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Chronic Disease Control Programs, Ergonomics and Reduction of Absenteeism

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Abstract:

Objective: Absenteeism of workers on medical leave occurs frequently within companies, leading to a cycle of inadequate spending with health care providers, decreased productivity, reduced profits and demotivation of the team. In this review, were included the articles and theses published in PUBMED, SCIELO and COCHRANE databases, which contain in their title and abstract the words FATALITY, absenteeism, industry and/or medicine. Contents: In this context, a preventive health care model, where one can carry out the survey of the epidemiological profile of the company through the studies related to the accident rate, is especially advantageous. Conclusion: The Chronic Disease and Ergonomics Control Programs stand out, where the occupational physician and the Health and Safety team work together to reduce the number of departures within the company, seeking to guide, treat and prevent the complications of the main pathologies that reach this population.

Keywords: Absenteeism; Social Security; Occupational Medicine.

1. The Model of Attention and Accident

The type of professional activity, the conditions under which the work is performed, the physical and psychological characteristics of the worker, the social, economic and political contexts are determinant risk factors for workers' health. [1]

Unplanned absences from work, more specifically absenteeism on medical leave, are episodes that occur frequently in organizations and generate costs, impacting productivity, reducing profits, and quality of the product or service. [2] This is because in order to meet their production schedules, companies need to adjust when they are absent, performing an untimely restructuring in their production processes, need to hire and train another worker to replace the absentee, increase costs with overtime pay and in the psychosocial context they overwhelm the other workers, generating stress and fatigue. [2]

Due to the importance of this theme and the impact of this, a narrative review was carried out using the articles and theses published in the PUBMED, SCIELO and COCHRANE databases, which contained in their title and abstract the words LOSS, absenteeism, industry and / or medicine, selecting 27 articles.

A very relevant justification about the need for systematic control and analysis of the events that lead to absenteeism due to illness were the constant changes in Brazilian legislation in the field of health and safety at work, which has required of the organizations greater commitment to improve the conditions of their environments of work. [2] Law No. 11,430, of December 26, 2006 (Annex D) and Decree No. 6.957, of September 9, 2009 (Annex C), which lists numerous pathologies as caused or aggravated by work, sending to the organizations the proof that these diseases are not related to the professional activity and / or working conditions, which was called inversion of the burden of proof. [2]This Decree disciplines the application, monitoring and evaluation of the Technical Epidemiological Social Security Nexus (NTEP) and the Accident Prevention Factor (FAP), which has the potential to increase costs for organizations if the disease is considered an accident and / or illness. [2.3] The FAP was implemented by the Federal Government with the objective of encouraging effective health and safety policies for workers in order to reduce accidentality and occupational diseases. [2]

Despite the increase in the number of beneficiaries, health care providers face a series of difficulties, since they still work with the logic of the event / claims. [4] This logic is based on the demand of the beneficiary's disease, with disarticulated, disintegrated actions, little caretakers, exclusively curative and fragmented. [4] Disregard other determinants of health-disease, centralized in the doctor and in the hospitalization, do not evaluate their results of quality and resolution and basically attend the spontaneous demand. [4]

According to Pires, the accident rate is a percentage index calculated by the ratio between claims incurred (care costs) and the premium (care income). [5,6] The

concept is used by health care providers as a teller at the time of price readjustment. [5.6] The calculation of the last 12 months of revenue *versus* expense indicates whether the contract is financially compensatory for the parties or if the amount paid in the monthly payment is fair and maintains the contractual relationship balanced, considering the claims or expenses generated under this contract. [5] The average considered acceptable by most companies in the industry is 75%. [5.6]This measure allows the health plan to pay for its administrative and commercial expenses and to have a profit margin that makes the business viable. [5.6]With values above this percentage, it is considered that a certain policy or contract is deficient. [5]

The health care model focused on promotion and prevention actions, that is, with the responsibility of all those involved in the process - operators, service providers and beneficiaries, responds more effectively to the needs of beneficiaries and operators, with a view to that most of the diseases that affect the population can be prevented. [4]

The model of health care adopted by most of the country's health care providers has been the privative care physician, focused on the demand for the disease and the spontaneous demand of the users, within a curative perspective, thus meeting the needs for immediate treatment of the same. [4]

Malta (2004) states that "in order to avoid the fragmentation of care, it should operate in another format of the care model guided by a caring work process that guides this path. [4.7] When this does not exist, the user makes his own walk in the service network, inducing the consumption of procedures ". [4.7] It can be seen that the "walk" mentioned by the author also does not present the resolution required by the user and the health care provider herself. [4]

2. Disease Prevention Projects

The major causes of death in the world are represented by chronic noncommunicable diseases (CNCD). [8] In 2008, 36 million deaths were recorded, or 63% of the global total deaths. [8] Of this total, 78% occurred in low- and middle-income countries. [8] In addition to mortality, we highlight sequelae and disabilities. [8,9] As far as productivity is concerned, chronic diseases affect the workforce because the person who retires early has a reduced number of hours worked, thus directly compromising the salary earned and the position reached. [8.9]

It is estimated that in the year 2020 in Brazil, 80% of the deaths result from CNCD, a result of changes in lifestyle, resulting from industrialization, urbanization, economic development and population aging. [8.9]

According to the WHO, NCDs lead to losses in the economy, influencing the achievement of the millennium development goals, which cover issues such as health, education and the fight against poverty. [8.9]

By changing behavior, reducing risk factors such as smoking, excessive alcohol consumption, sedentary lifestyle and inadequate diet, chronic non-communicable diseases such as hypertension, dyslipidemia, cardiovascular disease and diabetes mellitus can be avoided.[8.10]

The Heart Disease Prevention Project was created in 1971 to find out to what extent the major coronary risk factors can be altered in middle-aged men, and what effect such changes have on the incidence of those diseases and mortality. [11] The attempt was made in industries where increasing pressure for routine cardiac exams and preventive counseling has left many physicians at work uncertain about which policy to adopt. [11]

The program included advice on dietary reduction of plasma cholesterol concentrations, stopping or reducing smoking, weight reduction, daily exercise and treatment of hypertension. [11] All men, but particularly those with dyslipidemia, were advised to reduce intake of saturated fat and cholesterol, and to replace margarine and vegetable oil. [11] Men whose weight to height were 15% or more the average for their age were also advised to restrict their energy consumption, mainly fat and sugar. [11] All smokers were asked if they would like to stop smoking. [11]The 400 who responded positively received a letter of encouragement, along with an attached booklet of anti-smoking advice and a daily smoking registration card. [11] The short-term results were encouraging, with reductions of up to 40% in the number of cigarettes allegedly smoked after one year. [11]

This study showed that the analysis of personal characteristics can identify individuals with a high risk of developing coronary heart disease and that a substantial change in living habits requires personal contact with the worker. [11]

3. Prevention of Work Accidents

The scientific community has also shown that many times the cause of an occupational accident is associated with workers' failure to observe universal precautions. [1] It is known that excessive workload causes accidents and sickness of workers, resulting in periods of withdrawal of the worker more or less prolonged. [1]

In organizations already committed to the PQMCT (Quality Program for the Improvement of Working Conditions) "zero" accidents are celebrated, where informative *briefings* on prevention are held, and how to obtain better working conditions, both from the psychic point of view and from the

psychosocial point of view. [12] It is possible, for example, to distribute diplomas to the areas / teams that, in the previous year, had a lower accident rate. [12] It is an indicator of positive reinforcement and commitment. [12]

Management support is essential to the success of the program. [12] It should collaborate not only for the PQMCT's adjustment to the organization's strategy, but mainly by setting the example to the hierarchical chain below. [12]

4. Health Promotion and Prevention Programs within Industries

Health promotion programs aim to promote and value good living and working conditions, in order to avoid health problems and provide better quality of life for users, while prevention programs include actions to prevent the onset of illness and / or allow to detect it before its clinical manifestation, reducing its morbid effects when it is already installed. [4]

One of the fields of action of health promotion proposed in the Ottawa Charter (1986) is that of personal and social development through the dissemination of information, health education, and enhancement of vital skills, thereby increasing the options available to population to exercise greater control over their own health, the environment and to make choices that lead to a better health condition.[4]

Yano (2010) considers that working conditions are responsible for sickness absenteeism, including not only occupational diseases and accidents, but also common diseases. [2,13] According to this author, the psychosocial and relational factors of the work environment when interacting with the worker's social and personal factors can increase health problems and depress the immune system, increasing vulnerability to non-work-related diseases and infections , such as influenza, chronic musculoskeletal stress and hypertension. [2]

The implementation in companies of the Chronic Disease Management Program makes it possible for individuals to become more aware of all health problems, motivating them to adopt a healthy lifestyle. [8] Adherence to the guidelines and prevention of complications related to diseases is verified. [8.14]

It is relevant for companies to implement these monitoring programs in search of a better quality of life, greater productivity, reduction of absenteeism and use of claims to evaluate the financial impact of the program, analyzing the variation of the company's medical expenses with its employees. [8]

In a Chronic / Cardiovascular Disease Control Program carried out in an automobile industry in the country, the monitoring is performed by a nurse and nutritionist, through individual consultations. [8] During the service, anamnesis, physical examination, blood pressure measurement, capillary glycemia, diabetic foot neurological evaluation, guidance on existing pathology, weighing, abdominal circumference measurement, body mass index calculation, food consumption assessment , prescriptions and dietary guidelines, making workers aware of healthy and preventive behaviors. [8]

The cardiovascular health protocol is used for patients with hypertension, cardiovascular diseases and dyslipidemia. [8] To perform the stratification of the degree of disease involvement, physical examination and determination of risk factors according to the Framingham Score are performed. [8] In the monitoring of patients with diabetes mellitus, risk stratification is performed with physical examination and evaluation of lesions in target organs: presence of diabetic retinopathy, nephropathy, lower limb amputations and heart disease, and by analysis of the groups of according to the degree of impairment of the pathology. [8]

It is also important to highlight the indicators of health care providers that implemented promotion and prevention actions and identified a reduction in their care costs with the adoption of such actions. The data were released by UNIDAS - National Union of Health Self-Management Institutions (2005):

- PASA (Vale do Rio Doce Company Pension Plan) - Chronic Patient Management Program: annual savings of up to 45% for chronic patients, reduction of hospitalizations by 40% and urgency. [4]

- SABESPREV (SABESP Foundation for Social Security - Basic Sanitation Company of São Paulo) - Chronic Patient Management Program: reduction of 47.12% in costs, 43% in outpatient clinics, 44% in exams and 48% in hospital expenses. [4]

- CELGMED (Goiás Energy Company) - Cardiovascular Disease and Diabetes Management Program: 55% reduction in cases of influenza and pneumonia with vaccine campaign development. [4]

In the UNITED NATIONAL RESEARCH of 2017/2018, the main causes of hospitalizations reported by the operators were analyzed, based on the ICD (International Code of Diseases). [15] First, there were diseases of the circulatory system, especially angina, stroke, heart failure, arterial hypertension and acute myocardial infarction. [15] Cases of reports of diseases of the genitourinary system appear in second place, and, third, diseases of the respiratory system. [15]

The rate of hospitalizations for conditions sensitive to primary care, also known as "potentially preventable hospitalizations", reached 5.2%. [15] This classification has been used in various parts of the world to assess and monitor access to and performance of the health system. [15] When a health system presents a very high number of cases of hospitalization for these causes, it may mean that there are deficits in primary care. [15]

Korea, for example, has two main statistics for occupational diseases. [16] The first is a measure of the number of suspected occupational diseases identified by the Periodic Health Examination Program. [16] The second is a measure of the number of workers compensated for occupational diseases, obtained through the Industrial Accident Compensation Insurance. [16]

Periodic Health Screening statistics are very effective in finding chronic asymptomatic conditions such as pneumoconiosis, hearing loss, and some intoxications. [16] However, it is difficult to detect symptomatic diseases without any signs, such as asthma and easily curable diseases such as dermatitis, due to the characteristics of the periodic examination. [16] What also hurts is the fact that employers are also very reluctant to reveal and report occupational diseases. [16] Therefore, the Periodic Health Exam statistics mainly include pneumoconiosis and noise-induced hearing loss. [16]

Official statistics on occupational accidents and illnesses use the data from the Industrial Accident Compensation Insurance. [16]Statistics include the so-called work-related diseases, such as cerebrovascular diseases, which can not be compensated in most countries. [16] The concept of social insurance rather than scientific evidence has made these diseases compensable in this country. [16]These policy decisions may have inflated occupational disease and death statistics in Korea, and thus limited statistical comparisons with other countries. [16]

5. The Medical Expertise and the National Institute of Social Security (INSS)

When a worker is dismissed for any illness and referred to the INSS, in case the physician-expert finds that the disease is related to the branch of activity of the company, it automatically becomes an occupational or occupational disease, , the responsibility to prove otherwise. [2.13] This administrative challenge must consist of evidences such as ergonomic studies, health promotion and safety programs effectively implemented and documenta- tions that prove that the organization has not affected the worker or adopts control measures to reduce withdrawals. [2,3]In case the company does not present sufficient evidence to de-characterize the nexus for the kind of accident benefit, each incident of removal starts to compose a database in the INSS that may increase the rate on the organizations payroll. [2,3]

The main causes of absenteeism were: accidents and injuries (62.8%), musculoskeletal and connective tissue diseases (25.8%), according to the number of benefits granted by the INSS to workers who moved away for more than 15 days. and mental and behavioral disorders (4.2%). [2]

The Social Security, through a report that presents the panorama on the most incident illnesses in men and women employed of the private initiative *versus* benefits granted in the period from 2004 to 2013, revealed that of the 20 most frequent health problems in women, leiomyoma of the uterus was ranked seventh. [2]

Of the diseases that caused most absenteeism in male workers, most were related to general health problems, although diseases supposedly related to work were identified according to the industry's CNAE (National Classification of Economic Activities) and / or other social security links. [2]

Work-related musculoskeletal disorders (DORS) in the US have affected the private sector in about 320,000 "lost workday cases" per year, accounting for 29% of all lost days and allegations of injury and illness. [17] Among DORTs, the body regions most commonly involved are lumbar spine (48%), shoulder (13%), upper limbs (5%), knee (5%), ankle or foot (2%) and multiple sites (5%). [17] Most of the costs for WRMD related to the lumbar spine and the hand or wrist injuries, predominately in the manufacture and provision of service industries. [17] Costs for DORTs exceed those for cancer and are exceeded only by cardiovascular disease and trauma costs.[17]Estimates of the annual economic burden of DORTs in the US are between $ 45 and $ 54 billion. [17] Older workers may be more susceptible due to a decrease in their muscular capacities, including reduced muscle strength (about 10% per decade); decreased joint mobility and tissue elasticity; decreased mobility of the lumbar spine, inducing changes in muscle recruitment; structural changes in the spine and supporting joints; decline in sensorimotor responses and decrease in cognitive processes, such as memory, attention and primary processing. [17]

6. Musculoskeletal Injuries and Ergonomics

Serranheira (2007) refers to Work-related Musculoskeletal Injuries (LMELT), as chronic and multifactorial pathologies of a professional component, being a functional disorder where the main manifestation is pain. [18,19] These types of injuries affect the muscles, tendons, ligaments, joints, cartilage, bones, spine and peripheral nerves. [18] Currently, LMELTs have a major impact on organizations, with increasingly evident damages, not only to the organization (high absenteeism rates), but also to workers' health (inability, both for professional activities and for activities of everyday life). [18]

In the European Union (EU) cervical and upper limb affections are a significant health problem, as are the costs associated with work.[18] Data available from the Nordic countries and the Netherlands suggest that the costs of these types of disturbances are between 0.5% and 2% of gross domestic product. [18] The scale of this problem tends to increase as workers are increasingly

exposed to risk factors. [18]In 2007, the European Agency for Safety and Health at Work (EU-OSHA) showed that 57% of workers mentioned that work involves repetitive movements of arms and hands; 56% are exposed to time constraints; 54% are subject to excessive work rates and 42% are not free to decide the break times. [18]

The introduction of LMELT prevention strategies in organizations with a view to reducing their impact has become more significant. [18]Growing concern in the area of social responsibility has led to an increase in the number of organizations facing training and information in the area of LMELT prevention, ergonomic analysis of workplaces and work-related gymnastics as essential and essential conditions for increasing productivity and competitiveness of these organizations. [18]

Like any other pathology, the earlier the diagnosis, the easier it will be to treat it, and the less likely it will be for the employee to leave the hospital due to disability. [18] In the absence of a diagnosis, exposure to risk factors is maintained, and symptoms that were initially intermittent gradually become persistent. [18]

The costs associated with LMELT may be direct (insured) or indirect (uninsured). [18] The direct costs are related to: indemnities, treatments with medical and pharmaceutical care and, ancillary management charges. [18] Indirect costs include the costs of recruiting new professionals, training and training of new staff, absenteeism (loss of working days), presentism (decreased productivity), and employee demotivation. [18] In addition to the mentioned costs, we add the financial and emotional losses. [18]

There is, however, a group of costs which, although they are related to the accident claims, are not transferred to the insurance company. [18] Such as: costs related to the actual day of the accident, provision of first aid, minor treatments, equipment breakdowns, damaged materials / products, delays in delivery times, among others. [18]

EU-OSHA (2007) advocates that "physical preparation can be effective in reducing the recurrence of back pain and pain in the shoulders and neck region. But for this, this physical preparation must include vigorous exercise, repeated at least three times a week. " [18,20]

Some authors point out that standing position in the workplace has a significant impact on health, productivity and absenteeism. [21] In this context, ergonomics aims to improve the work environment for the health and productivity of workers by adapting work to the human being. [18,22] It allows us to contextualize human work in order to find the working conditions that allow the worker to interact better from the point of view of comfort and safety, with the support of his adjustment to the characteristics and limitations of each individual. [18]

In a study carried out by Penatti Filho (2006), which over a five-year period evaluated the most common diseases among workers in an automobile industry, it was verified that among the most common diseases in workers were limb pain, headache and low back pain and, according to the researcher, these distances were directly related to ergonomic issues. [2.23]

In Latin America, study results show that 5.4% of absenteeism was caused by low back pain, the cause of which is more distant when compared to the rest of the population. [2]

7. Conclusion

EU-OSHA (2007) highlights the reduction in working hours as well as the introduction of breaks, in particular in repetitive work, so as to reduce the incidence of LMELT. [18,20]

Likewise, actions should be taken to address chronic and / or high-cost cases, by monitoring and managing the treatment and surveying the epidemiological profile of the company's population, with a view to acting in the promotion and prevention in the most diverse needs of users. [4]

Therefore, actions such as preventive and informative consultations are necessary to teach health behaviors and healthy habits, as well as continuously monitor the prevalence of risk factors. [8] Through the control promoted by a Chronic Disease Management Program, it is possible to improve workers' quality of life, productivity, education in the use of health services and reduction of the expenses of the organization, which becomes a benefit for both the worker and the company. [8]

Absenteeism is an obstacle to an organization's productivity and profitability, as it generates overtime pay costs for regular employees to cover personnel shortages, leads to noncompliance with deadlines, creates customer dissatisfaction, and generates expenses on treatments and rehabilitations of the worker.

It is concluded that it is vitally important for the company to have a proactive health and safety sector, which is not only concerned with complying with the legislation, because with an efficient and collaborative work of the health, safety and health teams and management there will be fundamental long-term financial gains for the company.

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