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PROFILE OF WORK ACCIDENTS NOTIFIED IN THE YEARS OF 2014 TO 2016, IN THE STATE OF TOCANTINS, BRAZIL

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ABSTRACT

This study aimed to describe the profile of work accidents in the state of Tocantins. This is a cross-sectional study about reports of Work Accidents from the statistical yearbook of occupational accidents, from the State of Tocantins, from 2014 to 2016. Results: Of the 4,453 cases registered, 80.5% corresponded to individuals of the male gender and 19.4% were between 20 and 49 years of age. The nature of the most frequent accident was typical (60.5%) while driving (19.5%) and work sickness (1.5%). The high number of serious work-related accidents recorded indicates the need for companies to provide adequate protective equipment and work environment and workers to use such equipment.

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INTRODUCTION

Occupational diseases and occupational accidents are considered a serious public health problem in the world, where lack of information about work accidents is one of the main problems that make it difficult to plan and carry out actions on workers' health. In this way, knowing the incidence and prevalence of work accidents and the conditioning factors of these injuries are essential for the development of actions aimed at the prevention, promotion and protection of workers' health. The Ministry of Labor and Employment (2010) defines a work injury (AT) as that occurring in the environment and in working hours or out of work, but during office hours, which is the main cause and / or collaborative factor for the worker to go to death, with loss or loss of ability to work, or even generate injury requiring medical care for recovery. In addition, a fatal work accident is considered to result in the death of the worker, after his or her event or later, in any of

these moments, whether in the hospital environment or not, provided that the main, intermediate or immediate cause of death, is related to the accident. The Ministry of Social Security (2008) notes that the International Labor Organization (ILO) reports the existence of 160 million work-related illnesses per year, with 250 million occupational accidents and 330,000 deaths worldwide. According to the data revealed through the Folha de Londrina newspaper that in Brazil every two hours of work, three workers go to death and every minute of work, three accidents happen. In this context, Miranda (2012) point out that occupational accidents are larger than the current statistics estimate, whose concrete proportion, including social cost, has not been favorable due to the presence of innumerable factors. It is worth mentioning that the main source of information on statistical data regarding occupational accidents in the country corresponds to the National Institute of Social Security (INSS), where the actual data only concern accidents reported and that affect insured workers, not including accidents with individuals working in the informal sector, and who constitute a relevant amount of the economically active population. According to the Situation

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Report of the State of Tocantins published through the Secretariat of Health Surveillance (MS), 40% of the total reports of occupational accidents in the North region were registered. Maintaining the national and regional profile. The notifications focus mainly on serious accidents and accidents with biological material, with a percentage representation of 26%, and the second intoxications in conjunction with the registry of isolated cases of occupational dermatoses and pneumoconiosis (BRAZIL, 2011). Therefore, it is questioned: what is the profile of occupational accidents recorded in the static annual work-related accidents in the state of Tocantins? The choice of theme is justified by the interest in drawing the profile of the victims of work accidents in the state of Tocantins. In this way, this information will allow managers and employers to know the local reality and from this, to plan and implement strategies, aimed at the prevention of accidents in the workplace. In this context, the purpose of this study is to characterize the occurrence of work accidents, from the State of Tocantins, from 2014 to 2016.

Conceptual aspects of work accident

Work accident is one that results from the professional exercise and that causes bodily injury to the functional disturbance that causes the loss or reduction, permanent or temporary, of the capacity for work (NASCIMENTO, 2013). According to Gonçalves (2012) the work accident corresponds to any accident that is directly related to the work of the individual, and that causes bodily injury and / or disturbance, which can cause the death of the individual or even the loss or reduction of the permanent or temporary capacity to perform the work. For this reason, it is noted that the work accident is an event that happens suddenly, unexpectedly, and with consequences in most of the immediate cases. Thus, the term accident means a fortuitous event, which happens by chance, in an unforeseen and fatal way. This meaning is related to common sense and understands the events of nature in general that are marked by the impossibility of controlling the triggers of work accidents. Therefore, the relationship between the accident with work is superficial, that is, with a limited dimension, but based on descriptive models that do not cover the entire production process (CODEIRO, 2012). For the Ministry of Social Security and the Brazilian Association of Technical Norms (ABNT) the accident of the worker is defined as that which occurs by the exercise of the work of the company or by the exercise of the work of insured persons, causing bodily injury or functional, permanent or temporary disturbance that causes death, or loss or reduction of ability to work. It adopts the definition of work accidents similar to those of the law, which defines work accidents as an unexpected and undesirable occurrence, instantaneous or not, that is associated with the worker, which causes bodily injury or near or remote risk of injury (BRAZIL, 2008b)

Historical aspects of work accidents: Since antiquity the work-related accident was part of the day-to-day of the workers. However, only from the nineteenth century onwards did it become recognized, due to the advance of industrialization and the workers' struggles it related to (CAVALCANTE, 2015). About this, the earliest references involving health, work, and disease were found in antiquity around 1500 BC. C, among the Egyptian papyri and in Greco-Roman civilization (VASCONCELLOS; PIGNATI, 2006). Araújo (2011) points out that Plínio, O Velho (23-79 AD), in his treatise "Historia Naturalis," in visiting workplaces,

describes impressively the workers' exposure to lead, mercury, and dust. In addition, it refers to the first protective equipment called masks, cloths or membranes of the face bladder, which are an initiative of the slaves themselves to ease the inhalation of dust harmful to their health. The same author states that in the Middle Ages, Agricultural Georgius (1494-1555) and Paracelsus (1493-1541) wrote treatises describing the disease pictures that were probably work-related. In this way, Georgiu Agrícola, when writing a post-mortem book "DeRe Metallica", devotes a chapter exclusively to the accidents at work and to the most frequent illnesses among the miners of that time. When referring to "miners' asthma" in his book, he is supposed to be talking about silicosis. However, Paracelsus already emphasizes in his treaties the intoxication of workers with mercury. In turn, almost two centuries later, in 1700, Bernardino Ramazzini, an Italian physician, wrote a book whose title was "De Morbis Artificum Distriba" (that is, "Diseases of the Workers", which described 54 professions and about the main risks or health problems experienced by workers, highlighting the need of physicians to carry out adequate anamnesis, with the objective of discovering the causal nexus, health-work-illness (VASCONCELOS; PIGNATI, 2006).

In the Industrial Revolution, there was an improvement in working conditions, which were previously subhuman, accidents and illness were constant, there was no working day fixed by law, and workers were forced to work for approximately 16 hours a day, and in addition, the conditions of the work environments were terrible, the machines had no protection, they had intense noises, lack of ventilation, factors that also contributed to the appearance of the infect contacting diseases (MENDES, 2005). Reinforcing the previous argument, during the Industrial Revolution, politicians and legislators began to introduce measures aimed at controlling the conditions of work environments, creating, in 1833, Factory Act ("Law of Factories"), the first law really efficient, in the which concerns the protection of the worker. Since then, companies have also started hiring physicians to monitor workers' health in work environments (MONTEIRO, 2013). At the end of the nineteenth century and between the beginning of the twentieth century, the International Labor Organization (ILO) was created, which was consolidated in the postwar period in 1918 by the Treaty of Versailles, constituting the international regulating body of relations between labor and capital (ARAÚJO, 2011).

MATERIALS AND METHODS

A quantitative, descriptive and population-based approach was used on the profile of work-related accidents reported in the state of Tocantins, based on information generated by the National Statistical Yearbook of Occupational Accidents, available on the website of the Ministry of Social Security and Social Security. The quantitative study is carried out by obtaining structured answers, the analysis techniques are deductive and result oriented. The quantitative approach seeks to report meanings that are considered peculiar to the objects, has as peculiarity to allow a focused and punctual and structured approach, using quantitative data (COZBY, 2003). On the other hand, exploratory research has as its purpose to provide greater familiarity with the problem, with a view to making it more explicit, and may involve a bibliographical survey, interviews with people experienced in the problem researched. Generally, it takes the form of bibliographic

research and case study (GIL, 2010). According to Gil (2010) the descriptive research aims to describe the characteristics of certain populations or phenomena, to discover the existence of associations between variables. One of its characteristics is the use of standardized techniques of data collection, such as the questionnaire and systematic observation. It is also important to describe the characteristics of groups (age, gender, origin, etc.). The population was composed of the cases registered in the national static annual work-related accident calendar for the years 2014, 2015 and 2016 and the sample will be 100%. Based on the criteria for inclusion of references, a bibliographical survey was carried out through the selective reading and analysis of thematic units, according to the technical criteria discussed by Gil (2010), when elaborated from already published material, consisting of books, periodicals and currently with material available on the internet. After collecting the material on work accidents, a careful analysis was made, based on the exploratory research to identify sources for the development of the research. The last step of the reading process consisted in the interpretative reading of the bibliographic material. Thus, for database construction and statistical analysis, all registered cases of the National Statistical Yearbook of Labor Accidents notification of the year 2014, 2015 and 2016 of the state of Tocantins, made available on the website of the Ministry of Labor, were analyzed and data tabulated and grouped into charts using the spreadsheet program electronic Excel 2007 and in tables.

RESULTS AND DISCUSSION

In the state of Tocantins in the years of 2014, 2015 and 2016, registered 4.4 work entrants in total. From the registered notifications, it was verified that (34.79%) referred to the year 2014, (31.61%) in the year 2015 and (33.60%) in the year of 2016 (Table 1).

Table 1. Number of work accidents occurred and recorded per year in the state of Tocantins, Brazil, 2014 - 2016

Year	N°	%
2014	1.549	34,79
2015	1.408	31,61
2016	1.496	33,60
Total	4.453	100

Source: AEAT, (2016).

Table 2. Frequency of work accidents per year according to gender and age in the State of Tocantins, Brazil, 2014 – 2016

Variable	2014 N°	2015 N°	2016 N°	TOTAL N°	
Sex					
Male	1.260	1.131	1.198	3.589	80,5
Female	288	277	298	864	19,4
Ignored	1	-	-	1	0,1
Age (in years)					
Up to 19 years	60	32	41	133	3
20 – 29 years	546	498	532	1576	35,4
30 – 39 years	489	503	476	1468	33
40 – 49 years	271	235	277	783	17,5
50 – 59 years	154	119	138	411	9,2
60 – 69 years	29	19	31	79	1,8
70 years and over	-	2	1	3	0,1

Source: AEAT, (2016).

In the grouping of AT species, it was observed that those that were "typical" totaled 60.5% "path", 19.5%, work sickness (1.5%) and the unfilled ones were (18, 5%). Considering that

the accidents of the first group are related to the type of work performed, it is understood that actions can be promoted to prevent this type of event. At the same time, the relevance of the portion of these events due to an unsafe act was observed, which indicates the carelessness of the injured, while the insecure condition, whose responsibility is of the organization, the proportion is smaller as can be observed in the table below.

Table 3. Number of work accidents according to the reason / type of the accident in the State of Tocantins, Brazil, 2014 – 2016

Variable	2014 N°	2015 N°	2016 N°	TOTAL N°	
Type of Accident					
Typical	880	880	937	2.697	60,5
Route	308	268	295	871	19,5
Work Sickness	26	24	17	67	1,5
Not completed	335	236	247	818	18,5

Source: AEAT, (2016).

In the grouping of AT species, it was observed that those that were "typical" totaled 60.5% "path", 19.5%, work sickness (1.5%) and the unfilled ones were (18, 5%). Considering that the accidents of the first group are related to the type of work performed, it is understood that actions can be promoted to prevent this type of event. At the same time, the relevance of the portion of these events due to an unsafe act was observed, which indicates the carelessness of the injured, while the insecure condition, which is the responsibility of the organization, is less. Table 4 shows the five types of consequences of work accidents settled between 2014 and 2016 and their evolution. It is ordered from the least severe (Medical Assistance) to the most serious (Deaths).

Table 4. Number of work accidents settled, according to the consequences, in the State of Tocantins, Brazil, 2014 – 2016

Consequences	2014 N°	2015 N°	2016 N°	TOTAL N°	
Medical Assistance	108	148	194	450	9,5
Less than 15 days	762	883	895	2.540	55
More than 15 days	671	382	412	1.465	32
Permanent Disability	50	38	29	117	2,5
Death	18	20	15	53	1

Source: AEAT, (2016).

Cases of medical care increased in 2016, becoming the third most common consequence of work-related accidents. On the other hand, the incapacity with withdrawal of less than 15 days presented (55%) of the cases, being the consequence of greater occurrence, with 2,540 in the studied period. The incapacities with more than 15 days of leave had a decrease between 2015 and 2016 and in the studied period only one (1%) of death was registered by work accident. This inversion, since previously the most serious accidents were more prevalent, could indicate that there was either a reduction in the severity of the occurrences or a trend of recording the less serious occurrences by the companies. Both possibilities suggest positive developments in the system. This study was similar to the research conducted by Malta *et al.* (2017), in a descriptive study with data from the National Health Survey, with a total of 4,948 people in Brazil who suffered from TA. The results of this study were similar to a survey conducted in hospitals in two areas of southern China in the years 2006 to 2008, which revealed that of 8,929 work-related accidents, 82.88% were men (FRICKMANN, 2012). These data reveal the worldwide prevalence of severe male work-related accidents and demonstrate the need to work towards the prevention of these

diseases with a greater focus on this population (KIRCHHOF, 2004). The numbers are justified by the fact that most male workers perform tasks with greater risk of accidents. Regarding the age group, occupational accidents in the period evaluated, mainly affected people between 20 to 29 years (35.4%). Results found in a study carried out in Fortaleza, from 2008 to 2012, indicate a predominantly younger age between 20 and 30 years (32.7%), similar to the findings of this study. Many studies point to the age group of young adults between 20 and 40 years as the most frequently involved in serious work accidents, and because they represent the high productivity in the labor market cause significant losses in the country's economy (SCUSSIATO, 2013). The number of accidents, which are mainly typical, are of a higher incidence, and companies are not aware of these risks and do not invest in promoting and preventing the health of their employees, since leaving the employee increases the cost to the employer. (PROCHNOW *et al.*, 2011). Yet these accidents may be related to the non-use of personal protective equipment. Among the sample studied by Costa (2010), concerning the consequences, 43.7% of work accidents resulted in some temporary or total temporary incapacity. In Brazil, in 2010 the rate of temporary incapacity in work-related accidents was 84.2%. Another aspect to be considered in addition to the incapacities and limitations is the fact that occupational accidents hamper not only the performance of activities related to the occupation, but also the daily routine of the worker, leading to a feeling of personal and professional dissatisfaction and can trigger mental disorders such as depression and anxiety (CAVALCANTE, 2015).

Conclusion

The high number of work accidents recorded in this study points out the need for companies to provide safety equipment and safe work environment to their employees. The use of secondary data sources allows the use of broader samples, at low cost, with greater external validity and methodological flexibility. The survey of the characteristics of the serious work accidents allowed to know the profile of the injured workers. The results offer subsidies for the elaboration of conducts that prioritize the prevention of serious work accidents.

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