South Health and Policy. 2023; 2:62
doi: 10.56294/shp202362

REVIEW

Occupational Health and Safety Management: Impact on Work Performance and Risk Prevention

Gestión de la Seguridad y Salud Ocupacional: Impacto en el Desempeño Laboral y Prevención de Riesgos

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Cite as: Choque Ccanchi CA, Quintana Dragichevich CO, Meneses Claudio BA, Zapana Ruiz JA. Occupational Health and Safety Management: Impact on Work Performance and Risk Prevention. South Health and Policy. 2023; 2:62. https://doi.org/10.56294/shp202362

Submitted: 02-09-2022 **Revised:** 26-01-2023 **Accepted:** 16-06-2023 **Published:** 17-06-2023

Editor: Dr. Telmo Raúl Aveiro-Róbalo

ABSTRACT

The research addressed the impact of occupational health and safety on work performance, based on national and international studies. It analysed how working conditions, risk management, and prevention programmes influenced the reduction of occupational accidents and illnesses. At the national level, research such as that by Marcelo and Salazar demonstrated a strong correlation between adequate working conditions and performance, while studies such as that by Curí showed the effectiveness of prevention programmes in reducing accident rates. Internationally, authors such as Plùas and Montenegro highlighted the lack of regulations and technical training as factors that increased exposure to risks, especially in vulnerable sectors. The role of ergonomics, psychosocial and biological risks, and the importance of training staff in regulations and safe practices were also explored. It was concluded that adequate occupational health and safety management not only prevented harm to workers' integrity but also improved the organisational climate and productivity. Prevention, continuous training and the design of integrated policies were pillars for the sustainability of safe working environments. This study provided a comprehensive overview that identified key practices and recommendations applicable in the context of a financial institution.

Keywords: Occupational Safety; Occupational Hazards; Performance; Prevention; Health.

RESUMEN

La investigación abordó el impacto de la seguridad y salud ocupacional en el desempeño laboral, basándose en estudios nacionales e internacionales. Se analizó cómo las condiciones laborales, la gestión de riesgos y los programas de prevención influyeron en la reducción de accidentes y enfermedades ocupacionales. A nivel nacional, investigaciones como la de Marcelo y Salazar demostraron una fuerte correlación entre condiciones laborales adecuadas y desempeño, mientras que estudios como el de Curí evidenciaron la efectividad de programas de prevención en la disminución de la accidentabilidad. A nivel internacional, autores como Plùas y Montenegro destacaron la falta de normativas y formación técnica como factores que incrementaron la exposición a riesgos, especialmente en sectores vulnerables. Asimismo, se exploró el rol de la ergonomía, los riesgos psicosociales y biológicos, así como la importancia de capacitar al personal en normativas y prácticas seguras. Se concluyó que una adecuada gestión en salud y seguridad ocupacional no solo previno daños a la integridad de los trabajadores, sino que también mejoró el clima organizacional y la productividad. La prevención, capacitación continua y el diseño de políticas integradas fueron pilares para la sostenibilidad de entornos laborales seguros. Este estudio brindó una visión integral que permitió identificar prácticas clave y recomendaciones aplicables en el contexto de una entidad financiera.

Palabras clave: Seguridad Ocupacional; Riesgos Laborales; Desempeño; Prevención; Salud.

INTRODUCTION

Occupational safety and health were fundamental aspects to ensure the well-being of workers and the operational efficiency of organizations. Throughout various types of research, both national and international, it has been evidenced that the implementation of occupational health and safety management systems (OHSMS) [1] has a direct impact on reducing occupational risks, accidents, and occupational diseases. Studies such as Marcelo and Salazar[2] have demonstrated a high correlation between adequate working conditions and personnel performance, while research by Godoy et al.[3] has highlighted the importance of involving employees in the construction of safe environments[4] On the other hand, international evidence suggests that the lack of specific regulations or poor technical knowledge, as noted by Plùas et al.[5], increases exposure to risks. Likewise, Gutiérrez[6] highlighted how the application of international standards has allowed for improvements in both environmental performance and safety in companies. Overall, the antecedents presented a diverse reality, but they coincided in that prevention, training, and the design of comprehensive policies were determinants in promoting an organizational culture oriented toward worker protection. This research focused on understanding these dynamics and their applicability in a financial company, aiming to identify factors for improvement in occupational health and safety in current contexts.

DEVELOPMENT

BACKGROUND

National

Marcelo and Salazar[2] at Thyssenkrupp Elevadores S.A.C. aim to determine whether working conditions and occupational health and safety practices have a direct impact on the work performance of workers in the company. The objective was to determine the relationship between both variables. A quantitative approach was employed, as we aimed to collect data containing objective information with numerical results through a non-experimental cross-sectional design survey conducted among 132 technical workers of the company. The study consisted of two variables. The variable of Occupational Safety and Health encompasses four dimensions: integration and prevention, occupational accidents and diseases, OHS training, and OHS supervision. The second variable refers to job performance and has four dimensions: job knowledge, productivity, leadership, and efficiency. Using a non-probabilistic sampling of 114 workers. It was found that a significant correlation of 0,856, considered very high, exists between the two variables, according to Spearman's statistics. The study concludes that the company should prioritize the working conditions, plan periodic training to make known the dangers or situations that may arise due to the type of work that is carried out, carry out an awareness plan where the worker understands the importance of complying with the safety standards established by the company, all of which will result in good management of the workers towards the company.

Godoy et al.[3], in an article, mention the need to quantify the perception of occupational safety and health by the collaborators working in a company of the advertising sector in Lima during 2021 had the objective of determining which factors of the SG-SSO are related to the protection of the worker of that company and finally, establish the necessary preventive measures and include them in the company. A descriptive and correlational study with a non-experimental cross-sectional design was employed, using data collected from 46 employees. The result of the study determined that in the activities carried out within the company, workers are exposed to 27 occupational hazards, and based on the analysis of the nine dimensions of the OSHMS, which is carried out according to the perception of each collaborator, the measurable indicator "index of the perception of worker protection" was obtained, whose score reached 68 %, which allows knowing that there is a moderate and strong correlation between the variables. The study concludes that a work environment with clean, safe, and free common areas reduces risks, accidents, hazards, and occupational diseases. It is of vital importance that all workers are involved in the creation of SG-SSO.

Curí[4] conducted research and pointed out that in 2018, in the company JRC Ingeniería y Construcción-Unidad Mineral El Broncal, different injuries occurred to workers: 8 were incidents called minor, 7 caused disability, and one was fatal, for the following year through the use of a program it was sought to reduce the aforementioned indexes. The objective was to analyze the relationship between the application of the occupational health and safety program and the reduction of occupational accidents in this company in 2019. For this purpose, an applied descriptive study of the experimental design of the longitudinal cut was conducted, where the population and the number of samples were the same. It was constituted by the occupational safety and health records dated 2018 and 2019 of JRC Engineering and Construction. It was found that, within the company, the accident frequency rate remained at 2,83 from 2018 to 2019, while the severity rate of occupational accidents decreased by 95,87 %, along with the occupational accident rate, which also decreased to 95,88 %. In conclusion, it is demonstrated that the implementation of the occupational safety and health program in 2019 has significantly reduced the aforementioned indexes.

Huanca[7] conducted a study at Compañía Minera Poderosa S.A. from 2012 to 2015, analyzing 977 accidents, of which 66 were fatal, 84 incapacitating, and 88 non-incapacitating. The purpose is to demonstrate that

the negligent behavior of workers, lack of planning, and change in culture influence accidents that cause incapacities in the same worker. An applied research study at the experimental level was conducted based on statistical tables from 2012 to 2015. For this purpose, a sample of 263 workers was selected from a population of 1,411 people who worked within the mining company, including workers, supervisors, and contractors. The result is that there is a minimum level of safety knowledge among workers and contractors. Therefore, all accidents are caused by a lack of safety culture and worker negligence. Therefore, it was proposed to improve through training programs that would allow the implementation of operational controls related to safety. In conclusion, once the safety instructions were applied, a positive impact was observed in the reduction of the accident rate.

Guitierrez[6] conducted this research in a company dedicated to the formulation, repackaging, and marketing of agrochemical products in the city of Metropolitan Lima; the objective of this research is that a Peruvian company can manage practically and simultaneously the design and implementation of an environmental management system, safety, and health at work in order to improve its performance in the environment, safety, and occupational health. In this article, an explanatory type of research was conducted using a pre-experimental, pretest-posttest design. The study comprises two variables: environmental management, which consists of two dimensions —strengths and weaknesses —and occupational health and safety, which encompasses two dimensions: accidents and diseases. For this study, four stages were applied based on the implementation methodology for the design of an environmental management system, safety, and health at work, which were: diagnosis helps us to determine the standards to be implemented in the company, design, and implementation of training activities, audit and review by the management of compliance with ISO standards and finally certification of the company. The results of this research indicate that implementing the ISO 10001 and ISO 45001 standards through a well-designed and effectively implemented environmental, occupational safety, and health management system contributes to the improvement of environmental and safety performance, as reflected in the reduction of frequency, severity, and accident rates. The study ends by providing encouraging results on the medical attitude of the collaborators. Therefore, the company needs to be aware of potential future threats that could impact the final results obtained.

International

López mentions that in the company Ferrecentro Chinchina, a visit was carried out to know the different processes and areas, deficiencies were identified in the occupational health and safety management system, in addition to different risks and hazards to which the workers that organization was exposed, therefore, based on the current regulations of the year 2019, an Occupational Health and Safety System was designed in that company. A descriptive study was employed, as it aimed to identify and analyze the risks to which the workers were exposed. The results obtained indicated that operators, when performing their work, often adopt inadequate postures, resulting in back pain, as well as physical exhaustion and decompensation due to the lack of active breaks. In conclusion, the risk evaluation revealed a 7,5 % critical status, which obliges the company to increase its evaluation level to reach an acceptable valuation.

Plúas developed a research consisting of the design of a Safety and Occupational Health system in the company Constamar S.A, whose main activity is aquaculture, consists of the production of white shrimp nauplii; the objective of this scientific article is to evaluate the status of the Occupational Safety and Health Management system based on Ecuadorian regulations to determine the different risk factors to which the collaborators are exposed supported by the use of the Triple Criteria matrix. A descriptive research study was conducted using a deductive method based on labor legislation, where parameters for a management system were established. The study comprises a safety and occupational health variable that considers three dimensions: probability, severity, and vulnerability. It used a survey to gather feedback from 12 collaborators, including operators and administrative staff of the company, which consisted of questions related to the subject. The results of the research indicate that all workers lack knowledge of industrial safety, although 8 % possess some knowledge of occupational health. The remaining 92 % are not familiar with this topic.

Additionally, 100 % of the workers are aware of the evacuation routes in the event of an emergency, while 75 % know where to report accidents or incidents; however, 25 % do not have this information. Surprisingly, 92 % of the workers state that they have not experienced any accidents in their work activities, while 8 % have reported accidents. This leads to 92 % stating that they are aware of the risks in their daily tasks, while the remaining 8 % are unaware of the risks associated with their activities. The research determines that many risks require preventive actions that will provide employees and the employer a way to control the existing hazards, so a matrix should be developed that will help in the prevention measures with which it will be possible to determine where the risk starts, thereby adopting the necessary measures on the means of transmission. This research will enable the creation of control and protection between the generating source and the worker while also preventing contact between the risk factor and the collaborator.

Luna et al.[8] conducted research on the "Evaluation of occupational performance as an integral factor of work

loss and occupational capacity." This research aims to investigate the impact of occupational performance on the assessment of work absence and occupational capacity. An analytical cross-sectional study was elaborated using an evaluation instrument based on occupational performance supported by a comparative analysis with the results of other occupational areas. This study examines the use of an occupational performance variable, which is categorized into two subgroups: illnesses and accidents. For this research article, teachers from various universities in Colombia were selected, resulting in the inclusion of 6 subjects who met the criteria of having presented limitations or restrictions due to a work accident or occupational disease. The findings of this study show that four of them suffered occupational accidents, while two of them faced occupational diseases. During the evaluation of their performance, it was found that 66 % of the sample showed a slight dependence on specific activities, which led to a differentiated analysis, highlighting the importance of the single manual score to qualify the loss of work and occupational capacity. Particular factors were identified, such as fairness in the evaluation of performance in the occupational setting, the various contributions of the concept of work performance, and possible forms of integration with the manual. The study reveals, based on the evaluated cases, that the importance of an occupational therapist lies in providing experience and expertise to guide individuals in executing their daily duties, patterns, and activities within their specific context and environment, considering their skills, characteristics, and areas of occupation. Therefore, the occupational therapist must be present during the phases preceding the qualification of the assessment of work loss and occupational capacity.

Pectin et al.[9] researched the factors associated with occupational health and safety of agricultural workers exposed to pollutants working in small rural properties in Brazil; the objective of this scientific article focuses on analyzing the different sociodemographic characteristics, technical training, and risk perception associated with the use of pesticides and occupational health by farmers in the municipality of Cerro Azul. A cross-sectional observational study was used. We can identify occupational health as the first variable, which comprises three categories: risks, symptoms, and diseases. As the second variable, we identify technical training, which consists of three dimensions: control, protection, and practices. A cross-sectional observational study was conducted with 113 farmers randomly selected from the municipality of Cerro Largo, who were interviewed in this agricultural sector to assess their level of knowledge about the risks and diseases to which they are exposed. The evaluated collaborators are between 51 and 76 years old and have a low level of academic achievement. Most of these subjects are farmers who received training through companies that sell them pesticides. As a result, the farmers cannot identify the risks they face when exposed to pesticides and report symptoms of intoxication. Thanks to this study, public agencies in the country lack adequate technical training, which hinders the proper handling of these elements. That is why it is necessary to provide thorough technical training for safe use while also imparting knowledge about the potentially harmful health effects.

Montenegro[5] researched ergonomic risks in a call center, addressing all aspects associated with injuries and occupational health risks from an ergonomic perspective. This analysis aimed to identify problems commonly encountered in companies within this sector and to develop strategies for implementation within the company, as well as to assess employees' knowledge of these risks. A descriptive type of study was carried out with a non-experimental design to observe the phenomena and how they occur in a natural context. It is composed of a variable, ergonomics at work, which is comprised of four indicators: workload, strength, repetition, and fatigue. This analysis was conducted on a specific group of people, institutions, and elements, ensuring that the conclusions obtained are relevant and applicable to that group within the context of the research. As a result of this analysis, we can affirm that in Chile, no law regulates the regulations every company must comply with to avoid diseases caused by ergonomic risks generated in the Call Center until the collaborator files a complaint with the relevant entities to define the company's responsibility. This study highlights the importance of ergonomic and sufficiently comfortable workstations, not only for the employee's well-being but also to enhance task performance, thereby promoting productivity and contributing to the company's development.

THEORETICAL FRAMEWORK

Occupational Health and Safety

According to Carrera[10], it refers to a set of actions aimed at raising the well-being of employees. Within this set are also included tasks such as early detection and immediate treatment of work-related diseases, labor reintegration, and attention to situations arising from occupational accidents and occupational diseases. Likewise, it also deals with the control, reduction, and elimination of risk agents by measuring the degree of danger to which workers are exposed.

For Henao[11], occupational safety and health are mainly focused on prevention through activities that promote, educate, prevent, and control environmental risk factors. The main objective is to prevent occupational accidents and occupational diseases from occurring. These actions are multidisciplinary, as they involve various disciplines, all aimed at preserving health and preventing damage. It is a set of actions that involves various disciplines and is oriented toward the promotion, teaching, prevention, control, recovery, and

rehabilitation of workers. Its purpose is to safeguard employees from the risks associated with their occupation and to provide them with a work environment that suits their physical and mental conditions.

Accidents

To Henao[11], accidents at work are events that impair the quantity to be produced and the quality of the products and/or services performed by a company and, in turn, make a dent in the health of each of the collaborators. It is also considered an error within a company's management system.

Botta[12] refers to the action caused by human error as an accident; the author considers that it is possible to find people who, due to various circumstances, make a mistake. He also comments that humans can avoid errors, but this is not the case when robots or machines are used.

Damages

Harm in the work environment refers to adverse outcomes that can impact the health and well-being of employees due to hazardous situations or risks present in their workplace. These injuries can range from physical injuries to chronic health problems, and their origin can be linked to events such as accidents at work, exposure to harmful substances, or lack of appropriate ergonomic conditions.

Causes

For Botta[12], the concept is used in a limited sense. It relates to factors whose state is assumed to statistically influence the incidence of accidents, such that certain states of these factors can be considered more hazardous and, therefore, more likely to increase the probability of accidents.

Risks

According to Badía,[13] occupational risk can be described as the combination of various chemical, physical, environmental, psychological, social, and cultural elements present in the work environment, which, due to their influence and role, can lead to the development of occupational diseases. Depending on the nature of the work activity, it is possible to distinguish between general risks and specific risks.

Cañada[14] also notes that occupational risk management entails examining, investigating, and intervening in working conditions to create suitable working environments. To achieve this purpose, it is essential to establish organizational policies that prioritize the prevention of occupational hazards and define the tasks and duties of each employee in terms of occupational health and safety.

Ergonomic

These refer to the working conditions that pertain to the creation of tools and equipment for workers, as well as the working environments in which they operate, in order to ensure both the health and comfort of individuals and the proper functioning of the labor system. The primary factors associated with ergonomic risk include uncomfortable positions, inadequate working postures, excessive physical load, and repetitive movements.[15]

Psychosocial

These are considered job-related situations that may put the physical, social, or emotional health of employees at risk. These situations include issues such as excessive workload, lack of autonomy, leadership styles, gender disparity, dissatisfaction with wages, motivation, interpersonal relationships in the work environment, organizational culture, and environment, among other aspects.[16]

Occupational diseases

Henao[11] tells us that occupational disease is recognized when it is acquired by risk factors inherent to the work activity carried out, and these can be qualified in diseases caused by low lighting, such as eye fatigue and nystagmus; hand cramps, which are caused by work involving repetitive movements with the fingers of the hand and forearms; musculoskeletal and ligament injuries, which are caused by jobs that require all kinds of repetitive movements and postures; occupational asthma, cancer caused by work; pathologies caused by occupational stress or jobs involving customer service or sales.[17,18,19]

According to Chinchilla[20], occupational diseases are undesirable events that occur when a worker is exposed to a risk agent (chemical, physical, or biological) over a specific period. The various diseases caused by work are characterized by a deterioration in the employee's health resulting from adverse work environment conditions.

Physical

Physical conditions in the work environment represent a crucial and significant issue in the field of occupational health. These situations may arise as a result of exposure to various risk factors found in the

workplace, such as hazardous chemicals, ergonomic hazards, or unfavorable work environments.[21,22]

Biological

Biological diseases in the workplace refer to health disorders that are triggered by the presence of pathogenic microorganisms or harmful biological agents in the workplace. These conditions can include infections and other health problems associated with exposure to bacteria, viruses, fungi, and other dangerous biological organisms.[23,24]

Hazards

The etymological term for hazard is "the imminent possibility of losing something or of damage occurring," and it is also understood as a situation with the potential for harm such as injury, illness, property damage, work environment, or a combination of all of them, according to.[25]

Injuries

An injury refers to any physical damage or alteration that affects the normal functioning of a body part. Various factors, such as accidents, trauma, repetitive strain, or disease, can cause it.[26,27]

Physical Hazards

In an office, physical hazards refer to any condition or situation that can cause bodily harm to employees, such as loose wires or cords, inadequate lighting, poorly placed furniture or clutter, and objects on the floor.[28]

CONCLUSIONS

The background analysis provided evidence that occupational safety and health practices have a significant influence on the prevention of accidents and occupational diseases, as well as the improvement of workers' performance. It was observed that companies implementing integral health and safety management systems, accompanied by regular training and active personnel participation, were able to reduce accident rates and improve working conditions. Lack of planning, inadequate knowledge of risks, and the absence of a preventive culture were identified as the primary factors contributing to adverse events in the work environment. At the national level, studies such as Marcelo and Salazar[2] and Curí[4] have shown that well-structured preventive strategies promote safer work environments. Internationally, it was concluded that companies still faced regulatory and cultural challenges that limited effective implementation. The evidence gathered supported the need to develop sustainable policies adapted to each productive sector, promoting proactive management of occupational risks. In summary, it was concluded that occupational health and safety was not only a legal obligation but a strategic tool that, when correctly managed, increased productivity, reduced the costs associated with accidents, and strengthened the institutional image of companies committed to the well-being of their workers.

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FUNDING

None.

CONFLICT OF INTEREST

None.

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