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Surveillance of occupational accidents by sentinel workers' health centers in the municipality of Fortaleza, Northeast of Brazil

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Abstract *This article examines the factors associated with the notification of occupational accidents by sentinel workers' health centers in the municipality of Fortaleza in the northeast of Brazil. An analytical cross-sectional study was conducted of five sentinel workers' health centers for serious and fatal occupational accidents. A total of 354 interviews were conducted with professionals responsible for notifying occupational accidents. Bivariate analysis was conducted using Pearson's chi-square test and/or Fisher's exact test using prevalence ratios and 95% confidence intervals, followed by stratified analysis and multivariate Poisson regression adopting the stepwise forward method. Variables that obtained a p-value of less than or equal to the chosen significance level (0.05) were maintained in the final model. Professionals who had a greater number of years of work experience, had undertaken three training courses, had knowledge of policy directives concerning occupational accidents, were familiar with the SINAN notification form, were aware that occupational accidents are reportable, and discussed the theme of occupational accidents in the workplace were statistically more likely to notify occupational accidents. Education and training helps raise awareness among health professionals.*

Key words *Occupational accidents, Notification of occupational accidents, Workers' Surveillance, Health information systems, Occupational health*

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Introduction

Occupational accidents are considered a socioeconomic problem and a major public health concern[1]. According to the International Labor Organization, approximately 4% of the world's gross domestic product is lost due to occupational accidents and diseases. Furthermore, around 2.3 million people around the world die as a result of work-related diseases and injuries[2].

In Brazil, occupational accidents affect a large part of the working-age population[3]. Data published in the Social Security Statistical Yearbook (*Anuário Estatístico da Previdência Social*) show that there were more than five million occupational accidents in the period 2007 to 2013. A little over 45% of these cases resulted in death, permanent disability, or absence from work[4].

In addition to social and economic costs, occupational accidents account for a large proportion of procedures undertaken in medium and high complexity health care facilities. A little over 25% of injuries due to external causes treated by emergency services in Brazil are attributable to occupational accidents[5]. However, despite the epidemiological consequences of occupational accidents, the magnitude of this problem in the country is underestimated[3].

Studies suggest that information on workers' health produced within Brazil's Unified Health System (*Sistema Único de Saúde* - SUS) does not reflect actual reality within health services[6]. In 2013, for example, only 28.3% of the country's 5,565 municipalities recorded serious occupational accidents in the Notifiable Illness or Injury Information System (*Sistema de Informação de Agravos de Notificação* - SINAN). This widespread underreporting of occupational accidents hampers adequate analysis of the factors that contribute to their occurrence, which in turn jeopardizes the overall reach and effectiveness of Worker's Surveillance[7].

An array of factors contribute to underreporting of occupational accidents within the SUS, including the following: fragmentation of information systems, principally those encompassing workers' health; lack of familiarity among health professionals with notification instruments and procedures; the fact that a large contingent of health professionals are employed on short-term contracts, thus leading to high levels of staff turnover within health services; and the lack of systematic continuing education and training[8-10].

A number of strategies have been developed within the field of occupational health to address underreporting challenges[6]. The creation of the National Comprehensive Occupational Health Care Network (*Rede Nacional de Atenção Integral à Saúde do Trabalhador* - RENAST) is regarded as an important initiative capable of providing support for the organization of health service information flows[11]. In addition, compulsory notification of occupational accidents by health services, particularly the sentinel workers' health centers that make up the Sentinel Occupational Health Services Network (*Rede de Serviços Sentinela em Saúde do Trabalhador*), strengthens the role of Epidemiological Surveillance as an important tool for organizing health actions[12].

Structured around medium and high complexity services delivered by the SUS, sentinel workers' health centers provide backline technical support, acting as the "rearguard" of the health care network. They play a central role in ensuring the quality of information by identifying, investigating, and notifying occupational accidents and diseases. Furthermore, they should enable health promotion, disease prevention, Health Surveillance, and occupational health activities[1].

The production of quality information by sentinel workers' health centers is essential for ensuring the development of effective occupational accident and disease prevention strategies and shaping and enhancing Worker's Surveillance programs. Despite the importance of this issue, there has been little discussion on the factors that contribute to the notification of occupational accidents by sentinel workers' health centers[5]. The present article therefore examines the factors associated with the notification of occupational accidents by multidisciplinary teams in sentinel workers' health centers in the municipality of Fortaleza in the northeast of Brazil.

Material and methods

Type and place of study

An analytical cross-sectional study of sentinel workers' health centers for serious and fatal occupational accidents in the municipality of Fortaleza in the State of Ceará was conducted between February 2013 and June 2014. At the time, the municipality of Fortaleza had seven secondary and tertiary care sentinel workers' health centers, each accredited by the Bipartite Interagency Committee (*Comissão Intergestores Bipartite* - CIB) to report serious and fatal occupational accidents. The sentinel workers' health centers

had to satisfy the following selection criterion: outpatient and emergency services delivered by a 24-hour medical team that had received training on the notification of occupational accidents provided by the Center of Reference for Workers' Health (*Centro de Referência em Saúde do Trabalhador* - CEREST) in Fortaleza during the 12 months prior to the study. The following five sentinel workers' health centers met the above criterion: Instituto Doutor José Frota, Hospital Geral de Fortaleza, Hospital Distrital Evandro Aires de Moura, Hospital Distrital Maria José Barroso de Oliveira, and Hospital Distrital Governador Gonzaga Mota.

Study population

The study population was made up of degree-holding professionals working directly with the clinical management of patients who had suffered accidents and/or the notification of cases of occupational accidents.

Instruments and variables

Data was collected using a semi-structured questionnaire. Independent variables were categorized into four groups: socioeconomic characteristics (sex, profession, and age); professional background (length of time since graduation, years of relevant professional experience); knowledge regarding legislation governing the notification of occupational accidents – the Basic Health Law (*Lei Orgânica da Saúde*), Social Security Law (*Lei da Seguridade Social*), and the SINAN notification form; and occupational accident training (completion of relevant training, discussion of the theme of occupational accidents in the workplace).

Interviews were conducted by 12 field researchers supervised by four tutors (one tutor for every four researchers). Each member of the research group undertook a 40-hour training course given by a team of supervisors, which aimed to familiarize researchers with the data collection instrument and ensure that all interviews were conducted in a standardized manner. The interviews were conducted at the participants' place of work during different shifts and days of the week, and with different teams.

Data analysis

The data from the questionnaires was entered using the statistical software Epi Info® version 5.4.1. Double entry was performed to check for internal consistency. Data analysis was performed using Stata® version 11.1. First, the absolute and relative frequencies of the variables of interest were calculated. This was followed by bivariate analysis conducted using Pearson's chi-square test and/or Fisher's exact test to provide a crude measure of association between the independent variables and the outcome (notification of occupational accidents). Prevalence ratios (PRs) and 95% confidence intervals (CI) were calculated.

Subsequently, a stratified analysis of the variables of interest (sex, years of relevant professional experience, and workers' health training) was performed using the Mantel-Haenszel method to calculate adjusted PRs. Finally, multivariate Poisson regression was conducted including all variables that obtained p-values of < 0.20 in the crude and stratified analyses, adopting the stepwise forward method. Variables that obtained a p-value of less than or equal to the chosen significance level (0.05) were maintained in the final model.

Ethical aspects

The project was approved by the Research Ethics Committee. All procedures were undertaken in accordance with the requirements of Resolution 196/96, which regulates research involving human participants. All interviewees read and signed an informed consent form.

Results

A total of 354 interviews were conducted. A little over 20% of the questionnaires were excluded due to inconsistencies or because they were incomplete, resulting in a total sample of 207 questionnaires. Around two-thirds of the interviewees were female and 59% were aged between 31 and 50 years. The most common occupations were nurses (48%) and doctors (21%). Half of the interviewees had completed their degree over 15 years ago, while 52% had at least 15 years of relevant professional experience (Table 1).

Over half of the interviewees stated that they had never received training on the notification of occupational accidents. With respect to legislation governing the notification of occupational accidents, 83% of interviewees stated that they were not aware of specific policy directives addressing the topic. A little over two-thirds of participants were aware that occupational accidents were reportable (Table 1).

Table 1. Socioeconomic profile, training, and knowledge of health professionals regarding occupational accidents.

Individual characteristics	N	%
Sex		
Female	161	78
Male	46	22
Occupation		
Nurse	99	48
Doctor	43	21
Social worker	23	11
Physiotherapist/OT	17	8
Psychologist	10	5
Pharmacist	15	7
Age group		
20 |--| 30	32	15
31 |--| 40	61	29
41 |--| 50	63	30
≥ 51 years	51	25
Length of time since graduation		
0 |--| 5 years	57	27
06 |--| 15 years	47	23
≥ 16 years	103	50
Years of relevant professional experience		
0 |--| 5 years	59	28
06 |--| 14 years	40	20
≥ 15 years	108	52
Completion of training courses on notification of occupational accidents		
Never	116	56
One	47	23
Two	15	7
At least three	29	14
Knowledge of legislation governing notification of occupational accidents		
Yes	108	52
No	99	48
Knowledge of the Basic Health Law		
Yes	102	49
No	105	51
Knowledge of the Social Security Law		
Yes	55	27
No	152	73
Knowledge of the Social Insurance Law		
Yes	48	23
No	159	77
Knowledge of policy directives relevant to occupational accidents		
Yes	35	17
No	172	83
Knowledge of the SINAN occupational accident notification form		
Yes	110	53
No	97	47
Aware that occupational accidents are reportable		
Yes	172	83
No	35	17
Theme of occupational accidents is discussed in the workplace		
Yes	103	50
No	104	50

No association was found between notification of occupational accidents and sex, length of time since graduation, and age ($p > 0.05$). Physiotherapists and occupational therapists ($p < 0.001$), psychologists ($p < 0.05$), and pharmacists ($p < 0.05$) were less likely to report occupational accidents than nurses. Furthermore, professionals with between six and 14 years of relevant work experience were almost two times more likely (PR = 1.90; 95% CI = 1.09-3.31) to report occupational accidents (Table 2).

Professionals who had undertaken at least three training courses on the theme of occupational accidents were almost seven times more likely to report accidents (PR = 6.60; 95% CI = 2.67-16.34). Those who had knowledge of policy directives and legislation concerning occupational accidents were also more likely to report accidents ($p < 0.001$). Other factors that contributed towards notification of occupational accidents included: being familiar with the SINAN notification form ($p < 0.001$); having knowledge of the legislation governing the notification of occupational accidents ($p < 0.001$); knowing that occupational accidents are reportable events ($p < 0.001$); and discussing the theme of occupational accidents in the workplace ($p < 0.001$) (Table 3).

Table 4 shows the proportion of notifications of occupational accidents by sex, years of relevant professional experience, and training. Nursing professionals with at least 15 years of relevant professional experience (PR = 2.08; 95% CI = 1.27 – 3.42) and who had undertaken training on notification of occupational accidents (PR = 1.87; 95% CI = 1.14 – 3.06) were more likely to report incidents. Furthermore, female nurses were almost two times more likely (PR = 1.89; 95% CI = 1.26 – 2.84) to report accidents than women in other occupations (Table 4).

Table 5 shows the results of multivariate Poisson regression. Nurses (PR = 1.40; 95% CI= 1.01 – 1.95) who had completed training on the notification of occupational accidents (PR = 1.47; 95% CI = 1.04 – 2.08) and confirmed that they had read up on the subject (PR = 1.41; 95% CI = 1.01 – 2.00) were more likely to report events (Table 5).

Table 2. Association between socioeconomic factors and notification of occupational accidents.

Variable	Notification				PR	(CI 95%)	P - value
	Yes	%	No	%			
Female	73	45	88	55	1.03	(0.89-1.19)	0.62
Male	19	41	27	59	1		
Occupation							
Nurse	56	57	43	43	1		
Doctor	18	42	25	58	0.66	(0.39-1.10)	0.10
Social worker	10	43	13	57	0.65	(0.31-1.37)	0.25
Psychologist	2	20	8	80	0.21	(0.04-0.98)	< 0.05*
Pharmacist	4	27	11	73	0.32	(0.11-0.96)	< 0.05
Physiotherapist/TO	2	12	15	88	0.13	(0.03-0.55)	< 0.001
Age group							
20 |--| 30	15	47	17	53	1.15	(0.67-1.98)	0.61
31 |--| 40	30	49	31	51	1.15	(0.82-1.62)	0.39
41 |--| 50	26	41	37	59	1	(0.71-1.40)	0.99
≥ 51 years	21	41	30	59	1		
Length of time since graduation							
0 |--| 5 years	23	40	34	60	0.91	(0.59-1.40)	0.68
06 |--| 15 years	24	51	23	49	1.22	(0.76-1.96)	0.40
≥ 16 years	45	44	58	56	1		
Years of relevant professional experience							
0 |--| 5 years	23	39	36	61	0.95	(0.62-1.45)	0.82
06 |--| 14 years	25	62.5	15	37.5	1.90	(1.09-3.31)	< 0.001
≥ 15 years	44	41	64	59	1		

* Fisher's exact test.

Table 3. Association according to knowledge of health professionals regarding laws, policies, and policy directives that govern the notification of occupational accidents.

Variable	Notification				Crude PR	(CI 95%)	P - value
	Yes	%	No	%			
Completion of training courses							
Never	37	32	79	68	1		
One	24	51	23	49	1.74	(1.08-2.80)	< 0.05
Two	7	47	8	53	1.73	(0.67-4.46)	0.25
At least three	24	83	5	17	6.60	(2.67-16.34)	< 0.001
Reads up on the theme of occupational accidents							
Yes	58	57	43	43	1.68	(1.26-2.23)	< 0.001
No	34	32	72	68	1		
Knowledge of governing legislation							
Yes	65	60	43	40	1.88	(1.44-2.47)	< 0.001
No	27	27	72	72	1		
Knowledge of the Basic Health Law							
Yes	47	46	55	54	1.06	(0.81-1.40)	0.64
No	45	43	60	57	1		
Knowledge of the Social Security Law							
Yes	28	51	27	49	1.29	(0.82-2.03)	0.26
No	64	42	88	58	1		
Knowledge of the Social Insurance Law							
Yes	27	56	21	44	1.60	(0.97-2.64)	0.06
No	65	41	94	59	1		
Knowledge of relevant policy directives							
Yes	21	60	14	40	1.87	(1.01-3.47)	0.04
No	71	41	101	59	1		
Knowledge of the SINAN notification form							
Yes	68	62	42	38	2.02	(1.54-2.65)	< 0.001
No	24	25	73	75	1		
Aware that occupational accidents are reportable							
Yes	85	49.0	87	51	1.22	(1.08-1.37)	< 0.001
No	7	20	28	80	1		
Theme of occupational accidents is discussed in the workplace							
Yes	56	54.0	47	46	1.48	(1.13-1.95)	< 0.001
No	36	35.0	68	65	1		

Discussion

The fact that interviewees had undertaken training on the theme of occupational accidents increased the likelihood of notification of events by almost 50%. Other factors associated with increased notification of occupational accidents included: having red up about the theme of occupational accidents; having knowledge of legislation governing the notification of occupational accidents; being aware that occupational accidents are reportable; and discussing the theme of occupational accidents in the workplace.

Since 2012, the multiannual plan of the State of Ceará Health Department has envisaged the provision of training on comprehensive care and Worker's Surveillance for health professionals and managers working in sentinel workers' health centers[13]. Furthermore, the plan defines priority action areas for monitoring the recording of reportable occupational diseases and injuries in SUS information systems[13].

Our findings suggest that the above measures are yet to be fully implemented. The results of this study show that training programs have had limited scope and reach within the sentinel work-

Table 4. Proportion of notifications of occupational accidents by occupation stratified by sex, years of relevant professional experience. and completion of training courses.

Variables	Notification of occupational accidents						
	Yes				No		
	N	(%)	N	(%)	PR	(CI 95%)	P - value
Sex							
Male							
Other professionals	3	60	2	40		1	0.373
Nurses	16	39	25	61	1.54	(0.68 – 3.46)	
Female							
Other professionals	53	56.4	41	43.6		1	<
Nurses	20	29.9	47	70.1	1.89	(1.26 – 2.84)	0.001
Years of relevant professional experience							
Up to 14 years							
Other professionals	27	57.4	20	42.5		1	0.091
Nurses	21	40.4	31	59.6	1.42	(0.94 – 2.15)	
At least 15 years							
Other professionals	29	55.8	23	44.2		1	0.002
Nurses	15	26.8	41	73.2	2.08	(1.27 – 3.42)	
Completion of training courses							
No							
Other professionals	12	32.4	25	68.4		1	0.932
Nurses	25	31.6	54	68.7	1.02	(0.58 – 1.81)	
Yes							
Other professionals	44	80	18	20		1	0.002
Nurses	11	37.9	18	62	1.87	(1.14 – 3.06)	

Table 5. Multivariate Poisson regression with variables associated with notification of occupational accidents.

Variables	PR	(CI 95%)	P - value
Occupation			
Other professionals	1		0.043
Nurses	1.40	(1.01 – 1.95)	
Years of relevant professional experience			
>16 years	1		
6 |--| 15 years	0.67	(0.46 - 0.99)	0.045
0 |--| 5 years	0.65	(0.48 – 0.89)	0.007
Completion of training courses			
No	1		
Yes	1.47	(1.04-2.08)	0.028
Reads up on the theme of occupational accidents			
No	1		
Yes	1.41	(1.01-2)	0.048

ers' health centers covered by this study, with over half of the interviewees (56%) having never received training on the theme of occupational accidents. The majority of professionals felt unqualified to correctly identify and report occupational diseases and accidents and that the train-

ing strategy adopted by the state government was not capable of meeting the demand for information that has accumulated since graduation.

The limited reach of training programs is reflected in the low quality of the information recorded in information systems. Studies have shown inconsistencies in the recording of occupational diseases and accidents in Brazil. The most widely used source of data, the social security information system, is incomplete since it encompasses only insured workers, who account for only one-third of the employed component of the country's economically active population. It is also important to note the lack of information provided in notification forms, incomplete and uncompleted records, and incorrect completion of important form fields such as patient occupation. All these factors lead to a somewhat distorted picture of the overall situation and hamper the effective implementation of Worker's Surveillance actions in states and municipalities[5,14-17].

A little over one-third of the interviewees confirmed that they had reported occupational accidents. However, 25% of the professionals were unaware of the existence of the SINAN notification form, which is the instrument used for notifying occupational accidents within the SUS. This lack of knowledge is particularly surprising given that these professionals work in sentinel workers' health centers. These findings confirm that state and regional CERESTs need to take a more systematic and consistent approach in order to provide effective technical support and fulfill their role as hubs of knowledge dissemination.

In this respect, it is up to the RENAST and CERESTs to ensure that they effectively fulfill their respective roles in the provision of backline technical support for health care services, particularly sentinel workers' health centers. Measures to ensure improved notification in sentinel workers' health centers should include capacity building activities directed at professional staff. The promotion of more wide-ranging and effective continuing training of health care professionals in the field of workers' health is essential. Such actions raise awareness of the importance of correctly recording occupational accidents, thus aiding in the investigation of events and enhancement of Worker's Surveillance actions[18].

Another important aspect that directly affects the notification of occupational accidents is that over 83% of the interviewees stated that they are unaware of the policy directive that regulates the notification of occupational accidents as reportable incidents. These findings corroborate the results of other studies that show that professionals have limited knowledge of policies that govern the notification of occupational accidents[16,17,19,20].

Our findings highlight the need to bring professionals up to date regarding relevant legislation. In this respect, training programs should be implemented to fill knowledge gaps. The Ministry of Health plays a vital role in the production and dissemination of technical knowledge. A recent national-level initiative was the publication of the "differentiated complexity protocol" (*Protocolo de Complexidade Diferenciada*) addressing the notification of fatal and serious occupational accidents and those involving children and adolescents[10].

Professionals with a greater length of time since graduation had less knowledge of occupational accidents. This may be due to the limited depth of coverage of this subject by undergraduate courses[21,22]. Workers' health is a complex area that requires deep insight to gain an accurate understanding of the relationship between work and health and disease. The National Workers' Safety and Health Policy (*Política Nacional de Segurança e Saúde do Trabalhador*) points to the need to restructure occupational health and safety training within undergraduate courses[23].

Professionals with a greater number of years of relevant work experience were more likely to report occupational accidents. This suggests that everyday working practices in sentinel workers' health centers contribute to staff awareness and help professionals to keep up-to-date on their technical knowledge[24]. This is corroborated by the fact that 42% of interviewees stated that their primary source of knowledge was the workplace.

Although daily working practices and work experience can help to improve technical knowledge and skills, they do not substitute the need for professional training. In this respect, it is necessary to invest in human resource training and development that ensures access to up-to-date quality information on workers' health[25-27].

The notification of occupational accidents plays a vital role in ensuring effective Worker's Surveillance and enforcement of laws and regulations concerning occupational safety and health in the working environment. In this respect, sentinel workers' health centers play a strategic role in ensuring the provision of quality information that can give an overview of the epidemiological situation across different regions and thus orient health service activities.

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Conclusion

Continuing education and training raise awareness among health professionals and helps improve the quality of notification of occupational accidents. Nevertheless, less than half of interviewees had undertaken at least three training/refresher courses, pointing to limited training provision for workers in the public health network.

It is therefore important to invest greater resources to ensure the effective implementation of continuing education and training programs directed at professionals working in sentinel workers' health centers. In this respect, the CEREST s must make a concerted effort to fulfill their role as providers of technical support and hubs of knowledge dissemination by promoting systematic training across sentinel workers' health centers to update knowledge and skills and build the capacity of health care professionals for reporting occupational accidents and diseases.

Collaborations

MJM Ferreira participated in the design, design, analysis, interpretation of the results and final revision. RKS Lima contributed in the delineation, analysis and interpretation of the results. LPG Cavalvanti worked on the design, interpretation of results and final review. AMC Silva participated in the data analysis, critical review and approval of the final version. JG Bezerra Filho contributed in the critical review and approval of the final version.

References

1. Medina FS, Maia MZB. A subnotificação de LER/DORT sob a ótica de profissionais de saúde de Palmas, Tocantins. *Revista Brasileira de Saúde ocupacional* 2016; 41:e8
2. International Labour Office (ILO). *Word employment and social outlook: Trends 2016*. Geneva: ILO; 2016.
3. Cavalcante CAA, Cossi MS, Costa RRO, Medeiros SM, Menezes RMP. Análise crítica dos acidentes de trabalho no Brasil. *Rev. De Atenção à Saúde* 2015; 13(44):100-109.
4. Brasil. Ministério do Trabalho e Previdência Social (MTPS). Empresa de Tecnologia e Informação da Previdência Social (DATAPREV). *Anuário Estatístico da Previdência Social*. Brasília: MTPS, DATAPREV; 2014.
5. Galdino S, Santana VS, Ferrite S. Os Centros de referência em Saúde do Trabalhador e a notificação de acidentes de trabalho no Brasil. *Cad Saude Publica* 2012; 28(1):145-159.
6. Lacaz FAC, Santos APL. Saúde do trabalhador hoje revisitando atores sociais. *Rev Med Minas Gerais* 2010; 20(2 Supl. 2):S5-S12.
7. Bastos-Ramos TP, Santana VS, Ferrite S. Estratégia Saúde da família e notificações de acidentes de trabalho, Brasil, 2007-2011. *Epidemiologia. Serv. Saúde* 2015; 24(4):641-650.
8. Ferreira MJM, Viana Júnior MM, Pontes AGV, Rigotto RM, Gadelha D. Gestão e uso dos recursos hídricos e a expansão do agronegócio: água para quê e para quem? *Cien Saude Colet* 2016; 21(3):743-752.
9. Almeida PCA, Barbosa-Branco A. Acidentes de trabalho no Brasil: prevalência, duração e despesa previdenciária dos auxílios-doença. *Rev. Bras. Saúde ocup* 2011; 36(124):195-207.
10. Brasil. Ministério da saúde (MS). *Notificação de acidentes de trabalho fatais, graves e com crianças e adolescentes*. Brasília: MS; 2006.
11. Brasil. Portaria GM nº 1679, de 19 de setembro de 2002. Dispõe sobre a estruturação da rede nacional de atenção integral à saúde do trabalhador no SUS e dá outras providências. *Diário Oficial da União* 2002; 20 set.
12. Brasil. *Política Nacional de Segurança e Saúde do Trabalhador*. Brasília: Ministérios do Trabalho, da Previdência, da Saúde; 2004.
13. Ceará. Lei nº 15.109, de 02 de janeiro de 2012. Dispõe sobre o Plano Plurianual para o período 2012-2015, e dá outras providências. *Diário Oficial do Ceará* 2012; 3 jan.
14. Cortez EA, Jasmim JS, Silva LM, Queluci GC. Análise da mortalidade por acidentes de trabalho no Brasil: revisão integrativa. *Rev enferm UEPE* 2017; 11(Supl. 1):429-437.
15. DATASUS. [acessado 2016 dez 29]. Disponível em: http://tabnet.datasus.gov.br/cgi/deftohtm.exe?idb2012/d06.def
16. Dias EC, Hoefel MG. O desafio de implementar as ações de saúde do trabalhador no SUS: a estratégia da RENAST. *Cien Saude Colet* 2005; 10(4):817-828.
17. Lima RJV, Tourinho BCMS, Costa DS, Tapety FI, Parente DM, Almeida CAPL. Conhecimentos e condutas de médicos e profissionais de enfermagem frente aos acidentes de trabalho. *Rev Enferm UFPI* 2015; 4(1):89-96.
18. Rodrigues FMS, Nogueira-Júnior C, Amral SEM, Fernandes ACP. Notificação de acidentes de trabalho com perfurocortantes: Experiências de uma equipe de enfermagem. *Rev. Enf-UFJF* 2015; 1(2):145-152.
19. Gonçalves JA. *Acidente de trabalho entre a equipe assistencial multiprofissional: uma avaliação da subnotificação* [dissertação]. Belo Horizonte: UFMG; 2007.
20. Leopoldino JM, Santos MA. Percepção dos profissionais de saúde sobre a notificação dos transtornos mentais e do comportamento relacionado ao trabalho. *Cadernos Brasileiros de Saúde Mental* 2013; 5(11):44-66,
21. Ribeiro IL, Júnior AM. Graduação em saúde, uma reflexão sobre o ensino-aprendizado. *Trab. Educ. Saúde* 2016; 14(1):33-53.
22. Gomes JB, Casagrande LDR. A educação reflexiva na pós-modernidade: uma revisão bibliográfica. *Rev Latino-am Enfermagem* 2002; 10(5):696-703.
23. Brasil. Ministério da Saúde (MS). *Boletim epidemiológico – Acidentes de trabalho fatais no Brasil, 2000-2010*. Brasília: MS; 2011.
24. Fernandes MC, Souza NVDO, Mafra IF, D'Oliveira CAFB, Pires AS, Costa CCP. The content of occupational health and teaching methods in nursing education. *Escola Anna Nery* 2016; 20(3):e20160074
25. Dias MDA. Compreendes o trabalho na atenção primária à saúde para desenvolver em saúde do trabalhador/; o caso de um município de médio porte. *Rev Bras Saúde Ocup* 2013; 38(127):69-80.
26. Keppler ILS, Yamamoto OH. Psicólogos nos centros de referência em saúde do trabalhador. *Revista Psicologia: Organizações e Trabalho* 2016; 16(1):48-60.
27. Silva A, Ferraz L, Rodrigues-Júnior AA. Ações em Saúde do Trabalhador desenvolvidas na atenção primária no município de Chapecó, Santa Catarina. *Rev Bras Saúde Ocup* 2016; 41:e16.

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