

Profile of occupational accidents in a hospital in Manaus, state of Amazonas

Perfil dos acidentes de trabalho em um hospital na cidade de Manaus, estado do Amazonas

Jucelia Marques Ipiranga¹ , Arimatéia Portela de Azevedo², Jani Kenta Iwata³

ABSTRACT | Introduction: Occupational accidents are caused by predisposing factors, which can be handled by preventive actions. **Objectives:** To analyze factors related to work accidents involving professionals in a referral hospital for infectious diseases in the state of Amazonas, Brazil. **Methods:** This is an observational, cross-sectional, quantitative study. Data were collected between January 2018 and June 2020 from reports and notification sheets of the Specialized Service in Occupational Health and Safety and Epidemiological Surveillance Group. As for ethical aspects, we followed Resolution No. 466 (2012), which regulates studies with human beings. The study was submitted to and approved by the Research Ethics Committee under protocol No. 3.657.218. **Results:** Nursing professionals (64.52%), women (77.41%), professionals aged between 42 and 52 years (35.49%), who worked in the public sector (87.10%), and were married (58.06%) were the most affected by accidents. Accidents were mainly work-related (96.77%), represented biological hazards (61.29%), and happened with sharps (51.52%) due to cutaneous injury (48.39%); hands (48.39%) were the main affected site, due to unsafe work conditions (45.16%) during patient care (41.94%). The most frequently used preventive measure was the toolbox talk (41.94%). **Conclusions:** This study provides an outline of occurrences, from accidents to the subsequent procedures, and despite being comparable with other studies, provides relevant information for prevention and presents data from a region with few reports of this kind.

Keywords | occupational accidents; occupational hazards; prevention; nursing.

RESUMO | Introdução: Acidentes de trabalho têm como causa os fatores predisponentes, os quais podem ser tratados através de ações preventivas. **Objetivos:** Analisar os fatores relacionados aos acidentes de trabalho envolvendo profissionais de um hospital referência em infectologia no estado do Amazonas, Brasil. **Métodos:** Estudo observacional, transversal e quantitativo. Os dados foram coletados de janeiro de 2018 a junho de 2020 através de informações contidas em relatórios e fichas de notificação do Serviço Especializado em Segurança e Medicina do Trabalho e do Núcleo de Vigilância Epidemiológica. Quanto aos aspectos éticos, considerou-se a Resolução nº 466 de 2012, que norteia os estudos com seres humanos. O artigo foi submetido e aprovado pelo Comitê de Ética em Pesquisa sob o protocolo 3.657.218. **Resultados:** Profissionais de enfermagem (64,52%), do sexo feminino (77,41%), com idade de 42 a 51 anos (35,49%), servidores públicos (87,10%) e casados (58,06%) foram os mais atingidos por acidentes. Os acidentes sofridos foram principalmente típicos (96,77%), de risco biológico (61,29%) e perfurocortantes (51,62%) por lesão percutânea (48,39%), sendo as mãos (48,39%) o principal membro afetado, devido a condições inseguras (45,16%) durante a assistência ao paciente (41,94%). A medida preventiva mais utilizada foi o diálogo de segurança (41,94%). **Conclusões:** Esta pesquisa oferece um delineamento das ocorrências, desde o acidente até as tratativas, e, apesar de assemelhar-se a outros estudos, possui informações relevantes no campo da prevenção, além de abordar dados de uma região que possui poucos estudos de igual modalidade.

Palavras-chave | acidentes de trabalho; riscos ocupacionais; prevenção; enfermagem.

¹ Enfermagem, Universidade Nilton Lins, Manaus, AM, Brazil.

² Fundação de Medicina Tropical Dr. Heitor Vieira Dourado, Universidade Nilton Lins, Manaus, AM, Brazil.

³ Núcleo de Projetos Estratégicos/Secretaria de Estado de Saúde, Universidade Nilton Lins, Manaus, AM, Brazil.

Funding: None

Conflicts of interest: None

How to cite: Ipiranga JM, de Azevedo AP, Iwata JK. Profile of occupational accidents in a hospital in Manaus, state of Amazonas. Rev Bras Med Trab. 2021;19(2):201-208. <http://dx.doi.org/10.47626/1679-4435-2020-633>

INTRODUCTION

Occupational accidents have many consequences for the health of workers, increase social security costs and indirect expenditures involving the substitution and relocation of professionals on leave, and impact patient care. This type of accident occurs during the performance of work activities for a company, resulting in physical injury, functional disorders, death, or temporary or permanent disability. Occupational accidents are classified into commuting accidents, work-related accidents, and occupational diseases, and can be avoided through interventions in work environments and processes.¹

According to the Brazilian legislation, the employer should provide assistance to the injured worker.² Regulatory Standard No. 32 (NR-32) addresses safety measures for work in health care facilities but requires complementation by other NRs due to the complex organizational structure (with various hazards) of these environments.³ Moreover, the proper management of these institutions is fundamental for guaranteeing adequate work conditions for health care professionals.⁴

Understanding the characteristics of occupational accidents represents an important management tool for health care institutions, since it optimizes work conditions, reduces occupational hazards, and contributes to planning prevention actions based on accident-generating factors. Corrective measures also contribute to preventing the recurrence of these events.⁵ Unsafe conditions cause accidents due to the unavailability of personal protective equipment (PPE), use of devices without safety features, and inadequate infrastructure; unsafe acts are performed by workers themselves, who theoretically seem to understand the importance of safety measures but do not employ them in practice.⁶

Although PPE is dedicated to protecting workers, part of the accidents occurring in health care environments are due to the lack of PPE use by the employees.⁷ This illustrates the limited understanding of hazards by workers, which highlights the importance of the distribution, registration, guidance, training, and enforcement of PPE, as required by NR-6.⁸

When workers develop critical and preventive thinking in face of the intrinsic hazards of their activities, they favor occupational preventive actions and avoid occupational accidents. This way, they collaborate with the Specialized Service in Occupational Health and Safety (SESMT), alerting the service on new hazards in their work environment.⁹

Employees working in a hospital environment are exposed to different occupational hazards, which should be identified in the hazard map for their prevention. These include physical, ergonomic, mechanic, chemical, and biological hazards. According to their nature and concentration and to the exposure period, hazards could affect workers' health, possibly disrupting the physical, mental, and social well-being of the individuals.¹⁰

Biological hazards, identified in brown, include fungi, bacteria, protozoans, viruses, and prions. Exposure to these agents may occur through respiratory, parenteral, dermal, oral, and ocular routes. The frequency of accidents due to this type of hazard is high, and underreporting is also significant.^{11,12} After an occupational accident with exposure to biological material caused by sharps or contact with the skin or mucosae, the professional should receive adequate care according to the type of occurrence, and the institution is responsible for his or her referral to adequate care. Moreover, the worker should promptly receive prophylactic and treatment measures in order to minimize transmission risks and damage to health.¹³

Chemical agents, represented in red, are substances, products, or compounds that can penetrate the organism in some form: respiratory or dermal routes or through ingestion. Some chemical products, in direct contact, may trigger various problems such as allergies and burns.¹⁴

Mechanical hazards, identified in blue, represent inadequate physical arrangements, lack of maintenance, inadequate tools and PPE, among other factors. However, one should also consider somatic factors such as night shifts, excessive workload, physical and emotional exhaustion, inadequate training, lack of attention, excess confidence, and stress.¹⁵

This study also intends to inform about the consequences and procedures following accidents,

aiming to obtain positive findings towards prevention. Therefore, this study aimed to characterize occupational accidents occurring with professionals of a reference hospital in infectious diseases in the state of Amazonas between January 2018 and June 2020.

METHODS

This is an observational, cross-sectional, quantitative study, performed between January 2018 and June 2020 with employees of Fundação de Medicina Tropical Doutor Heitor Vieira Dourado (FMT/HVD). This institution is a tertiary university hospital that is a referral unit in infectious and parasitic diseases in the state of Amazonas.

Variables in this study were collected from accident notification sheets and reports of the Epidemiological Surveillance Group and SESMT. We considered as eligible for this study the notifications of accidents by professionals of FMT/HVD; data from employees of other institutions or underreported data were not considered. The study presented minimal risks since data were collected in an indirect manner. Data were analyzed using Microsoft Excel 2010, with subsequent statistical analysis and discussion through tables for better presenting variables.

This study complied with ethical requirements for research involving human beings and, for further protecting the participants, all privacy and confidentiality criteria were followed as recommended by National Health Council Resolution No. 466, from 12 December 2012.¹⁶ The study was approved by the Research Ethics Committee of FMT/HVD under opinion No. 3 657 218.

This study approaches a relevant theme for professionals working in hospital environments and presents results on the occurrence, characteristics, resulting actions, and consequences of occupational accidents in order to guide good practices and further research on occupational health. No funding was received; expenses were supported by the authors themselves. There are no conflicts of interest of financial or personal nature or in the form of

relationships with people or organizations that could theoretically influence in the content of the manuscript.

RESULTS

This study included data from 31 workers who suffered accidents at FMT/HVD between January 2018 and June 2020; most accidents (64.52%) happened with the nursing team. The number of accidents varied within the evaluated period and we did not observe recurrences with the same worker.

The absolute and relative distributions of the characteristics of injured professionals are presented on Table 1. We noted that 77.41% of the injured workers were women and most of them were aged between 42 and 51 years (35.49%). Most of the injured professionals were married (58.06%) and worked in the public sector (87.10%). As for the job tenure, most accidents happened with employees who held the same occupation for up to 2 years.

Regarding the characteristics of work accidents (Table 2), most of them were work-related (96.77%). As for hazard classifications, 61.29% of the accidents were caused by biological hazards, mainly through percutaneous (48.39%) hand (48.39%) injuries caused by sharps (51.62%).

Considering the predisposing factors that may have contributed to the accidents (Table 3), unsafe work conditions were the most relevant aspect (45.16%), and accidents happened mainly during patient care (41.94%).

It is known that occupational accidents result in various difficulties to workers, such as the need for sick leaves and adverse reactions of the required medications. Negative repercussions of occupational accidents are described on Table 4.

Considering the corrective and preventive measures presented on Table 5, we observed higher results regarding the guidance or education through the toolbox talk and training (41.94%), aiming to reeducate workers as to the pre-established internal and safety regulations.

DISCUSSION

Most accidents in the studied period involved nursing technicians and nurses. This is in line with a study performed in the state of Ceará, which explained these results with the fact that the nursing team represents most of the professionals within a hospital environment.¹⁷

Most injured workers were female. This is explained by studies based on professional and gender research: The nursing career is predominantly chosen

by women due to historical reasons, since care used to be seen more as a calling than a profession and be performed in the domestic environment at no pay.¹⁸ These data correspond to a historical context of female emancipation that led to conquering the job market, but also to factors such as exhausting working hours and work overload, which cause physical and mental strain, that may result in occupational accidents.^{19,20}

The age group with the highest prevalence (42 to 51 years) of injured professionals was different from

Table 1. Occupational accidents: profile of professionals of Hospital de Medicina Tropical, Manaus, state of Amazonas, January 2018 to June 2020

Variables	Sex				Total	
	Female		Male			
	n	%	n	%	n	%
Occupation						
Nursing technician	15	48.39	1	3.23	16	51.62
Nurse	2	6.45	2	6.45	4	12.90
Pharmacist-biochemist	3	9.68	1	3.23	4	12.90
Cleaning worker	3	9.68	0	0.00	3	9.68
Clinical analyst intern	1	3.23	1	3.23	2	6.45
Administrative assistant	0	0.00	2	6.45	2	6.45
Age group (years)						
21 to 31	4	12.90	3	9.68	7	22.58
32 to 41	5	16.13	2	6.45	7	22.58
42 to 51	9	29.03	2	6.45	11	35.49
52 to 61	6	19.35	0	0.00	6	19.35
Marital status						
Married	14	45.16	4	12.90	18	58.06
Single	9	29.03	3	9.68	12	38.71
Widowed	1	3.23	0	0.00	1	3.23
Employment relationship						
Public sector	22	70.97	5	16.13	27	87.10
Private sector	1	3.23	1	3.23	2	6.45
Others	1	3.23	1	3.23	2	6.45
Job tenure (years)						
2 or less	12	38.71	6	19.35	18	58.06
3 to 6	1	3.23	0	0.00	1	3.23
7 to 27	12	38.71	0	0.00	12	38.71

that reported by other studies, which indicated younger ages (30 to 39 years or 20 to 29 years); the reasons for the accidents also differ.^{21,22}

Most of the analyzed workers worked for the public sector, which entails 2 problems: the fact that the institution is a public entity and the underreporting associated with third party employees who fear losing their jobs.^{11,22} Regarding job tenure, our data corroborate

other studies reporting that individuals with less than 5 years' experience and those with several years (which associates with excess confidence) are more prone to the risk of suffering accidents.¹²

Regarding accident types and the principal hazard, our findings are in agreement with most studies found in the literature, especially considering protection against bodily fluids. Although many workers reported

Table 2. Characteristics of occupational accidents occurring between January 2018 and June 2020 at Hospital de Medicina Tropical, Manaus, state of Amazonas

Variables	Sex				Total	
	Female		Male			
	n	%	n	%	n	%
Type of accident						
Work-related	23	74.19	7	22.58	30	96.77
Commuting	1	3.23	0	0.00	1	3.23
Type of hazard						
Biological	16	51.62	3	9.68	19	61.29
Mechanical	7	22.58	2	6.45	9	29.03
Chemical	1	3.23	1	3.23	2	6.45
Others	1	3.23	0	0.00	1	3.23
Causative agent						
Sharps	13	41.94	3	9.68	16	51.62
Bodily fluid or secretion	4	12.90	1	3.23	5	16.13
Inadequate or defective equipment	4	12.90	0	0.00	4	12.90
Infrastructure	2	6.45	1	3.23	3	9.68
Chemical	1	3.23	1	3.23	2	6.45
Traffic collision	1	3.23	0	0.00	1	3.23
Injured body part						
Hands	12	38.71	3	9.68	15	48.39
Lower limbs	5	16.13	0	0.00	6	19.35
Multiple body parts	3	9.68	2	6.45	5	16.13
Eyes	7	22.58	0	0.00	4	12.90
Upper limbs	0	0.00	1	3.23	1	3.23
Type of injury						
Percutaneous injury	12	38.71	3	9.68	15	48.39
Musculoskeletal injury	7	22.58	1	3.23	8	25.80
Mucosal contact with blood or secretions	3	9.68	2	6.45	6	19.35
Mucosal contact with corrosive chemical	1	3.23	0	0.00	1	3.23
Skin contact with corrosive chemical	0	0.00	1	3.23	1	3.23

Table 3. Circumstances of occupational accidents occurring between January 2018 and June 2020 at Hospital de Medicina Tropical, Manaus, state of Amazonas

Variables	Sex				Total	
	Female		Male			
	n	%	n	%	n	%
Nonconformities						
Unsafe work conditions	11	35.49	3	9.68	14	45.16
Lack of PPE use	6	19.35	2	6.45	8	25.80
Removal of sharps safety features	5	16.13	1	3.23	6	19.35
Inadequate work procedure	1	3.23	1	3.23	2	6.45
Other risk situations	1	3.23	0	0.00	1	3.23
Activity involving nonconformities						
Patient care	11	35.49	2	6.45	13	41.94
Laboratory procedure	4	12.90	3	9.68	7	22.58
Movement between wards	4	12.90	1	3.23	5	16.13
Cleaning of laboratory material	2	6.45	0	0.00	2	6.45
Waste management	2	6.45	0	0.00	2	6.45
Others	1	3.23	1	3.23	2	6.45

PPE = personal protective equipment.

Table 4. Negative repercussions of occupational accidents occurring between January 2018 and June 2020 among professionals of Hospital de Medicina Tropical, Manaus, state of Amazonas

Variables	Sex				Total	
	Female		Male			
	n	%	n	%	n	%
Length of sick leave						
1 week or less	4	12.90	1	3.23	5	16.13
6 months or less	3	9.68	0	0.00	3	9.68
2 years or less	1	3.23	0	0.00	1	3.23
No leave	16	51.61	6	19.35	22	70.96
Other consequences						
Concern due to the source-patient's pathology	4	12.90	1	3.23	5	16.13
Adverse reactions to antiretroviral therapy	7	22.58	3	9.68	10	32.26
Other situations	11	35.48	5	16.13	16	51.61

Table 5. Corrective and preventive measures against occupational accidents occurring between January 2018 and June 2020 at Hospital de Medicina Tropical, Manaus, State of Amazonas

Variables	Sex				Total	
	Female		Male			
	n	%	n	%	n	%
Toolbox talk and training	10	32.26	3	9.68	13	41.94
Availability of hazard-appropriate PPE and CPE	6	19.35	2	6.45	8	25.80
Development or updating of internal procedures	3	9.68	1	3.23	4	12.90
Corrective maintenance	3	9.68	0	0.00	3	9.68
Substitution of inadequate hospital supplies	1	3.23	1	3.23	2	6.45
Others	1	3.23	0	0.00	1	3.23

CPE = collective protection equipment; PPE = personal protective equipment.

difficulties in using face protection, which leaves them more susceptible to accidents, most of the occurrences happened during the use of sharps and through percutaneous injuries; hands were the most affected site.^{23,24}

Occupational accidents occur due to various causative factors, and our findings corroborate other studies that indicate unsafe conditions, lack of PPE, and removal of safety features during patient care or laboratory procedures as main causes. Moreover, the accident could be a result of a combination of factors.²⁵⁻²⁷

Throughout the study, we did not observe a significant reduction in occupational accidents, this denoting the existence of nonconformity. Similar study, reported, about that the ideal rate of accident statistics for a company, is when it is possible to reach the zero number of occurrences of accidents.²⁸

As for the treatment of the injured professional, other studies corroborate our findings that professionals need medical assistance, examinations, and treatment, which in turn could have negative side effects.^{21,29}

We did not find studies on corrective and preventive measures for establishing comparisons.³⁰

CONCLUSIONS

With this study, we were able to understand the impacts of hazards that had not yet been identified or controlled by the analyzed institution. Our findings are of great importance to the comprehension of hazards and preventive measures of occupational accidents. However, prevention is only possible with a joint effort where the worker comprehends its importance. SESMT provides guidance on adequate measures, while the institution is responsible for the guided actions. Although our results are similar to those of other studies, this report particularly approaches data that refer not only to the exposure, but also to the period after the accident. In addition, it comprehended a public hospital in the state of Amazonas, which is a region with few studies of this kind; this could strengthen actions on prevention.

REFERENCES

1. Carriel TC, Cardoso AL. Riscos de contaminação por acidentes de trabalho com materiais perfuro-cortantes na área da saúde. *Rev Uninga*. 2017;54(1):91-101.
2. Brasil, Congresso Nacional. Lei nº 8.213, de 24 de julho de 1991. Brasília: Diário Oficial da União; 1991 [citado em 04 abr. 2021]. Disponível em: http://www.planalto.gov.br/ccivil_03/leis/l8213compilado.htm
3. Brasil. Ministério do Trabalho e Emprego. Portaria n. 485, de 11 de novembro de 2005. Norma regulamentadora n. 32 Segurança e saúde no trabalho em estabelecimentos de saúde. Diário Oficial da República Federativa do Brasil, Brasília (DF). Disponível em: <https://www.gov.br/trabalho/pt-br/inspecao/seguranca-e-saude-no-trabalho/normas-regulamentadoras/nr-32.pdf>.
4. Clock D, Batiz EC. Diagnóstico da implantação e implementação da Norma Regulamentadora 32 nos estabelecimentos de saúde: um estudo de caso em um hospital público de Joinville, SC, Brasil. *Rev Ação Erg*. 2017;11(1):95-117.
5. Bordin V, Alves DCI, Souza RF, Fernandes LM, Matos FGOA, Feldhaus C. Caracterização dos acidentes com material biológico entre profissionais de saúde de 2013 a 2017. *Cienc Cuid Saude*. 2019;18(2):e46668.
6. Santos HEC, Marziale MHP, Trovó MEM. Consequências individuais e ocupacionais da exposição a material biológico entre trabalhadores de enfermagem. *Rev Enferm UERJ*. 2015;23(4):449-54.
7. Ferreira SA, Neto ALL, Batista FLA, Moura LFWG, Oliveira MV, Lima MCL, et al. Biossegurança em laboratório: grau de importância na visão dos alunos do curso de licenciatura em química da UECE, Campus Tauá-CE (CECITEC). *Essentia (Sobral)*. 2018;19(1):103-10.
8. Brasil. Ministério do Trabalho e Emprego. Portaria n. 194, de 22 de dezembro de 2006. Norma regulamentadora n. 06 Equipamento de Proteção Individual. Diário Oficial da República Federativa do Brasil, Brasília (DF). Disponível em: <http://www.guiatrabalhista.com.br/legislacao/nr/nr6.htm>.
9. Gomes SV, Rodrigues CMA, Pereira EAA, Handem PC, Passos JP. Acidentes de trabalho no campo da prática dos acadêmicos de enfermagem. *J Res Fundam Care Online*. 2015;7(4):3366-74.
10. Clemente DCS, Oliveira AA, Leite JGG. Elaboração e implantação dos mapas de riscos ambientais dos laboratórios dos cursos de saúde da Fametro. *Rev Dialog Acad*. 2017;6(1):29-38.
11. Neto F, Pereira SG, Neto HV. Avaliação de riscos biológicos e implementação do plano de ação em laboratório BSL3. *Rev Cesqua*. 2018;1(1):22-47.
12. Santos Jr EP, Batista RRAM, Almeida ATF, Abreu RAA. Acidente de trabalho com material perfurocortante envolvendo profissionais

- e estudantes da área da saúde em hospital de referência. *Rev Bras Med Trab.* 2015;13(2):69-75.
13. Negrello KFJ, Boller S, Miranda FMA, Sarquis LMM. Matriz de recomendações estratégicas para a vacinação dos trabalhadores de saúde. *Rev Bras Med Trab.* 2019;17(2):209-18.
 14. Silva RSS, Madeira MZA, Fernandes MA, Batista OMA, Brito BAM, Carvalho NAR. Riscos ocupacionais entre trabalhadores de enfermagem em Unidade de Terapia Intensiva. *Rev Bras Med Trab.* 2017;15(3):267-75.
 15. Gonçalves KOS, Rocha RG, Assad LG, Tavares JMAB, Marta CB. Riscos e circunstâncias de acidentes com material biológico com o trabalhador de enfermagem. *Rev Enferm Atual In Derm.* 2019;87(25):1-8.
 16. Brasil. Conselho Nacional de Saúde. Resolução 466/12. Trata de pesquisas em seres humanos e atualiza a resolução 196. *Diário Oficial da União.* 12 dez. 2012. Disponível em: https://bvsms.saude.gov.br/bvs/saudelegis/cns/2013/res0466_12_12_2012.html
 17. Bastos ECB, Costa ANB, Melo TS. Perfil epidemiológico dos acidentes de trabalho notificados em um hospital de ensino no Ceará. *Essentia (Sobral).* 2019;20(1):41-9.
 18. Lombardi MR, Campos VP. A enfermagem no Brasil e os contornos de gênero, raça/cor e a classe social na formação do campo profissional. *Rev ABET.* 2018;17(1):28-46.
 19. Dias ICCM, Torres RS, Gordon ASA, Santana EAS, Serra MAAO. Fatores associados ao acidente de trabalho na equipe de enfermagem. *Rev Enferm UFPE.* 2017;11(Supl. 7):2850-5.
 20. Corrêa LBD, Gomes SCS, Ferreira TF, Caldas AJM. Fatores associados ao uso de equipamentos de proteção individual por profissionais de saúde acidentados com material biológico no Estado do Maranhão. *Rev Bras Med Trab.* 2017;15(4):340-9.
 21. Dornelles C, Carvalho LA, Thofehrn MB, Nunes NJS, Fernandes HN. Exposição de profissionais de saúde ao material biológico: estudo no ambiente hospitalar. *J Nurs Health.* 2016;1(1):64-75.
 22. Quemel GKC, Paula LC, Peixoto IVP, Peixoto OS, Araújo JS, Pamplona MCCA, et al. Fatores relacionados a acidentes de trabalho entre profissionais de enfermagem de um hospital público na Região Norte do Brasil entre os anos de 2009 a 2016. *Rev Bras Med Trab.* 2019;17(4):521-9.
 23. Nazario EG, Camponogara S, Dias GL. Riscos ocupacionais e adesão a precauções-padrão no trabalho de enfermagem em terapia intensiva: percepções de trabalhadores. *Rev Bras Saude Ocup.* 2017;42:e7.
 24. Negrinho NBS, Malaguti-Toffano SE, Reis RK, Pereira FMV, Gir E. Fatores associados à exposição ocupacional em material biológico entre profissionais de enfermagem. *Rev Bras Enferm.* 2017;70(1):133-8.
 25. Ribeiro AMVB, Servo MLS. Acidentes de trabalho em profissionais de saúde: uma revisão de literatura. *Rebracisa.* 2019; 2(1):9-17.
 26. Santos VO, Campos MCT. Percepção de profissionais de enfermagem acerca dos riscos ocupacionais. *Rev Bras Pesq Saude.* 2018;20(3):60-8.
 27. Neto EMN, Xavier ASG, Araújo TM. Fatores associados ao estresse ocupacional entre profissionais de enfermagem em serviços de saúde de média complexidade. *Rev Bras Enferm.* 2020;73(1):e20180913.
 28. Nylander BVR, Miranda AD, Rodrigues MRA, Lopes YTB, Peixoto OS. Prevalência de acidentes de trabalho em unidade psiquiátrica de referência. *Para Res Med J.* 2019;3(3-4):e28.
 29. Vieira KMR, Vieira Jr FU, Bittencourt ZZLC. Acidentes de trabalho com material biológico em um hospital escola. *Rev Bras Enferm.* 2019;72(3):737-43.
 30. Fengler AC, Stumm EMF, Colet CF. Acidentes de trabalho pré e pós-implementação de dispositivos de segurança em materiais perfurocortantes hospitalar. *Rev Enferm UFPE.* 2016;10(Supl. 4):3567-75.

Correspondence address: Jucelia Marques Ipiranga - Rua Marques de Muritiba, 131, apto. 104 - Flores - CEP: 69058-140 - Manaus (AM), Brazil - E-mail: jucellia@hotmail.com

