

Correlational Analysis Between Work Absenteeism and Aspects of Human Behavior

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ABSTRACT.

This research aims to determine the relationship between medical absenteeism, sociodemographic characteristics and human behavior of the workers of a Colombian mining company. A quantitative study with correlational scope was developed, composed of 832 absenteeism records from 2020. To associate the study variables, bivariate tables are considered, using statistics according to parametric behavior. It was evidenced that injuries and poisonings correspond to more than 51% of the total causes of absences, within a predominantly male population (90%) aged between 40 and 50 years with a low educational level, a population that has developed a large part of their working life in activities related to mining. On the other hand, it is considered that absenteeism is significantly related to lifestyle, such as smoking, alcohol consumption, excess body mass index, low physical activity and unhealthy eating habits, aspects that explain a substantial proportion of the absence from work of the personnel working in this company, and also obey to adaptive and self-organized human behaviors, which were learned from generation to generation, as well as the learned processes to the development of the technical skills of the mining labor.

Keywords: Human Behavior, work absenteeism, healthy lifestyles

INTRODUCTION

Work absenteeism is a growing public health problem that directly impacts business

productivity, (Tatamuez, R., Domínguez, A., & Matabanchoy, S. 2019). In the United States, a recent study determined the prevalence of absenteeism between 2019 and 2020 at more than 15%, with personal service and health support workers having the most absences. (Groenewold, M., Burrer, S., Ahmed, F., Uzicanin, A., Free, H., & Luckhaupt, S. 2020). However, European statistics are much more worrying, according to the Statistical Office of the European Union, the highest proportions of absences from work in 2020 were recorded in the second quarter of the year in Portugal, Spain, Cyprus, Ireland, and France, with a rate around 30%, with a higher prevalence in women (Eurostat. 2021). In Latin America, specifically in Brazil, absenteeism rates fluctuate between 3 and 10% depending on the occupation and the characteristics of the health service. (Paiva, L., Dalmolin, G., & Santos, W. 2020). In Mexico, absenteeism of more than 10% has been estimated, resulting in additional costs of 7% or 70 dollars for every 1.000 dollars of the companies' payroll. (Cachazo, A. 2018). In Peru, the global absenteeism rate in 2018 was 6.5%, with a severity index of 25.12 days, the highest work absenteeism occurs in women over 50 years of age and in care professions. (Egoávil, C. 2021). Finally, in Colombia, the VI Survey on Absenteeism and Disabilities (EALI) established for the year 2019 the occurrence of 623,220 cases of absenteeism from work, of which general illness is the main cause of absence (68.9%), followed by permits and licenses (26.4%). In this way, on average, a worker presented 1.26 cases of absenteeism per year. Its duration was an average of 7.3 days, the companies spent per worker, \$ 15,910 pesos per month or \$ 190,920 pesos per year, on average, just because of absenteeism from work. (Arriera, E., Fernández, C., Sepulveda, C., & Vieco, J. 2020). Based on the above, absenteeism is recognized as a key factor that must be considered by companies in relation to the high cost, and the negative effects on productivity, and the income, but even farther than determining the statistics, the important thing is to identify the generating factors, to promote prevention and control mechanisms. Crisóstomo, L. (2018). Previous studies have been identified multiple predictors relating absenteeism to diseases and sociodemographic characteristics of workers, including sex, age, civil status, educational level, and working conditions, such as regular medical check-ups, and hours of work, labor workday, type of employment (permanent versus temporary), and work experience, which considerably influence on the figures of absenteeism due to illness (Berón, E., Mejía, D., Castrillón, D., 2021). Likewise, it has been established that psychosocial factors, such as occupational stress, work well-being, and human behavior factors, such as smoking and alcohol consumption, were also factors that predisposed employees to be absent from work due to illness. In Colombia, The Mining sector is an important pillar in the Economy, but at the same time, it appears as one of the economic activities with the highest level of risk for workers (Ministerio de Energía. 2020). In the case of the mining company under study, a total of 832 absenteeism records were presented during the year of 2020, of which 90% correspond to a male population with ages predominantly over 40 years., and most of them are part of the operational and auxiliary area of the company (83.59%). As previously exposed, the objective is to identify the relationship between absenteeism from work, sociodemographic characteristics, and human factors inherent to healthy lifestyle habits.

MATERIALS AND METHODS

This research was carried out through a quantitative study with a correlational scope, which seeks to estimate the degree of association between the study variables. In this case, the relationship between the sociodemographic characteristics, lifestyles, and absenteeism of

workers of a Colombian mining company. The population corresponds to 832 records of absenteeism generated during 2020, of which a sample of 264 was determined through simple random sampling with a confidence level of 95% and a margin of error of 5%.

RESULTS

The World Health Organization (WHO) defines absenteeism as: an employee's absence from work for justified or unjustified reasons. For Swarnalatha & Sureshkrishna (2013). It is simply defined as "no show for work", and suggests that employees who are regularly absent from their workplace are a threat to the organization and turn it into an "altered workplace". A report by the International Labor Organization (ILO) showed that every 15 seconds there are more than 150 work accidents, and more than 160 million occupational diseases occur each year, which between 50 and 60% of these accidents and illnesses cause employees to be absent from work for at least four business days (Guzmán, O., Ocegüera, A., & Contreras, M., (2017). In this way, absenteeism generated by exposure to a variety of working conditions is considered a representative image of the health status of the workers, and their ability to perform, therefore, it is consolidated as an important public health concern throughout the world (Mira, J., & García, N. 2019). Below are the sociodemographic characteristics and lifestyles identified in the working population of the mining company under study, related to absenteeism for medical reasons as follows: According to Fig. 1. The main cause of absenteeism in the mining company corresponds to traumas and poisonings with 51.6%, which is related to accidents at work and exposure to conditions they face every day; for example, when chemical substances are used such as mercury, cyanide, nitric acid, zinc to obtain gold, as well as the silica dust, present in most of the extraction processes (Lopez, M., Santos, J., Quezada, C., Segura, M., & Perez, J. 2016). With regard to musculoskeletal diseases, 15.6% of causes of absenteeism were evidenced, identifying a higher prevalence at the neck level with 50%, shoulder in 40%, hand - wrist in 40% and dorsal or lumbar area with 30%; associated with high physical workload, poor posture, stress, and reduced work space (Quishpe, C., 2020). These aspects described coincide with other research results in Colombian mining companies as well as in other countries such as Spain, the Netherlands and Norway. (Velez, J., Escobar, A., & Gallo, P., 2020). Finally, the respiratory-type pathologies are also highlighted in Fig 1. with 14.1%, related to the aforementioned chemicals and possibly influenced by smoking.

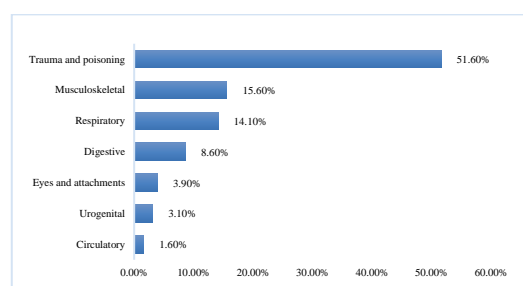


Fig. 1. Diseases that trigger absenteeism

Source: Own elaboration based on information from the company's database

From Fig 2. It is evident that workers with absenteeism are mostly between 40 and 50 years old, which is 49%, followed by 44% who are between 51 and 60 years old. The average age of the workers is 51.9 years ($SD \pm 5.7$), which could be taken as personnel of advanced age for the development of this type of activities; what's more, this trend is ratified by a study carried out in mines in Colombia, where it was found that the personnel with the highest rate of absenteeism corresponded to those older than 43 years old. (Velez et al., 2020). In all age groups, the highest frequency of medical diagnosis resulted in trauma and poisoning with a total of 51.6% of absences, being people between 51 and 60 years the most susceptible to this condition and to develop respiratory diseases with a 9,5%, while those with 40 to 50 years of age presented musculoskeletal diseases to a greater extent with 8.7%, and to digestive diseases with 7.2%.

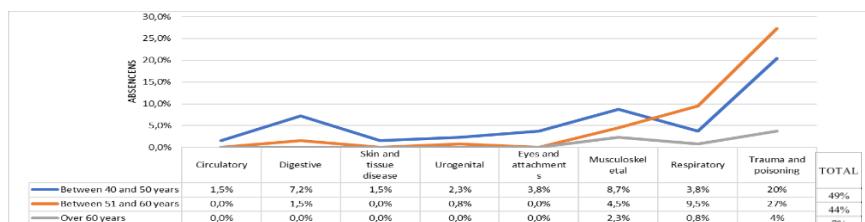


Fig. 2. Age of workers Vs. causes of absenteeism

Source: Own elaboration based on information from the company's database

In relation to the body mass index of the workers with medical absence from the mine under study, it is observed that 41% of the workers are at their ideal weight. However, excess weight is evident in the rest of the population, of which 26% are overweight, 17% are at risk of being overweight, and 16% are obese; in the same way, when analyzing the body mass index the largest number of medical diagnoses was derived due to trauma and poisoning with a total of 51.9%, however, people with normal weight were more susceptible to respiratory diseases in 8.2%, while those with overweight developed more digestive diseases with 4.5%; finally, obese and overweight workers presented a high number of diagnoses related to musculoskeletal problems with 3.8% in both cases. Overweight and obesity are a growing public health problem worldwide, affecting all age groups; both are considered multifactorial diseases (Guerrero, F. F., & Gigosos, R., 2021), however, a greater tendency to this situation is evidenced in the mining sector, which is manifested in the results obtained, with more than half of the population presenting some degree of overweight (59%), data that is ratified in comparison with international standards with a study carried out in Peru, where the effect of the annual increase in weight of workers in a mining camp was evaluated, where a high relationship between the increase in weight and the frequency of prolonged absenteeism was also found (Gomero, R., Murguía, L., Calizaya, L., Mejia, C., & Sánchez, A., 2018).

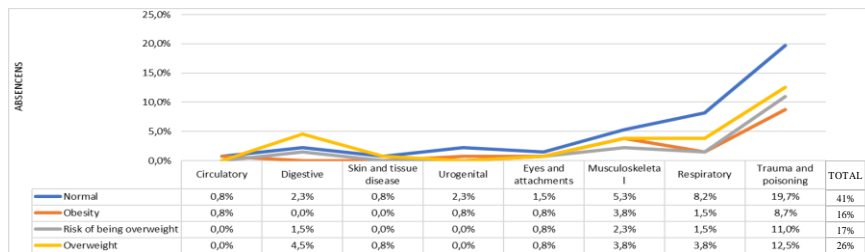


Fig. 3. Body mass index Vs. causes of absenteeism

Source: Own elaboration based on information from the company's database

In Fig. 4. It refers to the practice of physical activity, which was identified through the question ¿How often do you practice physical activity for at least 30 minutes weekly? From this question, it is observed that physical activity is infrequent, since 46% indicate that they do not practice physical activity or do it only once a week, followed by 32% who perform it between 2 and 4 days per week, and finally, around 22% indicate that this activity is practiced regularly 5 or more days a week.

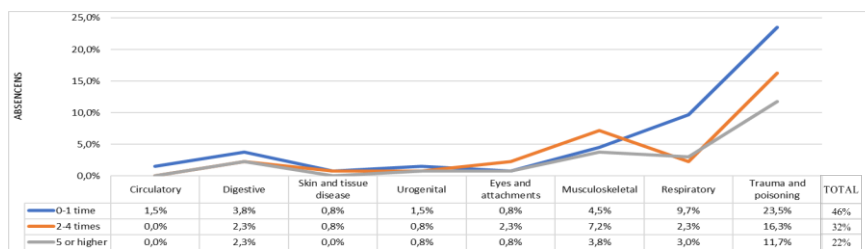


Fig. 4. Frequency physical activity Vs. causes of absenteeism

Source: Own elaboration based on information from the company's database

Workers who did not practice physical activity regularly, or never did it, were the ones who presented the most traumatic pathologies and 23.5% poisoning, in this group of people respiratory pathologies were also more frequent with 9.7%. Among workers with moderate physical activity (2 to 4 times a week), traumatic pathologies and poisoning were frequent in 16.3% of cases, in addition to musculoskeletal with 7.2%.

Fig. 5. It refers to the consumption of intoxicating beverages by workers absent for medical reasons, establishing that 29% of them never consume these beverages, while 38% of them say they consume alcoholic beverages occasionally and the remaining 33% of workers established to consume these frequently. On the other hand, both occasional and frequent consumers of alcoholic beverages presented the highest percentage of absences due to trauma and poisoning, reaching 21.2% and 18.9% respectively. Similarly, these consumers stand out in relation to musculoskeletal diagnoses with 6.4% and 5.3%.

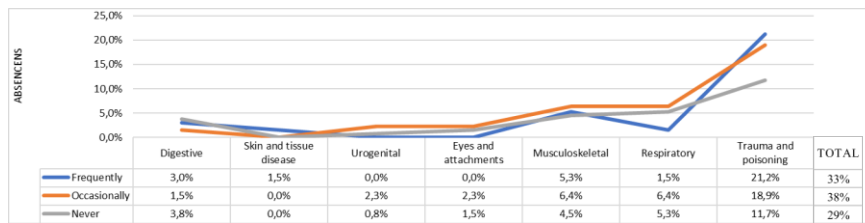


Fig. 5. Alcohol consumption Vs. causes of absenteeism

Source: Own elaboration based on information from the company's database

It is also seen in fig. 6 that more than half of the workers affirm that they do not smoke (52%), while the remaining 48% consume cigarettes. In both smokers and non-smokers, the highest frequency of medical diagnosis resulted in trauma and poisoning with 22% and 29.5% respectively, likewise, smokers were the ones who presented the majority diagnosis of respiratory pathologies, with more than 10%, this is a situation that increases the possibility of suffering from chronic lung diseases such as silicosis or pneumoconiosis (Rodríguez, K., Santander, L., Terán, E., & López, E., 2018).

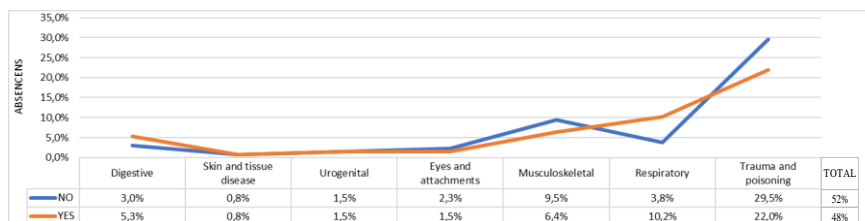


Fig. 6. Cigarette consumption Vs. causes of absenteeism

Source: Own elaboration based on information from the company's database

CONCLUSION

Mining activity is as old as the history of mankind (Lopez, M., et al., 2016), it is usually valued for its great contribution to the economy of the regions, but at the same time it is recognized both for the environmental impacts it generates, and for the high index of work accidents and occupational diseases that this activity entails in workers (González, U., Molina, G., & Patarroyo, F., 2019). It is an activity that takes place mainly in vulnerable regions of the country, in an artisanal way and in some cases outside of national legislation; transmitted from generation to generation as part of an important cultural pattern in the region that implies an impact on the transformation of productive habits as well as on human behavior. Therefore, important results were found related to the increase in absenteeism rates in the company under study; such as a high generation of absences due to trauma, since more than half of absenteeism is due to this cause (51.6%), this fact could be explained because the type of work carried out in this industry, where handling of manual tools and the characteristics generated due to the

work spaces and its environment, all lead to produce this situation of absenteeism, in addition the behaviors of the workers related to the low perception of risk and the absence of technical training in the development of the work. In the same way, significant relationships were established between the life habits of the workers and the absences presented, showing that workers with obesity and overweight are more prone to musculoskeletal and digestive diseases, which is additionally associated with the consumption of unhealthy foods, since the population under study stated that they frequently consume sugar, salt, junk food, or fats 3 to 5 times a week, in more than 68% of the cases. Regarding the realization of physical activity, it was evidenced that it is rare in workers, since 45.3% indicate that they do not practice it, or they do it only once a week for at least 30 minutes, developing a high degree of absenteeism due to musculoskeletal diagnosis. Although it is true, working conditions are factors of a broad impact and are also recognized as determining factors for the safety and the health of workers, research such as the one carried out allows us to establish the high influence that factors such healthy lifestyles have on the health and on the well-being of workers, showing that they have social, cultural, and economic characteristics that are constituted as emergent properties of human behavior conditioning the way of acting. These characteristics interact as indissoluble situations between work and personal matters.

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