



**CHARACTERIZATION OF WORK RELATED DISORDERS**  
**CARACTERIZAÇÃO DE AGRAVOS RELACIONADOS AO TRABALHO**  
**CARACTERIZACIÓN DE TRASTORNOS RELACIONADOS AL TRABAJO**

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**ABSTRACT**

**Objective:** to characterize disorders related to work. **Method:** descriptive retrospective documentary study of a quantitative approach, performed in SINAN NET database CEREST, Teresina/PI, from 2007 to 2011. For the data collection, an instrument was created based on models of existing reporting forms. There were analyzed the sociodemographic and the occupational variables, and elaborated tables and figures in Excel for presentation and discussion of the data. **Results:** there were recorded 2.424 injuries related to work, being serious accidents a total of 79.4%; work accidents with exposure to biological material 17%; exogenous intoxication with 3%; RSI/MSDs with 0.5% and 0.1% with pneumoconiosis. There was a predominance of the age group between 20-49 years old, and males. **Conclusion:** the research showed the need for encouraging the improvement of the completion of the reporting forms. **Descriptors:** Health Worker; Accidents at Work; Occupational Accidents Registry; Nursing.

**RESUMO**

**Objetivo:** caracterizar os agravos relacionados ao trabalho. **Método:** estudo descritivo documental retrospectivo, de abordagem quantitativa, realizada no banco de dados do SINAN NET do CEREST de Teresina/PI no período de 2007 a 2011. Para a coleta de dados elaborou-se instrumento fundamentado nos modelos de fichas de notificação vigentes. Foram analisadas as variáveis sociodemográficas e ocupacionais, e elaborados tabelas e figuras no programa Excel para apresentação e discussão dos dados. **Resultados:** foram registrados 2.424 agravos relacionados ao trabalho, sendo que acidente grave ficou com 79,4%; acidente de trabalho com exposição a material biológico 17%; intoxicação exógena com 3%; LER/DORT com 0,5% e pneumoconioses com 0,1%. Houve predominância das faixas etárias entre 20-49 anos, e do sexo masculino. **Conclusão:** a investigação mostrou a necessidade de estímulo ao aprimoramento do preenchimento das fichas de notificação. **Descritores:** Saúde do Trabalhador; Acidentes de Trabalho; Notificação de Acidentes de Trabalho; Enfermagem.

**RESUMEN**

**Objetivo:** caracterizar las enfermedades relacionadas con el trabajo. **Método:** estudio descriptivo documental retrospectivo con un enfoque cuantitativo, realizado en la base de datos SINAN NET del CEREST de Teresina/PI, dentre 2007 y 2011. Para el instrumento de recolección de datos fue elaborado un instrumento basado en los modelos de formularios de información existentes. Se analizaron las variables sociodemográficas y ocupacionales, y las figuras y tablas elaboradas en Excel para la presentación y discusión de los datos. **Resultados:** se registraron 2.424 lesiones relacionadas con el trabajo, y el grave accidente quedó con 79,4%; accidentes con exposición a material biológico 17%; intoxicación exógena, con 3%; RSI/TME con 0,5% y 0,1% con neumoconiosis. Hubo un predominio del grupo de edad entre 20-49 años, y hombres. **Conclusión:** la investigación demostró la necesidad de fomentar la mejora de la implementación de los formularios de presentación de informes. **Descriptores:** Trabajador de la Salud; Accidentes en el Trabajo; Notificación de los Accidentes de Trabajo; Enfermería.

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## INTRODUCTION

Human labor is a tool that ensures men integration in society and the economy of the historical context that lives in. The act of developing a certain type of work requires the use of physical and psychic energy by the employee in this way, the work is closely linked to human achievement. There are several work benefits to the human being, such as the production of goods and wealth. However, work may result in damage to the worker, bringing negative effects. Throughout history, have meaning disease, disability and death, as observed in the industrial revolution occurred in England where workers were subjected to inhumane work.<sup>1</sup>

Human work and relations with workers' health have become a source of scientific research, and more recently it was possible to observe the theme included in public policies of Brazilian health. In Brazil, with respect to the numbers of accidents reported by the statistical yearbooks of social security, from 2009 to 2011, there were recorded in the country 2.154.003 industrial accidents.<sup>2</sup> A study in Piauí showed that between 2007-2010 there was a total of 4.511 workplace accidents registered in CAT (a workers support program), and 3.192 (70.7%) were typical accidents, 1.209 (26.8%) path and 110 (2.4%) disease related to work.<sup>3</sup>

In the context of health policies in Brazil, worker health is consolidated as an area of interest with the representation of the Constitution of 1988, which creates the Unified Health System (SUS) and lists among its powers to perform actions for workers' health.<sup>4</sup>

In this context, workers' health is defined as a broad range of activities aimed at comprehensive care workers, through the promotion and protection of health, as well as aims at the recovery and rehabilitation of workers subject to the risks and hazards arising from the work conditions.<sup>5</sup>

Since 2002 it has been established the National Comprehensive Care Network for Workers' Health (RENAST) as a strategic tool for the dissemination of the principles and Occupational Health field practices in SUS, in all care levels.<sup>4,6</sup> It has a network of information and health practices organized to perform care actions, surveillance and health promotion; comprises the Worker's Health Reference Centers (CEREST), state, regional and municipal, the sentinel units, occupational health centers and other NHS services aimed at this health field.<sup>7</sup>

Note also that the employee's health has as support in order to detect, understand, research and analyze the determinants and conditions of health problems related to the processes and work environments, the Occupational Health Surveillance (VISAT) component of the National System of Health Surveillance, which has the purpose of planning, implementing and evaluating interventions on these aspects in order to eliminate them or control it.<sup>8</sup>

Workers' health does not has its own information system, but important information for planning strategies are available through two instruments, Work Accident Communication (CAT), and the Information System for Notifiable Diseases (SINAN) that in addition to the obligation to notify the national compulsory list of diseases in which there is the possibility of including the worsening of the relationship system with the working environment, it was included since 2004 by Decree N 777/2004, with a list of 11 grievances related to worker health should be notified by compulsorily network SUS sentry services, strengthening surveillance actions in the area.<sup>9</sup>

## OBJECTIVES

- To characterize the diseases related to work.

## METHOD

This is a descriptive documentary retrospective study, with a quantitative approach.<sup>10-2</sup> The survey was conducted from reports of injuries related to the work available in SINAN NET Teresina CEREST from 2007 to 2011. It is noteworthy the importance of such records for control, awareness and care of health professionals and the population.<sup>13</sup> The grievances were available for analysis: serious work accidents, work accidents with biological material, exogenous intoxication, RSI/MSDs and pneumoconiosis.

For data collection it was elaborated instrument based on literature review and models of existing reporting forms. The variables studied were: the frequency of diseases and accidents at work, year of occurrence, place of occurrence, sociodemographic variables (age, sex, race/color and schooling) and occupational variables (situation in the labor market, issued by CAT and occupation).

It is noted that the study is linked to the project entitled "Panorama of epidemiological diseases and work-related accidents in Piauí". Scholarships funded by the Institutional Program for Scientific Initiation of the State

University of Piauí. Data were statistically analyzed using SPSS for Windows 12.0 for verification frequency measures of central tendency and dispersion. Later tables and graphs in Excel for presentation and discussion of data were developed.

The research project was approved by the Research Ethics Committee of the State University Piauí, under opinion N 178.953 and was authorized by CEREST of Teresina, where the data collection was performed. Since it is a secondary data survey, the use of Informed Consent and Informed was dispensed.

RESULTS

There were 2,424 injuries related to work that were recorded in the SINAN net In Piauí, in the years 2007-2011. It is noteworthy that

among the 11 notifiable diseases in occupational health, only 5 are reported in Piauí. It is important to point out that the pneumoconiosis notifications contained only 2011 data and RSI/MSDs were not available the year 2008 data.

According to Table 1, it can be observed that, among the diseases related to work and notified in SINAN net from 2007 to 2011, we have respectively in descending order: major accident with 79.4% (1925 cases); work accidents with exposure to biological material 17% (412 cases); exogenous intoxication with 3% (73 cases); RSI/MSDs with 0.5% (11 cases) and pneumoconiosis with 0.1% (3 cases).

Table 1. Reported cases of diseases related to work in Piauí, from 2007 to 2011. Teresina, 2013 (N = 2424).

Grievance/Year	2007		2008		2009		2010		2011	
	n	%	n	%	n	%	n	%	n	%
Pneumoconiosis *	-	-	-	-	-	-	-	-	3	0,3
Serious accident	1	8,3	2	6,7	248	75,8	603	81,5	1071	81,4
Accident/BM**	4	33,3	15	50	64	19,6	117	15,8	212	16,1
Exogenous intox.	6	50	13	43,3	14	4,3	18	2,4	22	1,7
RSI/MSDs ***	1	8,3	-	-	1	0,3	2	0,3	7	0,5
Total	12	100	30	100	327	100	740	100	1315	100

Source: SINAN  
\* Only 2011 data  
\*\* Biological material  
\*\*\* Does not have data for 2008

Regarding the region of health where there was the highest number of notification, the Region Entre Rios presented 2106 cases, followed by the Region Chapada das Mangabeiras with 76 cases, coastal plain with 67 cases, Vale dos Rios Buriti and Iatueiras with 52 cases, Cocaís with 67 cases, Guaribas with 38 cases, Carnaubais 23 cases, Tabuleiros do Alto Parnaíba with 12 cases, Vale do Sambito 8 cases, Vale Caninde 1 case. The region of Serra da Capivara did not register any case.

With relation to the municipalities of the countryside that presented greater number of

notifications (with exception of the capital Teresina) stand out Picos (n = 32), Floriano (n = 48), Parnaíba (n = 65), Piripiri (n= 27) and Bom Jesus (n =66 notifications). Figure 1 brings the representation of these data according to the type of aggravation, which makes it possible to observe that Picos, Floriano and Parnaíba notify predominantly accidents with exposure to biological material (24, 33 and 50 respectively), Piripiri has the highest number of notifications of exogenic poisoning related to work environment (15) and in Bom Jesus there is a light of notifications of serious accidents (55).

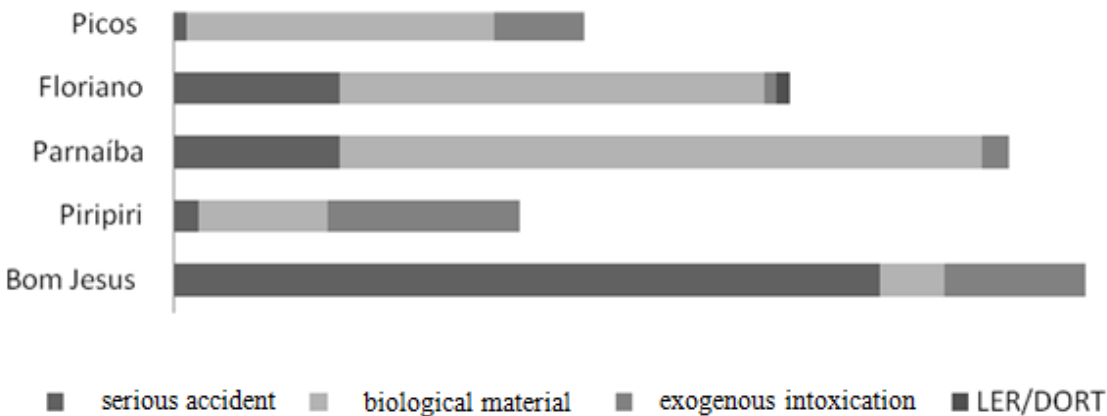
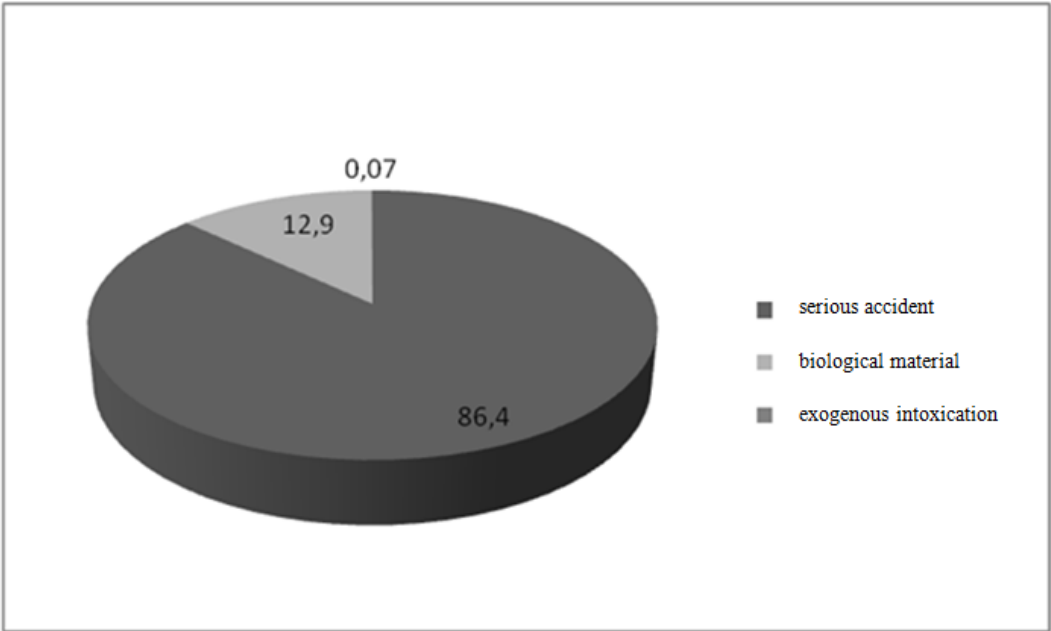


Figure 1. Distribution of notifications related injuries to the working environment according to the city and the type of injury in the 2007-2011 period. Teresina, 2013. Source: SINAN

Regarding the city of Teresina, representing 86.4% of all state notifications during the study period (N = 2095), there is a predominance of major accident notifications, followed by exposure to biological material and exogenous intoxication. It is noteworthy that in this city there were no reports of pneumoconiosis and IRE/WRMD (Figure 2).



**Figure 2.** Percentage of grievances reported in the municipality of Teresina in the 2007-2001 period. Teresina, 2013 (N = 2095).  
Source: SINAN

Table 2 shows the distribution of socio-demographic variables according to the type of illness or accident related to work during the years 2007-2011, in the State of Piauí, in pneumoconiosis, serious accident, accident with biological material, exogenous intoxication and IRE/WRMD, there is a maintenance of socio-demographic profile, the most affected age group is between 20-49 years old, the predominant gender is male,

except in an accident with biological material which occurred predominantly among women. In all the aggravations mulattos have a higher incidence. Regarding education pneumoconiosis occur some discrepancies and exogenous intoxication school period is 0-4 years, major accident 5-8 years, accident biological material above 8 years and RSI/MSDs have variations in tracks 0-4 years and 5-8 years.

Table 2. Distribution of sociodemographic variables on the type of disease or work-related accident in the State of Piauí 2007-2011. Teresina, 2013. (N = 2424)

Variables	Accidents or diseases related to work									
	Pneum.		Serious Accid.		Accid./BM		Exogenous Intox.		IRE/WRMD	
	n	%	n	%	n	%	n	%	n	%
Age (in years)										
10-19	-	0	76	3,9	6	1,5	7	9,5	1	9,1
20-49	3	100	1459	75,8	363	88,1	49	67,1	7	63,6
50-79	-	0	384	19,9	40	9,7	15	20,5	3	27,3
80 or over	-	0	1	00,5	-	0	1	1,3	-	0
Gender										
Male	3	100	1772	92	70	17	51	69,9	7	63,6
Female	-	0	153	8	342	83	22	30,1	4	36,4
School										
Illiterate	-	0	180	9,4	-	0	5	6,8	-	0
0-4 years	2	75	434	22,5	7	1,7	31	42,4	4	33,3
5-8 years	-	0	652	33,4	14	3,4	8	11	4	33,3
Above 8 years	-	0	594	30,8	372	90,3	14	19,2	3	25
Ignored	1	25	60	3,1	16	3,8	14	19,2	1	8,4
Does not apply	-	0	5	0,25	3	0,7	1	1,4	-	0

Source: SINAN

Table 3 details the distribution of accidents and work-related diseases according to occupational variables - situation in the labor market and issue of CAT - during the years 2007-2011 in the state of Piauí. Regarding the situation in the labor market, pneumoconiosis is observed that the percentages are equal to

self-employed (33.3%), unemployed (33.3%) and independent workers (33.3). In severe and exogenous poisoning accident occurs in the most self-employed. Already accident with biological material and IRE/WRMD impaired more public servants. It is important to note that in Pneumoconiosis and RSI/MSDs,



respectively 66.3% and 54.4% of injuries are ignored/white, already in serious accident, biological material and exogenous poisoning the highest percentage is not issued by CAT, with percentages of 48%; 41%; 47.9% respectively.

Table 3. Distribution of accidents and work-related diseases according to the issuance of CAT in the 2007-2011 periods. Teresina, 2013 (N = 2424)

Reported grievances										
Variables	Pneum.		Serious Accid		BM		Ex. I.		IRE/WRMD	
	N	%	N	%	N	%	N	%	N	%
CAT emission										
Ign / Blank	2	66,3	662	34,4	144	35,0	20	27,4	6	54,5
Yes	-	0	26	1,3	81	19,7	8	11	2	18,2
No	1	33,7	939	48,8	169	41	35	47,9	2	18,2
Does not apply	-	-	298	15,5	18	4,3	10	13,7	1	9,1
Job Sit.										
Ign./white	-	-	16	0,8	20	4,9	7	9,6	1	9,1
Registered	-	-	586	30,4	87	21,1	5	6,8	2	18,2
No registr.	-	-	447	23,3	29	7,1	13	17,8	2	18,2
Autonomous	1	33,3	754	39,2	3	0,7	20	27,4	1	9,1
Pub. Serv.	-	-	48	2,5	207	50,2	3	4,1	3	27,3
Retired	-	-	9	0,5	1	0,2	1	1,4	-	0
Unemployed	1	33,3	1	0,05	22	5,3	3	4,1	1	9,1
Independent Worker	1	33,3	19	1	1	0,2	6	8,2	-	0
Employer	-	-	2	0,1	-	-	1	1,4	-	0
Temporary	-	-	26	1,4	-	-	1	1,4	-	0
Other	-	-	17	0,9	42	10,2	13	17,8	1	9,1
Total	3	100	1925	100	412	100	73	100	11	100

Source: SINAN

Regarding the occupations most affected by the diseases, pneumoconiosis in 100% of cases occurred in agricultural work in general. In serious accident hit the main occupations were agricultural workers in general (352 cases); Mason (181 cases); biker in transport documents and small volumes (173 cases); servant works (157 cases); dealer (67 cases) and electric (65 cases). In accidents with biological material hardest hit categories were nursing technicians (252 cases); nurse (33 cases); student (25 cases) and nursing assistants (22 cases). In exogenous and IRE/WRMD poisoning the most affected occupation was agricultural workers in general with 14 cases and five cases respectively.

DISCUSSION

Despite the increased attention of the World Health Organization and the Ministry of Health on occupational health, analyze and discuss data on injuries related to work in Brazil have also been a very difficult activities due to underreporting, imprecision of records, and the difficulties in notifying them and the fact that the protection mechanisms for workers are not very well defined. Accidents are easy to notice because you see, already regarding the disease is more difficult because they develop slowly and there are not always directly related to the work.<sup>14</sup>

Besides, it is disturbing that accidents occur most of the time with people in productive age, which entails high costs of medical treatment, physical and psychological

problems to injured workers and their families, and may lead to death of the professional.<sup>15</sup>

According to this survey, there was an increasing temporal trend in the reporting of accidents and work-related illnesses during the five years studied, deserving highlight serious work accidents and accidents with biological material. The largest proportions of cases reported in Piauí were, in descending order: serious work accidents, accidents with exposure to biological material, exogenous intoxication, IRE/WRMD and pneumoconiosis. This behavior can be associated with the improvement of the structure of CERESTs with the internalization of its activities, improvements in SINAN, organization of health services and professional training of care and epidemiological surveillance. But despite all these improvements it is important to highlight the fact that the Piauí State only notify five of the eleven grievances list to be registered worker's health, so it is for the epidemiological surveillance to investigate this problem, to improve the quality of information in the state.

Piauí is divided into eleven health regions in this study; the region reported the highest number of related diseases to work was the region Entre Rios, and this is because of the Capital State Teresina, the city recorded the highest number of accidents and work-related diseases is included in the health sector and is a reference to the other municipalities. One thing to note is that no case of RSI/MSDs and

pneumoconiosis was recorded in Teresina during the study period.

Regarding the municipalities of the state, there were a greater number of notifications in Picos, Floriano, Parnaíba Piripiri and Bom Jesus. And there was a predominance of accidents with exposure to biological material in Picos, Floriano and Parnaíba. Already in Piripiri the highest percentage was exogenous poisonings related to work and Bom Jesus the highest rates were in serious accidents. Greater attention of the epidemiological surveillance is therefore necessary in relation to these municipalities to reduce the number of occupational accidents.

In Piauí, accidents and labor diseases impaired male aged 20-49 years old showing close relationship with studies in Pernambuco, where the age group most affected by occupational accidents is between 20 to 34, and preferably men<sup>14</sup>. International studies also point males with a higher percentage in work accidents.<sup>16,17</sup> Only in occupational exposure to biological material that the predominant sex was female, supporting the research conducted in Pernambuco<sup>14</sup> and a study in a hospital in Portugal.<sup>18</sup>

Work accidents happen, in most cases, with young adults, causing physical and mental suffering to the victim, as well as for their families, as well as generating economic and financial losses to the country, as this age group is an economically population active.

In this research, it draws attention to occupational diseases in children age, adolescents and elderly, not regulated to work, especially the cases reported in children under one year old, of serious accident, accident with biological material and exogenous intoxication. This may be related to problems in filling of injuries investigation files and/or typing error cases in SINAN NET, which shows the need to improve the quality of information and more specific studies that they verify the accuracy of such data.

Regarding the situation in the labor market, both in this study and in held in Pernambuco<sup>14</sup> show that in accidents biological material the highest proportion occurs between public servants and serious accidents at work is the highest number of self-employed workers.

Regarding the issue of CAT, this study observed that most of the diseases referred higher rates without this document, this happens in an accident with biological material, serious accident and exogenous intoxication. In IRE/WRMD and

pneumoconiosis higher percentages is ignored / blank.

Regarding the occupations most affected by diseases related to work, it emphasizes the group of agricultural workers in general who were the most affected in serious accidents, pneumoconiosis, exogenous intoxication and IRE/WRMD. So, is necessary to establish measures to prevent accidents specific to these workers. With respect to accidents involving biological material hardest hit category was the nursing staff, it corroborates other studies.<sup>19,20</sup>

The great disability of complete and appropriate record, evidenced in this research by the large number of ignored/blank, as well as the inaccuracy of data, influences manifestly the quality of data and its subsequent use for analysis of the epidemiological situation in the State of Piauí.

## CONCLUSION

From the analysis of the SINAN data it was found that the highest number of reported accidents was in serious accident and occupational exposure to biological material. The most affected age group was between 20 and 49 years old, predominantly male. This indicates the need for development of public policies for these diseases and for this population.

Research has shown the need for encouraging the improvement of the completion of the reporting forms, given the imprecision of data and the large number of ignored / blank, found as well as underreporting, which limit the knowledge of the magnitude of the occurrence of diseases work-related and consequent impairment of the planning and implementation of actions on workers' health.

It should reiterate the importance of professional nurses that workers' health scenario, as a health team member and responsible for reporting grievances. Training institutions and CEREST as reference service including the continuing education can contribute to the training of these professionals to raise awareness to the notification and the proper completion of the data sheets.

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