



## Fire safety at Lagarto university hospital: analysis of the knowledge of health professionals

### *Segurança contra incêndio no hospital universitário de Lagarto: análise do conhecimento dos profissionais de saúde*

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#### ABSTRACT

To evaluate the knowledge of health professionals about fire safety in selected health care facilities in Lagarto. This is a cross-sectional descriptive study, involving 206 health professionals who are direct patient care providers at the University Hospital. A questionnaire prepared by the researchers was used for data collection. The results were analyzed using descriptive statistics. 51.7% of professionals stated that they work to improve patient safety; However, only 38.9% of respondents feel confident in their ability to remove patients from a fire situation, 38.8% reported not knowing how to use necessary equipment, and 54.4% believe they are responsible for evacuating patients. The results of this study indicate that health establishments and professionals are not adequately prepared to ensure the safety of assets, professionals, and patients.

**Keywords:** Fire; Firefighting systems. Patient care. Patient safety.

#### RESUMO

Avaliar o conhecimento dos profissionais de saúde acerca da segurança contra incêndio no estabelecimento de assistência à saúde de Lagarto. Trata-se de um estudo transversal e descritivo, com 206 profissionais de saúde prestadores de assistência direta ao paciente no Hospital Universitário, com a aplicação de um questionário elaborado pelos pesquisadores. Os resultados foram analisados com estatística descritiva. 51,7% dos profissionais dizem atuar para a melhoria da segurança do paciente, entretanto, apenas 38,9% dos entrevistados consideram ter conhecimento para remover os pacientes dessa situação, 38,8% relataram não saber utilizar os equipamentos necessários, e 54,4% consideram que são responsáveis pela remoção dos pacientes. Os resultados desse estudo apontam para o despreparo dos estabelecimentos e profissionais de saúde para garantir a segurança patrimonial, dos profissionais e dos pacientes.

**Palavras-chave:** Assistência ao paciente. Fogo. Segurança do paciente. Sistemas de combate a incêndio.

## INTRODUCTION

Patient safety is a fundamental principle characterized by the implementation of assistance techniques aimed at reducing unnecessary risks and damages to the client's life and/or health to the minimum possible.<sup>1</sup> However, as the provision of services is carried out by humans, everyone is susceptible to error, especially taking into account some aggravating factors such as lack of frequent training, excessive workload and overcrowded services.<sup>2</sup>

Therefore, the occurrence of a fire in a Health Care Establishment (EAS) puts the health of professionals, structural assets and inmates at risk.<sup>3</sup>

According to the Sprinkler Brazil Institute, although there are no official statistics, around 32 records of fires were recorded in hospital units in some Brazilian states in 2019, but few were reported in the media.<sup>4</sup>

In the same vein, other studies indicate that more than 267 thousand of them occur annually in Brazil, in 2019, they occurred in eleven Brazilian states, causing the death of approximately one thousand people per year.<sup>5</sup>

These disasters can be caused by external or internal factors. The first are associated with human actions, the second are related to issues of nature or accidents, considering that poor management of the establishment can increase the damage caused, with the expiration of safety equipment, irregular wiring and lack of team preparation in storing flammable materials. A relevant international reality regarding these oversights resulting in the occurrence of non-assistance problems is the fact that India is one of the main countries affected by hospital fires, particularly, but not exclusively, in New Delhi, Ahmedabad, Jaipur, Delhi, Siliguri and others.<sup>6</sup>

Other circumstances may interfere with the time and quality of necessary conduct, such as evacuation, which will depend on the nature of the event and the magnitude of the impacted

area. This may involve the number of patients to be moved, their level of dependence for transport and health maintenance without equipment, exit routes and professional training, always paying attention to the real evacuation needs of the establishment.<sup>7</sup>

In view of the above, there is a need to attract greater attention to the topic of preventing and fighting fires, which is still little discussed, even with the high incidence of cases in the hospital environment, providing justification for the preparation of this research. Therefore, the present study aimed to evaluate the knowledge of health professionals about fire safety in the health care establishment in Lagarto.

For carrying out the research, some implications were found, as the study took place during the COVID-19 pandemic, an atypical period, due to which some researchers were unable to collect data and complete the research in a timely manner, as there was still no effective prevention for the problem and hospital access was restricted to professionals from the institution.

The study highlighted some weaknesses in the training and performance of professionals that must be corrected to ensure their safety and that of patients in fire and panic situations. A limitation that can be highlighted is related to filling out the forms, as not all topics were covered. Filled in by all professionals, generating blank fields, this leads to a variation in n in each research topic.

## METHODOLOGY

This cross-sectional and descriptive study was conducted at a public university hospital in the central-southern region of the state of Sergipe.

The sample was non-probabilistic, consisting of health professionals who met the inclusion criteria of providing direct patient care. Those on vacation or leave, as well as those who

did not submit the completed questionnaire within the established 60-day deadline, were excluded.

To determine the minimum sample size, the total number of professionals involved in patient care (N=998) was considered, with a 5% sampling error and a 95% confidence interval. A questionnaire based on the Fire Safety Manual in EAS was developed, consisting of four parts: professional profile/experience, safety culture in the work environment, patient safety, and fire and panic safety.

A pilot test with 10 professionals confirmed the functionality of the research questionnaire, with completion times ranging from 5 to 10 minutes. Data collection occurred between August and September 2021, with researchers distributing and collecting questionnaires at the beginning and end of work shifts, respectively.

Data were entered into a Microsoft Office Excel 2010 database and analyzed using the Statistical Package for the Social Sciences (SPSS)® version 21. Descriptive statistics, including frequencies and absolute numbers, were used to analyze the results.

This study was approved by the human research ethics committee of the Federal University of Sergipe under opinion 4,861,128.

## RESULTS

From the questionnaire, we were able to gather answers related to identification profiles and professional experience, workplace safety culture, patient safety, and fire and panic safety. The information collected was organized into 6 tables based on the questionnaire themes. In table 1, data related to professional profiles and experiences highlighted questions about time in the position, participants' level of education, time working at the establishment, weekly working hours, assistance to people with reduced

mobility, and prior participation in Fire and Panic safety training.

**TABLE 1.** Profile Identification Data/Professional Experience

| (Continued)   |     |      |
|---|-----|------|
| STUDY VARIABLES   | n   | %    |
| <b>Profession (n=193)</b>                                   |     |      |
| Biomedic  | 1   | 0.5  |
| Nurse   | 48  | 24.9 |
| Physiotherapist   | 10  | 5.2  |
| Speech therapist  | 2   | 1.0  |
| Doctor  | 14  | 7.3  |
| Nutritionist  | 2   | 1.0  |
| Psychologist  | 1   | 0.5  |
| Nursing Technician  | 102 | 52.8 |
| Laboratory Technician                                       | 5   | 2.6  |
| Radiology Technician  | 5   | 2.6  |
| Occupational Therapist                                      | 3   | 1.6  |
| <b>Time in Position/Function (n=203)</b>                    |     |      |
| Up to 1 year  | 14  | 6.9  |
| 2 to 5 years  | 50  | 24.6 |
| 6 to 10 years   | 44  | 21.7 |
| 11 to 15 years  | 64  | 31.5 |
| 16 to 20 years  | 22  | 10.8 |
| 20 years or more  | 9   | 4.4  |
| <b>Education Level (n=202)</b>                              |     |      |
| High school   | 9   | 4.5  |
| Technician  | 31  | 15.3 |
| Incomplete higher education                                 | 21  | 10.4 |
| Graduated   | 38  | 18.8 |
| Specialization  | 84  | 41.6 |
| Master's and/or Doctorate                                   | 19  | 9.4  |
| <b>Time in this EAS (Health Care Establishment) (n=196)</b> |     |      |
| Up to 1 year  | 55  | 28.1 |
| 2 to 5 years  | 122 | 62.2 |
| 6 to 10 years   | 12  | 6.1  |
| 11 to 15 years  | 4   | 2.0  |
| 16 to 20 years  | 2   | 1.0  |

| STUDY VARIABLES  | (Conclusion) |      |
|--|--------------|------|
|  | n            | %    |
| 20 years or more   | 1            | 0.5  |
| <b>Weekly workload in this hospital (n=199)</b>  |              |      |
| Up to 24 hours   | 20           | 10.1 |
| 25 to 36 hours   | 157          | 78.9 |
| 37 to 40 hours   | 17           | 8.5  |
| more than 40 hours   | 5            | 2.5  |
| <b>Do you provide assistance to patients with reduced mobility due to their health conditions? (n=201)</b> |              |      |
| Yes  | 176          | 87.6 |
| No   | 25           | 12.4 |
| <b>Have you participated in Fire and Panic Safety training? (n=203)</b>                                    |              |      |
| Yes  | 71           | 35.0 |
| No   | 132          | 65.0 |

This resulted in a larger final sample of 206 participants, mainly consisting of nursing technicians (52.8%) and nurses (24.9%), which may be related to the institution's hiring practices. Additionally, it was evident that while 46.3% of participants had been in their positions for 2 to 10 years, around 65% had never taken part in Fire and Panic Safety training. This data is concerning, especially since 87.6% of them provide direct assistance to people with mobility-related health conditions.

Regarding the presence of a safety culture in the workplace, table 2 shows that the majority of participants are committed to addressing safety issues, both in prevention and after incidents occur. However, this information contradicts the data from table 1, where most claim to have never received any fire safety training.

TABLE 2. Safety Culture in Your Work Environment

| STUDY VARIABLES  | (Continued) |      |
|--|-------------|------|
|  | n           | %    |
| <b>1. All workers, including professionals involved in direct patient care and managers, assume responsibility for their own safety. (n=206)</b>         |             |      |
| I disagree   | 19          | 9.2  |
| Partially disagree   | 22          | 10.7 |
| I do not agree nor disagree  | 11          | 5.3  |
| Partially agree  | 78          | 37.9 |
| I agree  | 76          | 36.9 |
| <b>2. Security is often prioritized above financial and operational goals. (n=205)</b>   |             |      |
| I disagree   | 30          | 14.6 |
| Partially disagree   | 37          | 18.0 |
| I do not agree nor disagree  | 26          | 12.7 |
| Partially agree  | 60          | 29.3 |
| I agree  | 52          | 25.4 |
| <b>3. I am encouraged and rewarded to identify, report and resolve security-related issues. (n=206)</b>  |             |      |
| I disagree   | 40          | 19.4 |
| Partially disagree   | 31          | 15.0 |
| I do not agree nor disagree  | 40          | 19.4 |
| Partially agree  | 44          | 21.4 |
| I agree  | 51          | 24.8 |
| <b>4. Assistance and non-assistance risk management work with risk prediction. (n=206)</b>   |             |      |
| I disagree   | 15          | 7.3  |
| Partially disagree   | 26          | 12.6 |
| I do not agree nor disagree  | 35          | 17.0 |
| Partially agree  | 79          | 38.3 |
| I agree  | 51          | 24.8 |
| <b>5. After incidents occur, the institution seeks to identify risks and develop actions with the aim of preventing new related occurrences. (n=206)</b> |             |      |
| I disagree   | 13          | 6.3  |
| Partially disagree   | 19          | 9.2  |

|  | (Conclusion) |      | (Continued)  |    |      |
|--|--------------|------|--|----|------|
|  | n            | %    | STUDY VARIABLES  | n  | %    |
| I do not agree nor disagree  | 29           | 14.1 | I disagree   | 96 | 47.5 |
| Partially agree  | 67           | 32.5 | Partially disagree   | 41 | 20.3 |
| I agree  | 78           | 37.9 | I do not agree nor disagree  | 24 | 11.9 |
| <b>6. In the institution, the person responsible for the activity in which the incident occurred is solely responsible for the occurrence. (n=204)</b> |              |      | Partially agree  | 32 | 15.8 |
| I disagree   | 101          | 49.5 | I agree  | 9  | 4.5  |
| Partially disagree   | 35           | 17.2 | <b>3. When there is a lot of work to be done quickly (short deadlines), we work as a team to complete it properly. (n=204)</b> |    |      |
| I do not agree nor disagree  | 40           | 19.6 | I disagree   | 18 | 8.8  |
| Partially agree  | 21           | 10.3 | Partially disagree   | 30 | 14.7 |
| I agree  | 7            | 3.4  | I do not agree nor disagree  | 19 | 9.3  |
| <b>7. We are actively working to improve patient safety. (n=205)</b>   |              |      | Partially agree  | 64 | 31.4 |
| I disagree   | 7            | 3.4  | I agree  | 73 | 35.8 |
| Partially disagree   | 9            | 4.4  | <b>4. EAS professionals treat each other with respect. (n=206)</b>   |    |      |
| I do not agree nor disagree  | 22           | 10.7 | I disagree   | 3  | 1.5  |
| Partially agree  | 61           | 29.8 | Partially disagree   | 15 | 7.3  |
| I agree  | 106          | 51.7 | I do not agree nor disagree  | 10 | 4.9  |

Moving on to patient safety, table 3 reveals that despite understaffing (67.8%), there is a commitment to respecting, supporting, and collaborating with colleagues, as well as actively working towards goals that promote patient safety (74.6%). Additionally, 61.9% agreed, at least partially, with evaluating changes to improve patient safety practices.

TABLE 3. Patient Safety

|  | (Continued) |      |  |    |      |
|--|-------------|------|--|----|------|
| STUDY VARIABLES  | n           | %    |  | n  | %    |
| <b>1. In EAS, professionals work as a team, supporting each other. (n=203)</b> |             |      | I disagree   | 38 | 18.6 |
| I disagree   | 12          | 5.9  | Partially disagree   | 36 | 17.6 |
| Partially disagree   | 11          | 5.4  | I do not agree nor disagree  | 23 | 11.3 |
| I do not agree nor disagree  | 16          | 7.9  | Partially agree  | 52 | 25.5 |
| Partially agree  | 77          | 37.9 | I agree  | 55 | 27.0 |
| I agree  | 87          | 42.9 | <b>7. After we implement changes to improve patient safety, we evaluate their effectiveness. (n=205)</b> |    |      |
| <b>2. We have enough staff to meet the workload. (n=202)</b>                   |             |      | I disagree   | 15 | 7.3  |

| STUDY VARIABLES  | (Conclusion) |      |
|--|--------------|------|
|  | n            | %    |
| Partially disagree   | 19           | 9.3  |
| I do not agree nor disagree  | 44           | 21.5 |
| Partially agree  | 73           | 35.6 |
| I agree  | 54           | 26.3 |
| <b>8. I would feel safe receiving care in the unit where I work. (n=205)</b> |              |      |
| I disagree   | 17           | 8.3  |
| Partially disagree   | 25           | 12.2 |
| I do not agree nor disagree  | 21           | 10.2 |
| Partially agree  | 72           | 35.1 |
| I agree  | 70           | 34.1 |
| <b>9. EAS has issues with patient safety. (n=204)</b>                        |              |      |
| I disagree   | 18           | 8.8  |
| Partially disagree   | 30           | 14.7 |
| I do not agree nor disagree  | 46           | 22.5 |
| Partially agree  | 67           | 32.8 |
| I agree  | 43           | 21.1 |

When asked about feeling secure in their work environment, 69.2% responded positively. However, around 53.9% acknowledged problems related to patient safety in the establishment where they work. Fire and panic safety were the main focus of the questionnaire, with information spread across tables 4, 5, and 6.

Table 4 addressed knowledge, training, collaboration, and operational protocols for handling fire emergencies. It revealed gaps in preparation, such as lack of prior training (59.4%), knowledge of emergency exits (57.3%), and proper use of safety equipment (50.7%). There were also concerns about the availability of operational procedures for emergencies and patient evacuation.

**TABLE 4.** Fire and Panic Safety (Part 1)

| STUDY VARIABLES   | (Continued) |      |
|---|-------------|------|
|   | N           | %    |
| <b>1. My professional training course covered Fire and Panic Safety content. (n=202)</b>  |             |      |
| I disagree  | 104         | 51.5 |
| Partially disagree  | 16          | 7.9  |
| I do not agree nor disagree   | 20          | 9.9  |
| Partially agree   | 29          | 14.4 |
| I agree   | 33          | 16.3 |
| <b>2. EAS often provide fire and panic safety training (n=204)</b>  |             |      |
| I disagree  | 73          | 35.8 |
| Partially disagree  | 26          | 12.7 |
| I do not agree nor disagree   | 24          | 11.8 |
| Partially agree   | 38          | 18.6 |
| I agree   | 43          | 21.1 |
| <b>3. EAS usually have operational procedures guiding workers to act in emergencies (e.g. emergency response plan). (n=206)</b>                                 |             |      |
| I disagree  | 62          | 30.1 |
| Partially disagree  | 29          | 14.1 |
| I do not agree nor disagree   | 28          | 13.6 |
| Partially agree   | 49          | 23.8 |
| I agree   | 38          | 18.4 |
| <b>4. EAS usually have procedures guiding workers who provide direct care to the patient on how to act when removing the patient from the building. (n=205)</b> |             |      |
| I disagree  | 73          | 35.6 |
| Partially disagree  | 38          | 18.5 |
| I do not agree nor disagree   | 25          | 12.2 |
| Partially agree   | 34          | 16.6 |
| I agree   | 35          | 17.1 |
| <b>5. I know where the emergency exits are located in the building where I work. (n=204)</b>  |             |      |
| I disagree  | 54          | 26.5 |
| Partially disagree  | 22          | 10.8 |
| I do not agree nor disagree   | 16          | 7.8  |
| Partially agree   | 50          | 24.5 |

|   | (Conclusion) |      | (Continued)  |          |
|---|--------------|------|--|----------|
| I agree   | 62           | 30.4 | Partially agree  | 59 28.8  |
| 6. I actively collaborate to keep escape routes clear. (n=202)                                      |              |      | I agree  | 98 47.8  |
| I disagree  | 31           | 15.3 | <b>3. There is a fire brigade in my building. (n=202)</b>  |          |
| Partially disagree  | 20           | 9.9  | I disagree   | 24 11.9  |
| I do not agree nor disagree   | 27           | 13.4 | Partially disagree   | 6 3.0    |
| Partially agree   | 49           | 24.3 | I do not agree nor disagree  | 21 10.4  |
| I agree   | 75           | 37.1 | Partially agree  | 43 21.3  |
| 7. I have the knowledge to correctly use fire-fighting equipment. (e.g. fire extinguisher). (n=201) |              |      | I agree  | 108 53.5 |
| I disagree  | 78           | 38.8 | <b>4. I know how to call the fire brigade or fire department in cases of emergency. (n=202)</b>  |          |
| Partially disagree  | 24           | 11.9 | I disagree   | 42 20.8  |
| I do not agree nor disagree   | 16           | 8.0  | Partially disagree   | 14 6.9   |
| Partially agree   | 40           | 19.9 | I do not agree nor disagree  | 23 11.4  |
| I agree   | 43           | 21.4 | Partially agree  | 32 15.8  |
|   |              |      | I agree  | 91 45.0  |
|   |              |      | <b>5. I have enough knowledge to act in the event of a fire. (n=201)</b>   |          |
|   |              |      | I disagree   | 71 35.3  |
|   |              |      | Partially disagree   | 31 15.4  |
|   |              |      | I do not agree nor disagree  | 28 13.9  |
|   |              |      | Partially agree  | 49 24.4  |
|   |              |      | I agree  | 22 10.9  |
|   |              |      | <b>6. EAS usually conduct emergency drills (e.g. fires). (n=203)</b>   |          |
|   |              |      | I disagree   | 104 51.2 |
|   |              |      | Partially disagree   | 23 11.3  |
|   |              |      | I do not agree nor disagree  | 35 17.2  |
|   |              |      | Partially agree  | 28 13.8  |
|   |              |      | I agree  | 13 6.4   |
|   |              |      | <b>7. I have participated at least once in emergency simulation exercises, aimed at responding to fire situations and removing patients. (n=204)</b> |          |
|   |              |      | I disagree   | 122 59.8 |
|   |              |      | Partially disagree   | 10 4.9   |
|   |              |      | I do not agree nor disagree  | 16 7.8   |
|   |              |      | Partially agree  | 17 8.3   |
|   |              |      | I agree  | 39 19.1  |

Table 5 further highlighted professionals' lack of knowledge and preparation for fire emergencies, including in sufficient knowledge to act in such situations (50.7%), lack of participation in simulations (59.8%), and unfamiliarity with emergency procedures. Despite this, the majority recognized the importance of fire safety.

TABLE 5. Fire and Panic Safety (Part 2)

|   | (Continued) |      |
|---|-------------|------|
| STUDY VARIABLES   | N           | %    |
| <b>1. I can easily identify and understand emergency signs in a building. (n=205)</b> | N           | %    |
| I disagree  | 30          | 14.6 |
| Partially disagree  | 20          | 9.8  |
| I do not agree nor disagree   | 20          | 9.8  |
| Partially agree   | 61          | 29.8 |
| I agree   | 74          | 36.1 |
| <b>2. I know what a fire brigade is. (n=205)</b>                                      |             |      |
| I disagree  | 18          | 8.8  |
| Partially disagree  | 16          | 7.8  |
| I do not agree nor disagree   | 14          | 6.8  |



|   | (Conclusion) |      |  | (Conclusion) |      |
|---|--------------|------|--|--------------|------|
| <b>8. Fire situations are concerning in hospitals and can cause harm to workers and patients. (n=204)</b> |              |      | I do not agree nor disagree  | 52           | 25.7 |
| I disagree  | 4            | 2.0  | Partially agree  | 50           | 24.8 |
| Partially disagree  | 3            | 1.5  | I agree  | 67           | 33.2 |
| I do not agree nor disagree   | 9            | 4.4  | <b>4. Health professionals are prepared to act in fire situations. (n=203)</b> |              |      |
| Partially agree   | 17           | 8.3  | I disagree   | 80           | 39.4 |
| I agree   | 171          | 83.8 | Partially disagree   | 25           | 12.3 |
|   |              |      | I do not agree nor disagree  | 37           | 18.2 |
|   |              |      | Partially agree  | 38           | 18.7 |
|   |              |      | I agree  | 23           | 11.3 |

Table 6 continued the focus on Fire and Panic Safety, with questions related to institutional organization, professionals' knowledge, and perception of demand. Despite some professionals feeling prepared, there were still concerns about knowledge gaps and lack of preparation in handling fire emergencies. However, the majority acknowledged the importance of fire and panic safety for patient care.

TABLE 6. Fire and Panic Safety (Part 3).

|  | (Continued) |      |
|--|-------------|------|
|  | N           | %    |
| <b>1. When making changes to work processes, it is important to consider the impact they would have on EAS fire and panic safety conditions. (n=202)</b> |             |      |
| I disagree   | 13          | 6.4  |
| Partially disagree   | 14          | 6.9  |
| I do not agree nor disagree  | 50          | 24.8 |
| Partially agree  | 57          | 28.2 |
| I agree  | 68          | 33.7 |
| <b>2. I have the knowledge to efficiently evacuate patients in a fire situation. (n=203)</b>   |             |      |
| I disagree   | 79          | 38.9 |
| Partially disagree   | 32          | 15.8 |
| I do not agree nor disagree  | 23          | 11.3 |
| Partially agree  | 46          | 22.7 |
| I agree  | 23          | 11.3 |
| <b>3. The fire brigade has the necessary knowledge to evacuate patients in the event of a fire. (n=202)</b>  |             |      |
| I disagree   | 22          | 10.9 |
| Partially disagree   | 11          | 5.4  |

|  |     |      |
|--|-----|------|
| <b>5. I believe fire and panic safety are important for patient safety. (n=206)</b>            |     |      |
| I disagree   | 3   | 1.5  |
| Partially disagree   | 7   | 3.4  |
| I do not agree nor disagree  | 3   | 1.5  |
| Partially agree  | 20  | 9.7  |
| I agree  | 173 | 84.0 |
| <b>6. I believe fire and panic safety are important for the quality of assistance. (n 206)</b> |     |      |
| I disagree   | 2   | 1.0  |
| Partially disagree   | 6   | 2.9  |
| I do not agree nor disagree  | 5   | 2.4  |
| Partially agree  | 23  | 11.2 |
| I agree  | 170 | 82.5 |
| <b>7. The EAS facilities I have worked in are safe. (n 206)</b>                                |     |      |
| I disagree   | 23  | 11.2 |
| Partially disagree   | 30  | 14.6 |
| I do not agree nor disagree  | 46  | 22.3 |
| Partially agree  | 75  | 36.4 |
| I agree  | 32  | 15.5 |

## DISCUSSION

Based on the observation that 87.6% of participants assisted people with reduced mobility due to their health condition, the importance of guidance regarding the complexity of carrying out a hospital evacuation and the need for the



existence of an emergency plan stands out in hospital emergencies.

Since leaving the hospital is a difficult action due to the structure of the establishment made up of numerous sectors, different sources of risk and the different profiles of users, who, in most cases, depend on objects or third parties to move around or have some physical-motor, sensory or cognitive disability. Additionally, these patients are generally connected to equipment that preserves their health, making them exposed to greater risks.<sup>9, 10, 11</sup>

Still, despite this reality, 65% of service providers denied having participated in fire and panic safety training, even with the majority of them active in the position for eleven years or more (46.7%). This data raises a question that alerts them to their commitment and that of the institution to prevent and face possible complications. One of the points stated, even partially, by the participants was that both institutions (70.4%) and professionals themselves (81.5%) strive to carry out actions that contribute positively to the prevention of accidents. However, throughout all the findings, contradictions between the thought of what is correct to be done and the actions taken to make the thoughts become reality were visualized.

Other statements that raised doubts were the confirmation of 54.7% of professionals in relation to favoring behaviors aimed at patient safety, through the prioritization of risk prevention above financial or operational goals. In addition, the agreement of 46.2 % of respondents on the offer of rewards for positive attitudes regarding the identification, notification and resolution of demands. Also listed as a positive point is the self-affirmation of commitment to one's safety (74.8%). However, how is this possible taking into account unpreparedness?

Even with an understanding of the need to act for their safety and that of the patient, the data collected prove that many professionals (92.1%) understand that fire situations are worrying in

hospitals and can cause harm to workers and patients. But little research on the subject, in fact, only 30% agree that they prepare to act in a fire situation. 64.7% of those interviewed denied having participated in at least one emergency simulation exercise, aimed at responding to fire situations and the removal of patients. A portion of professionals do not recognize the Fire Department telephone number and, around half are unaware (50.7%) of what they should do in emergencies.<sup>11</sup> This information is compatible with most of the results found throughout the present study.

Regarding patient safety, statements (74.6%) related to the active development of goals aimed at improving patient safety were identified, in addition to the statement (61.9%) of the existence of effectiveness assessments after implementing changes. Furthermore, the existence of a fire brigade within the researched institution was noted. These organizations are made up of people trained with knowledge about preventing and fighting fires. They must know all the risks and the possibilities of minimizing them, as well as, they have an obligation to contribute to the prevention of fires or help victims and work with the Fire Department, in case of incidents, as a way of guaranteeing more efficient assistance in emergencies.<sup>12</sup>

Despite this, it was still agreed by 53.9% of professionals that EAS still has problems within this topic and, one of the factors that can contribute to this, is the insufficient number of professionals to fulfill the workload. This minimum number of professionals becomes detrimental to the quick and safe evacuation process, as the evacuation time is directly proportional to the number of people needed to move the transport equipment and support patients.<sup>9</sup>

Some situations are even more aggravated due to the lives lost, but there are other complications that result in these occurrences, such as, for example, the number of injured people, losses of material goods,

equipment and the impact on the treatment of people located there who, often, in addition to physical fragility, are socially impacted.<sup>13</sup>

Burns are an example of a health impact that has serious physical and psychological consequences for people who experience it. The victims, mostly adult women and children living in developing countries, can become disabled or disfigured, suffer from stigmatization and discrimination. In addition, episodes of fire and burns increase the country's morbidity and mortality, and consequently, expenses, becoming a public health problem.<sup>14,15</sup>

Regarding this issue, employees demonstrated awareness of the importance of fire and panic safety for patient safety and quality of care (93.7%), due to their awareness of its severity and capacity to cause harm to professionals and users of EAS.

However, when data on fire and panic safety were analyzed, it was possible to identify incompatibility with the lines of thought, activities to promote patient safety and risk prevention presented in previous reports. Considering the statements made by most workers, the EAS does not usually offer training or simulations, carry out operational guidance procedures to act in emergencies and correctly remove the patient. This is a basic problem, as the majority of participants (59.4%) stated that they had not had contact with fire and panic protection content during their professional training period, in addition to never having participated in a combat simulation. to the fire.

Using active methods, it is possible to stimulate safe practice with patients as an integrated part of professional practice, even within the academic environment, with the development of simulated realities to provide risk prevention.<sup>16</sup>

Likewise, the publication of Making Healthcare Safer III provides information on possibilities for improving safety with variations in scenarios, realities and possibilities, in which

practices were defined as a set of recognizable processes and structures with the purpose of providing care that aims to reduce probability and/or severity of damage, with variations in their degrees of practical evidence.<sup>17</sup>

To the detriment of this deficiency, it is noticeable the lack of aptitude of these professionals who, despite having basic knowledge of how to locate the emergency exit (54.9%) and activate the fire brigade correctly (60.8%), do not cover their field of knowledge completely, since the majority of research participants confirmed that they did not have sufficient preparation and knowledge to act in cases of fire (50.7%). This could be noticed and confirmed the report of lack of knowledge (54.7%) on the efficient removal of patients in fire situations.

In relation to this flawed reality of the EAS, it is recommended that the EAS must consider the conditions of the building, in addition to promoting fire prevention measures as a way of avoiding damage and ensuring patient safety, highlighting the need to prepare your patient environment, as well as its professionals to act calmly, cautiously and efficiently in emergencies.

<sup>3</sup>

In short, it is essential that all institutions have an "Emergency Plan" and that their employees are trained in relation to fire processes, their risks, causes, damages, combat, evacuation and first aid, in addition to knowing the layout of the building, the location of preventive systems and their use.<sup>12</sup> But even so, disagreement is visible, in whole or in part, about the existence of this tool in the EAS in which they work, given that only 42.2% of these people recognize the existence of this plan. Furthermore, as shown in previous data, the majority of professionals do not receive training or participate in simulations.

In contrast to this reality, it is recommended that simulated exercises be carried out continuously, partial abandonment exercises should be carried out every three or six months and total evacuation simulations should

be carried out once or twice a year, depending on the size of the EAS. Aiming to reach this context, virtual reality through serious simulation games has been implemented in the continuing education of health professionals. This tool brings numerous advantages, as it has a low cost in the long term, can develop different realistic scenarios, including smoke and fire, allows training to be carried out by different people, has no risks for the institution and its occupants, in addition to not interfering with the hospital routine. Therefore, the training can be repeated as many times as necessary, enabling a greater number of annual training sessions and complete learning.<sup>9</sup>

Finally, another necessary point to be discussed is the agreement of professionals (78.2%) that the safe removal of patients in emergencies depends directly on the employees who provide assistance, which is not wrong, but is incomplete. Since, despite the importance of the professional assisting in offering knowledge and preparing the user in this process, the biggest contributor to the patient's safe rescue is the patient, family members or companions.

In view of this, it is important to highlight that within the hospital environment, preventing damage and promoting the patient's health is a responsibility not only of healthcare professionals, but also of their families and the patient themselves. Therefore, it is extremely important that possible risks are identified to promote the effective preparation of professionals so that they can also guide patients and their families on the correct conduct during a possible fire.<sup>18</sup>

The presence of weaknesses related to management attitudes is not an isolated case in the state of Sergipe. In a study carried out in Rondônia, an implication was seen aimed at risk management in the Patient Safety Center, highlighting the need for a process training member to implement good institutional practices.<sup>19</sup>

The present study brings as social implications the need to look back at a situation little seen or highlighted only after the occurrence of disasters: the lack of preparation to deal with fire. As it was possible to see throughout the study, not only with the data collected, but also with the references presented, there is still a need to prepare, from the ground up, professionals and the population as a whole to avoid and, when not possible, deal with fire situations.

The lack of training and technical preparation focused on this topic results in increased financial costs to deal with structural repairs and increased demand for care for injured patients.

## CONCLUSION

Fires in healthcare establishments are common occurrences, but there is a significant lack of reporting on these cases. This directly reflects on the behavior of health facilities and professionals, who fail to take steps to prevent fires and lack the necessary knowledge and preparation to respond effectively in such situations, despite recognizing the importance of the issue. This results in an unprepared, insecure, fearful, and panicked team, unable to ensure patient safety and proper evacuation during a fire.

Therefore, this study has provided valuable information to address the concerns regarding the knowledge of healthcare professionals about fire safety in the Lagarto healthcare establishment. It covers prevention, firefighting, and safe evacuation criteria in the event of a fire.

To further research safety in healthcare settings, we recommend conducting studies at various levels of service provision to identify and address weaknesses that need to be addressed in order to establish effective risk management protocols.

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