for Self-care based on the Health and Safety Management System

NUESTRO SERVICIO ES PENSANDO EN USTED San Vicente de Paúl FOMEQUE	**SELF-CARE FORMAT BASED ON THE WORKPLACE HEALTH AND SAFETY MANAGEMENT SYSTEM (SG-SST)**	**Code : FA-SST-001** **Date : / /** **Version : 0.1**
Goals :	**General:** Promote self-care practices among employees at the San Vicente de Paul de Fomeque ESE Hospital, in order to mitigate the risks of occupational diseases and improve general well-being in the	

	workplace. **specific:** • Encourage self-assessment and reflection on work and self-care habits. • Provide clear and practical guidelines to improve health and safety at work. • Facilitate early identification of risks and the implementation of preventive measures.
Values:	• **Responsibility:** Commitment of each employee to comply with health and safety standards and practices. • **Prevention:** Proactive approach to identify and mitigate risks before incidents occur. • **Collaboration:** Working as a team to promote a safe and healthy environment. • **Transparency:** Open and honest communication about risks, incidents and security measures.
Principles:	• **Employee focus:** Prioritize employee health and well-being in all decisions and actions. • **Continuous improvement:** Constant evaluation and improvement of the SST-MS to adapt to new needs and challenges. • **Active participation:** Involve all levels of the organization in identifying and managing risks. • **Regulatory compliance:** Ensure compliance with all applicable laws and regulations regarding occupational health and safety. • **Self-care culture:** Promote self-care practices and healthy habits among employees to prevent occupational diseases.

PERSONAL DATA	
NAME:	
POSITION:	
WORK AREA:	
DATE:	

SELF-CARE ITEMS		
Do I take regular breaks during my workday?	**YES**	**NO**
Do I practice stress management techniques? Describe which		
Do I have a good work-life balance?		
Do I maintain a correct posture while working?		
Is my workspace ergonomically set up?		
Do I do stretching exercises regularly?		
Do I take regular breaks to rest my eyes?		
Do I adjust the brightness and contrast of my PC screen?		
Do I use adequate lighting in my workspace?		
Do I maintain a neutral wrist posture when using the keyboard and mouse?		
Do I use an ergonomic keyboard and mouse?		
Do I do stretching exercises for my hands and wrists?		
Should I talk to a mental health professional about my experiences?		
Do I participate in support or debriefing programs?		
Do I use relaxation techniques to reduce anxiety?		
Do I organize my time to ensure I get enough rest?		
Do I practice good sleeping habits?		
Comments / Suggestions:		

PROPOSED IMPROVEMENT ACTIONS
Based on my self-assessment, these are the actions I recommend to improve my self-care at work: **Action 1:** **Action 2:** **Action 3:**

INSTRUCTIONS FOR USE OF THE SELF-CARE FORM

Frequency: Employees should complete this form quarterly to monitor their progress and adjust their self-care practices as needed. **Confidentiality:** The information contained in this form is confidential and will be used only to improve the employees working conditions and health. **Follow-up:** The results of the self-assessments will be reviewed by the Occupational Health and Safety Committee, who will offer additional support and resources based on the identified needs.
Contributor 's signature :
Signature of the person responsible:

DISCUSSION

The current situation at the San Vicente de Paul de Fómeque ESE Hospital and its health centers indicates that there is no effective implementation of the Occupational Health and Safety Management System (SG-SST). This lack of effectiveness is reflected in the data obtained, where it is estimated that 90% of those surveyed have experienced occupational diseases in the last 12 months, linked to the different work areas, such as administration, emergencies and hospitalization which has had a negative impact on the employees' health and well-being.

Likewise, the importance of complying with current regulations, as established by Resolution 0312 of 2019, is essential. Failure to adequately comply with the basic guidelines for Occupational Health and Safety Management significantly increases the risk of occupational accidents and illnesses. Every person has the right to work in decent and fair conditions, which makes continuous monitoring of compliance with the SG-SST essential. In this sense, Article 1 of Law 1562 of 2012 highlights that the General Occupational Risk System is made up of a set of entities, standards and procedures that seek to prevent, protect and care for workers against occupational accidents and illnesses. These Occupational Health and Safety provisions are aimed at improving working conditions and preventing risks associated with the work environment, fully integrating into the General Occupational Risk System.

On the other hand, based on the Minimum Standards of the SG-SST for employers and contractors stipulated in Resolution 1111 of 2017, the need to implement adjustments that allow companies to carry out activities more efficiently has been evidenced, with a positive impact on both the quality of life of workers and the productivity of organizations. This is achieved through the promotion and maintenance of a preventive culture in safety and health at work, which objective is to guarantee safe and healthy work environments. In addition, it is important to consider that contemporary labor management has evolved considerably, and technological advances have increased the mental load in many jobs, which leads to an increase in fatigue, especially in those roles that require high concentration or sustained attention (Soto and Melara, 2018). Therefore, building a strong culture in SG-SST is closely related to the reduction of occupational diseases (Figueroa and Hernández, 2021).

CONCLUSIONS

The outcomes of this investigation revealed a low level of compliance with current regulations (Decree 1072 of 2015) and the SG-SST manual in the various work areas at the San Vicente de Paul de Fómeque ESE Hospital and its affiliated health centers, such as

administration, emergencies and hospitalization. These areas have a high incidence of occupational diseases, such as stress, fatigue syndrome, musculoskeletal disorders, visual fatigue, carpal tunnel syndrome, general fatigue and post-traumatic stress, among others.

Due to the nature of the healthcare institution and the occupational risks faced by its workers, it is entirely feasible to adjust the hospital and its surroundings to the Occupational Health and Safety Management System (OHSMS) manual and to a self-care approach based on this system. These actions would not only comply with legal implications, but would also contribute to the employees' well-being and health care.

Implementing self-care strategies, such as active breaks, stretching exercises, ergonomic improvements in work stations and access to psychological support resources to reduce stress and prevent fatigue, is essential. It is crucial to establish a system of continuous monitoring and evaluation of employee health to detect possible signs of occupational diseases early and apply timely preventive measures.

In this sense, promoting a healthy and supportive work environment, where the workers physical and mental well-being is prioritized, through the adoption of healthy practices and the reduction of risk factors, also favors the realization of continuous research. This research allows the evaluation of the effectiveness of the self-care strategies implemented and the necessary adjustments to be made to improve working conditions and reduce the incidence of occupational diseases.

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