ABSTRACT | Introduction: Hospital workers are exposed to several occupational hazards, which can lead to work accidents. Objectives: To conduct a survey of the main impacts and causes of missed work resulting from occupational accidents occurred among hospital personnel. Methods: Quantitative, descriptive, exploratory chart review carried out at a not-for-profit hospital in a medium-sized municipality in the state of Paraná, Brazil. For data collection, the medical records of 73 hospital workers who sustained occupational accidents from January 2017 to July 2019 were assessed. Results: Of the 73 occupational accidents, 63 (86.3%) occurred in female workers; the age of the victims ranged from 20 to 57 years. Twenty-one workers (28.76%) required time off work; of these, 17 (80.9%) were nurses. The average number of days off work was 8.71, and only two workers were on leave for 15 days or more. Conclusions: Occupational accidents occurred predominantly in female workers, with nursing staff being most affected. Only one worker was away for more than 15 days, and only one accident occurred on the way to work rather than in the workplace. The findings of the present study demonstrate that the hospital work environment is complex and potentially hazardous to the health of workers, many of whom are constantly exposed to a risk of occupational accidents.

Keywords | occupational health; accidents, occupational; hospital; health personnel.

RESUMO | Introdução: Os trabalhadores de hospitais estão expostos a diversos riscos ocupacionais, que podem levar a acidentes de trabalho Objetivos: Realizar um levantamento dos principais impactos e causas provenientes de afastamentos decorrentes de acidentes de trabalho ocorridos entre profissionais da área hospitalar. Métodos: Pesquisa de abordagem quantitativa, descritiva-exploratória, com análise documental, realizada em um hospital filantrópico de um município de médio porte do estado do Paraná. Para a coleta de dados, foram acessados 73 prontuários de trabalhadores vítimas de acidentes de trabalho ocorridos no período de janeiro de 2017 a julho de 2019. Resultados: Dos 73 acidentes de trabalho, 63 (86,3%) ocorreram com trabalhadoras do sexo feminino. A idade dos participantes variou de 20 a 57 anos. Em relação aos afastamentos do trabalho, 21 profissionais (28,76%) foram afastados de suas atividades, sendo 17 enfermeiros (80,9%). A média de dias de afastamento foi de 8,71, e apenas um trabalhador ficou afastado por 15 dias ou mais. Conclusões: Os acidentes de trabalho ocorreram em maior proporção com o sexo feminino, sendo a equipe de enfermagem a mais acometida pelos acidentes. Evidenciou-se que apenas um trabalhador se afastou por mais de 15 dias, bem como somente um acidente de trabalho foi de trajeto. Os resultados obtidos no presente estudo demonstram que o ambiente laboral hospitalar é complexo, podendo gerar danos à saúde dos profissionais, já que muitos deles estão constantemente expostos a ocorrências de acidentes de trabalho.

Palavras-chave | saúde do trabalhador; acidentes de trabalho; hospitais; trabalhadores da saúde.
INTRODUCTION

Work is a crucial milestone in individual identity, allowing one’s placement in and interaction with society, personal growth, and integration of values to the social linkages formed among people.1 Among the countless occupations available, several involve work in hospital, an environment in which workers are exposed to a wide range of occupational hazards, which can lead to work accidents. Hazards specific to this context include contact with needles and other “sharps”, patients’ blood and bodily fluids, etc.2

The healthcare environment often has an impact on workers’ health, exposing them to unsafe and harmful exposures, including noise; chemical substances; biological pathogens, such as bacteria and viruses; and poor ergonomic and environmental conditions.3 In this sense, two of the major occupational hazards to the health workforce are exposure to contamination and to communicable diseases, which may occur due to such common mistakes such as improper hand washing technique or the lack or misuse of personal protective equipment (PPE) and collective protective equipment (CPE).4

All labor processes include a set of factors that determine the occupational risks inherent to each specific job in a given environment. As such, different situations can lead to imbalances which can consequently cause work accidents.5 In Brazil, 37 regulatory standards (Normas Regulamentadoras) are in place intended to prevent, protect, and promote all aspects of workers’ health and include programs aimed at reducing injuries and other harm to their physical and mental integrity.

In Brazil, the National Workers’ Health Policy (Política Nacional de Saúde do Trabalhador e da Trabalhadora) aims to minimize work-related illnesses through an organized network of health information and practices, designed to implement health care, surveillance, prevention, and promotion activities. Labor legislation — represented in Brazil by the Consolidated Labor Laws (Consolidação das Leis do Trabalho, CLT) — has also been passed to protect the safety and health of workers, including hospital personnel.6 Employers must provide measures to protect and prevent their employees from any harm that may come to the latter during the course of labor relations. The Constitution of Brazil enshrines “the guarantee of a healthy environment, aimed at the constant improvement of working conditions” as a social right; likewise, Articles 157 and 200 of the CLT provide for the reduction and minimization of hazards inherent to work through health, hygiene, and safety standards.7-8

Furthermore, a safety culture — defined as a set of shared values and beliefs that interact with organizational structures and control systems for the production of behavioral norms — is of the utmost importance in the hospital environment. A safety culture is composed of four subcomponents: a reporting culture, in which workers recognize the importance of reporting any accidents that occur; a continuous learning culture; a just culture, in which workers feel confident to freely report any abnormal events that occur during their routine work; and a culture of flexibility, which translates the capacity of the work environment under safe conditions.9

Among hospital personnel, illness is the leading reason for absenteeism, a phenomenon that overburdens other team members and can thus trigger a vicious circle of absence from work. It is well known that absenteeism affects the quality of work and can reflect negatively on the quality of patient care.10 Furthermore, in many cases, exposure to occupational hazards leads to work accidents.2

The relevance of this study lies in giving visibility to the importance of ensuring a safe and healthy work environment for health professionals, in order to promote and preserve their health, as well as to demonstrate public policies for health promotion and prevention of diseases to which these workers are exposed. Within this context, the study was designed to carry out a survey of the main causes of and impacts arising from missed work due to accidents that occurred among personnel of a hospital.

METHODS

This was a quantitative, descriptive, exploratory chart-review study, carried out at a not-for-profit hospital in a medium-sized municipality in northern
Paraná, Brazil. The hospital is funded by the public Unified Health System, and had 148 beds and 489 employees at the time of data collection.

For data collection, the records of 73 workers who had sustained work accidents from January 2017 to July 2019 were accessed. Incomplete or difficult-to-identify records were excluded from the sample. A spreadsheet was created to record the collected data, using only the variables contained in the medical records. Information was analyzed using descriptive statistics. The results were presented in the form of absolute and relative frequencies, and listed in a Microsoft Excel spreadsheet.

The study was approved by the institutional Research Ethics Committee (CAAE: 13237019.8.0000.5216, opinion no. 3.341,714), pursuant to Brazilian National Health Council Resolution No. 466.11 Due to the retrospective design of the study, the informed consent requirement was waived.

**RESULTS**

A total of 73 work accidents occurred among hospital staff during the study period: 63 (86.3%) among females and 10 (13.7%) among males. The age of the affected employees ranged from 20 to 57 years. The highest rate of work accidents was found among the nursing staff, which accounted for 60 accidents (82.3%). Overall, the injured workers were employed in different areas of the hospital, including nursing, administration, maintenance, and environmental services. Figure 1 shows the distribution of the affected workers by their occupation within the hospital.

Of the 73 accidents that occurred, 52 required no leave of absence from work. Of the 21 remaining employees who missed work, only one was on leave for more than 15 days. Table 1 shows the distribution of the surveyed employees according to their absence from work.

Table 1. Distribution of employees who sustained occupational accidents by absence from work. Paraná, Brazil, 2019 (n = 73)

| Time off work          | n  |
|------------------------|----|
| None                   | 52 |
| Any                    | 20 |
| 15 days or longer      | 1  |

Figure 1. Number and distribution of workers affected by occupational accidents across hospital departments.
Of the 21 employees (28.76%) who required leave from work, 17 were registered nurses (80.9%). Regardless of the types of occupational accidents, only one (1.4%) occurred on the way to work; all 72 others (98.6%) occurred in the workplace proper. The total number of days off work was 183, with only one worker being absent for 15 days or longer. Table 2 shows the distribution of work accidents according to the number of injured professionals, gender, type of accident, ICD-10 code, and days off work.

As shown in Figure 2, the average number of days off work was 8.71; only employees in Group B required time off work.

Table 2. Distribution of occupational accidents requiring leave of absence stratified by employee gender, position/occupation, type of accident, International Classification of Diseases, 10th edition (ICD-10) code, and days off work. Paraná, Brazil, 2019 (n = 21)

| Gender     | Position          | Type       | ICD-10    | Days off work |
|------------|------------------|------------|-----------|---------------|
| Female     | Nurse aide       | Workplace  | S53.0     | 8             |
| Female     | Housekeeping     | Workplace  | S83.6     | 3             |
| Female     | Housekeeping     | Workplace  | S60.8     | 15            |
| Female     | Registered nurse | Workplace  | S92.4     | 10            |
| Female     | Registered nurse | Workplace  | S93.4     | 5             |
| Female     | Registered nurse | Workplace  | M541.1    | 3             |
| Female     | Registered nurse | Workplace  | S63.5     | 2             |
| Female     | Registered nurse | Workplace  | S60.7     | 60            |
| Female     | Registered nurse | Workplace  | S61.7     | 7             |
| Female     | Registered nurse | Workplace  | S60.2     | 7             |
| Female     | Registered nurse | Workplace  | M75.8     | 5             |
| Female     | Registered nurse | Workplace  | T09       | 5             |
| Female     | Registered nurse | Workplace  | S61.7     | 6             |
| Female     | Registered nurse | Workplace  | S93.4     | 10            |
| Female     | Registered nurse | Workplace  | S400      | 2             |
| Female     | Registered nurse | Workplace  | S202      | 3             |
| Female     | Registered nurse | Traffic    | V299      | 5             |
| Female     | Registered nurse | Workplace  | S60.2     | 10            |
| Male       | Registered nurse | Workplace  | S90       | 7             |
| Male       | Registered nurse | Workplace  | S63.7     | 7             |
| Female     | Nurse technician | Workplace  | S300      | 3             |
DISCUSSION

In the present study, absence from work secondary to occupational accidents predominantly affected the nursing staff, with female workers being most affected. Such results appear to be in line with the findings of Brey et al., who reported a predominance of occupational diseases and injuries in nursing professionals when compared to other occupational categories, and a greater prevalence in female workers.

Several studies carried out among health professionals have studied the incidence of absenteeism and illness in workers aged 18 to 37 years, 41 to 50 years, and 50 to 59 years. Absenteeism can occur regardless of age and become an aggravating factor in the process of work in the hospital environment. In the present study, absenteeism secondary to occupational accidents was most prevalent among workers aged 20 to 57 years. It is worth noting that the procedures performed by nursing staff expose them to a variety of occupational hazards, which imply greater exposure to morbidity, consequently leading to a greater risk of occupational accidents and absenteeism.

The present study revealed a disparity in the incidence of accidents between registered nurses and nursing aides or technicians. Of the 60 work accidents that occurred among nursing staff, 56 affected nurses and only 4 occurred in aides or technicians. It bears stressing that the hospital in which the study was conducted has the corporate practice of hiring a high proportion of registered nurses, who occupy positions of leadership within the organization as well as in patient care.

Recent studies that investigated accidents involving exposure to biological material among nursing staff reported starkly different results, with nursing assistants and nursing technicians being affected more often than registered nurses. Regarding absence from work after accidents, 21 professionals were found to be on leave, again with a female predominance. A study carried out in three university hospitals in São Paulo also showed a predominance of reported accidents among female as compared to male workers — an expected finding, as nursing is still a typically female occupation.

In Brazil, studies have shown that nursing professionals are the healthcare workers most exposed to occupational accidents; as nursing occupations are mostly exercised by women, these data corroborate the findings of the present study. Nonetheless, it is important to consider that the higher prevalence of absenteeism and occupational accidents among women may be due to the double burden of labor experienced by female workers.

In this study, a total of 183 days of absence from work were recorded, with an average leave duration of 8.71 days. In previous research by Martins and Scherer, the average duration of absence from work among staff at the emergency department of the University Hospital of Brasília was 6.27 days. A study carried out in three hospitals in the city of São Paulo reported the average number of days off work per year as 9.9 days in the first hospital, 5 days in the second, and 3.5 days in the third.

It bears stressing, in the hospital where the present study was conducted, there were no occupational accidents among physicians. Comparatively, a prior hospital survey noted 12 accidents in physicians. The lack of accidents involving physicians identified in the present study may be explained by the level of knowledge and precautions taken by these healthcare providers, or may simply represent underreporting by injured physicians. The importance of raising awareness among all health professionals regarding the proper use of PPE, which can not only neutralize hazardous agents but also prevent occupational accidents, cannot be overstated.

Although absolutely essential and commendable, the work of health professionals often exposes them to a series of unsafe conditions inherent to their activities. It is noteworthy that hospital professionals in particular are exposed daily to occupational hazards, which can compromise their health and quality of life, as well as lead to absence from work.

The present study aims to encourage reflection on the topic of occupational accidents by presenting results which can serve as inputs for relevant authorities and managers, in order to mitigate hazards and promote appropriate measures for the prevention of harms that often affect health workers, especially those in
nursing occupations. Nurses, who represent the largest contingent of the hospital workforce and are involved in 24/7 patient care, are accordingly the workers that suffer the most from unsafe conditions and are most exposed to occupational risk factors.

There is a need to join forces for a better understanding of the possibilities of improving the conditions to which hospital workers are subjected and that can expose them to occupational accidents. Thus, the results of this study aim to guide management policies which affect these workers at various spheres of government.

Limitations of this study included difficulty in analyzing medical records through a focus on institutional records, which often contained inconsistent data. It is also believed that underreporting of some work accidents is common, which would preclude generalization of the incidence of accidents and absence from work observed in the study hospital. We stress the need for all health providers to notify the occurrence of all occupational accidents they sustain or treat, aiming to improve the reliability of epidemiological data and subsequent decision-making in order to prevent future accidents.

CONCLUSIONS

Occupational accidents were proportionally more frequent in female workers, with nursing staff most commonly affected. Only one employee was off work for longer than 15 days, and only one accident occurred on the way to work rather than at the workplace per se. The findings of the present study demonstrate that the hospital work environment is complex and potentially hazardous to workers, many of whom are constantly exposed to a risk of occupational accidents and diseases.

Within this context, responsibility for preventing and minimizing occupational hazards falls not only to managers, but also to workers themselves. Awareness of the need for self-care during labor, measures to raise such awareness, and training and capacity-building activities are essential to mitigating or eliminating these hazards.

Nursing professionals, above all, are on the frontline of hospital work and, therefore, are more vulnerable to accidents and diseases, which are reflected by rising absenteeism. Addressing this will require a firm commitments by all health workers, with a focus on permanent continuing education within the hospital environment.

AUTHOR CONTRIBUTIONS

BMSSR was responsible for conceptualization, formal analysis and writing – original draft, and participated in the study investigation, funding acquisition and writing – review & editing of the text. RCMBD was responsible for conceptualization, formal analysis and writing – original draft, and participated in the study investigation, funding acquisition and writing – review & editing of the text. All authors have read and approved the final version submitted and take public responsibility for all aspects of the work.

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Work accidents among hospital personnel

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