

Knowledge of health professionals concerning initial in-hospital care for burn victims



Conhecimento de profissionais de saúde acerca do atendimento inicial intra-hospitalar ao paciente vítima de queimaduras

Conocimiento de profesionales de salud acerca de la atención inicial intrahospitalaria al paciente víctima de quemaduras

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ABSTRACT

Objective: Describe the knowledge of health professionals in relation to initial in-hospital care for burn victims.

Method: Descriptive study, with a qualitative approach, conducted in three units that provide urgent and emergency care, in a city in the state of Minas Gerais. The data collection and analysis occurred simultaneously from September to October 2017. The audio-recorded, semi-structured interviews were transcribed in whole and underwent a deductive content analysis.

Results: Thirty-one health professionals, including physicians, physical therapists and nursing professionals, participated in the study. Three categories were created: "Experience with burns", "Knowledge of care protocols", and "Transformation of knowledge".

Final considerations: Even though the professionals had professional, personal or academic knowledge or experience in caring for burn victims, most of them had basic, inadequate or no knowledge in this area. It is hoped that the findings of this study will help lay the foundation for capacity-building initiatives for these professionals.

Keywords: Burns. Knowledge. Health personnel. Nursing. Emergencies.

RESUMO

Objetivo: Descrever o conhecimento de profissionais de saúde acerca do atendimento inicial intra-hospitalar ao paciente vítima de queimaduras.

Método: Estudo descritivo, de abordagem qualitativa, realizado em três unidades que prestam atendimento de urgência e emergência, localizadas em cidade do interior de Minas Gerais. A coleta e a análise dos dados ocorreram simultaneamente, no período de setembro a outubro de 2017. As entrevistas semiestruturadas, audiogravadas e transcritas na íntegra foram submetidas à análise de conteúdo dedutiva.

Resultados: Participaram 31 profissionais de saúde, entre médicos, fisioterapeutas e profissionais de enfermagem. Foram elaboradas três categorias: "Experiências com queimaduras", "Conhecimento sobre as condutas assistenciais" e "Transformação do conhecimento".

Considerações finais: A maioria dos profissionais demonstrou conhecimento básico, inadequado ou desconhecimento acerca do atendimento ao paciente vítima de queimaduras, mesmo possuindo experiências profissionais, pessoais ou acadêmicas na temática. Espera-se que as evidências encontradas neste estudo contribuam para embasar ações de capacitação destes profissionais.

Palavras-chave: Queimaduras. Conhecimento. Pessoal de saúde. Enfermagem. Emergências.

RESUMEN

Objetivo: Describir el conocimiento de profesionales de salud acerca de la atención inicial intrahospitalaria al paciente víctima de quemaduras.

Método: Estudio descriptivo, de abordaje cualitativo, realizado en tres unidades de atención de urgencia y emergencia ubicadas en el interior de Minas Gerais. La colecta y el análisis de datos ocurrieron simultáneamente, entre septiembre y octubre de 2017. Las entrevistas semiestruturadas, audiogravadas y integralmente transcritas, fueron sometidas al análisis de contenido deductivo.

Resultados: Participaron 31 profesionales de salud, entre médicos, fisioterapeutas y profesionales de enfermería. Se elaboraron tres categorías: "Experiencias con quemaduras", "Conocimiento sobre las conductas asistenciales" y "Transformación del conocimiento".

Consideraciones finales: La mayoría de los profesionales demostró conocimiento básico, inadecuado o desconocimiento acerca de la atención al paciente víctima de quemaduras, aun teniendo experiencias profesionales, personales o académicas en el tema. Se espera que las evidencias encontradas en este estudio contribuyan a elaborar acciones de capacitación de estos profesionales.

Palabras clave: Quemaduras. Conocimiento. Personal de salud. Enfermería. Urgencias médicas.

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■ INTRODUCTION

Emergency services are an important gateway to health care for the general population⁽¹⁾, which must have a qualified team with the ability to communicate and make assertive decisions, since this is a sector that requires quick responses⁽²⁾.

Among the factors that may lead individuals to depend on the care provided by an urgency or emergency care unit are situations involving burns. A burn is defined as an injury to the skin or other tissue, caused by heating or due to radiation, radioactivity, electricity, friction or contact with chemical products⁽³⁾. It is estimated that approximately 1,000,000 Brazilians suffer some kind of burn every year and, among these, 40,000 need to be hospitalized⁽⁴⁾ and 200,000 receive care in emergency units⁽⁵⁾.

In Brazil, burns are also responsible for a high mortality rate, only surpassed by traffic fatalities and homicides⁽⁵⁾. They are determinants in the population's morbidity profile⁽⁶⁾ since, depending on factors such as their extent and severity, they can leave physical and psychological sequelae with impacts that are difficult to measure⁽⁷⁾. Proper care during the acute stage of a burn is a determining factor for reducing mortality and functional, aesthetic, and psychological sequelae in patients that require hospitalization⁽⁷⁾.

It is crucial to correctly manage initial care to burn victims in order to prevent progression of the burns and the sequelae that may be associated with them. However, knowledge of basic burn care practices is universally insufficient, especially among health professionals working in urgent and emergency care units⁽⁸⁾.

Obtaining more information about the knowledge of professionals who provide initial care to burn victims is essential, since this knowledge influences the quality of care provided. In Brazil, there are no studies whose specific focus is to ascertain the knowledge of professionals who provide initial in-hospital care to these patients⁽⁹⁾. Therefore, this study addressed the guiding question: "What knowledge do health professionals working in urgent and emergency care services have in relation to caring for burn victims?"

The objective of the present study is to describe the knowledge of health professionals in urgency and emergency care services regarding in-hospital care provided to burn victims.

■ METHOD

This is a descriptive study, with a qualitative data analysis, which was conducted in three health services that provide urgent and emergency care, in a city in the state

of Minas Gerais. Two of them were public and one was private. The city and health macro-region do not have a specific reference service for treating burns.

The following inclusion criteria were used for recruiting participants: be over 18 years of age and have had at least one month of professional experience in one of the selected urgent and emergency care services. Professionals on leave from work during the data collection period were excluded.

The data were collected during September and October 2017, through audio-recorded, semi-structured interviews, based on the guiding question: "Tell us about your experience caring for burn victims." The interviewers were open to other discussions on the topic, to delve deeper into aspects that would enrich the data and enable achieving the study objectives. This method helped interviewees to speak freely and develop ideas that grew out of the main topic⁽¹⁰⁾. Data was also collected to characterize the participants.

One meeting was held with all but four of the participants, in which further interaction between the interviewees and interviewer was necessary for clarifications and a deeper understanding. The interviews were conducted at the health services during the workday of each professional, and lasted from four to 25 minutes, with an average of eight minutes. The interviews were transcribed immediately after each one, so as not to lose important details related to the context and interaction.

The data analysis, performed at the same time as the data collection, was based on the deductive content analysis described by Elo and Kyngäs⁽¹¹⁾. This method consists of three stages: preparation, organization and reporting of the results. The preparation stage involves transcribing and reading the empirical data for the researchers to fully understand and be familiar with the content. This is followed by a selection of words, sentences or paragraphs that will make up the analysis category. The organization stage includes codification, creation of categories and grouping them for better understanding. In the last stage, for describing the data, the results will be clearly presented based on the set of categories, with sufficient details to provide readers with a full understanding⁽¹¹⁾.

The study design was approved by the Ethics Committee of the Pontifical Catholic University of Minas Gerais, under Opinion No. 2.239.918. During the study, all ethical principles that guide research with human beings, in accordance with the guidelines of Resolution No. 466/12⁽¹²⁾ of the National Health Council, were respected. During the data collection, the study was fully explained to the participants and they indicated their acceptance through signing a free and informed consent form. To preserve the anonym-

ity of the health workers, their names were replaced by the first letter(s) of their job category, followed by a number which represented the order of entry of the participants from each category at their time of insertion into the study. Therefore, N1 means that this was the first nurse to join the study and E14, the last (Chart 1).

■ RESULTS AND DISCUSSION

Characterization of the participants and background

Thirty-one health professionals from five different categories participated in this study: 14 nurses, seven physi-

cians, six nursing technicians, two physical therapists and two nursing assistants. Time of service in the health area ranged from 1.5 to 36 years, with a mean of 11 years. Time of service in the urgent and emergency care services varied from one month to 26 years, with a mean of 3.4 years. Twenty-three women and eight men participated, with a mean age of 34.7 years, ranging from 23 to 68 years (Chart 1).

The three services that participated in this study provided 24-hour urgent and emergency care, and were able to receive patients arriving spontaneously or when brought in by the Mobile Emergency Care Service (SAMU), since the city did not have a burn treatment center. The professionals interviewed worked in the triage, medical office, and emergency room sectors, receiving similar cases in each service.

Code	Date of birth	Sex	Job Category	Length of time working in the health area	Character of the work institution	Work sector	Length of time working in the sector
NA1	3/30/1985	Female	Nursing Assistant	10 years	Public	Red Room	3 years
NA2	2/5/1981	Female	Nursing Assistant	15 years	Private and Philanthropic	Urgent and Emergency	2 years
N1	8/12/1991	Female	Nurse	3 years	Public	Red Room	3 years
N2	11/4/1987	Female	Nurse	3 years	Public	Triage	2.5 years
N3	7/6/1974	Female	Nurse	12 years	Public	Triage	2.5 years
N4	5/20/1985	Female	Nurse	7 years	Public	Triage	3 years
N5	1/25/1975	Female	Nurse	17 years	Public	Triage	3 months
N6	5/16/1988	Female	Nurse	5 years	Public	Red Room	3 years
N7	4/25/1981	Female	Nurse	15 years	Public	Triage	2.5 years
N8	2/14/1986	Female	Nurse	12 years	Private and Philanthropic	Triage	3 months
N9	5/24/1992	Male	Nurse	1.5 years	Private and Philanthropic	Urgent and Emergency	1 month
N10	10/27/1986	Male	Nurse	11 years	Private and Philanthropic	Urgent and Emergency	12 days
N11	4/19/1985	Female	Nurse	9 years	Private and Philanthropic	Urgent and Emergency	1.5 years
N12	2/10/1978	Female	Nurse	2.5 years	Private	Emergency Care	2.5 years
N13	5/18/1984	Male	Nurse	12 years	Private	Emergency Care	3 years
N14	10/14/1986	Female	Nurse	10 years	Private	Emergency Care	3 years
PT1	12/7/1974	Female	Physical therapist	19 years	Public	Red Room	3 years
PT2	10/15/1991	Female	Physical therapist	10 years	Private and Philanthropic	Urgent and Emergency	14 days

P1	1/28/1992	Male	Physician	8 months	Public	Medical Office	2 months
P2	2/14/1990	Male	Physician	1.5 years	Public	Red Room	2 months
P3	10/1/1988	Male	Physician	12 years	Public	Medical Office	2 months
P4	1/14/1970	Female	Physician	21 years	Private and Philanthropic	Urgent and Emergency	17 years
P5	10/7/1985	Male	Physician	6 years	Private and Philanthropic	Urgent and Emergency	2 years
P6	2/15/1949	Male	Physician	36 years	Private	Emergency Care	26 years
P7	7/20/1987	Female	Physician	7 years	Private	Emergency Care	8 months
NT1	11/9/1980	Female	Nursing Technician	14 years	Public	Red Room	3 years
NT2	1/24/1975	Female	Nursing Technician	19 years	Public	Red Room	2 years
NT3	5/30/1966	Female	Nursing Technician	30 years	Private and Philanthropic	Urgent and Emergency	3 years
NT4	3/10/1994	Female	Nursing Technician	17 months	Private and Philanthropic	Urgent and Emergency	17 months
NT5	9/1/1979	Female	Nursing Technician	8 years	Private and Philanthropic	Urgent and Emergency	2 years
NT6	6/16/1984	Male	Nursing Technician	11 years	Private	Emergency Care	5 years

Chart 1 – Characterization of the health workers who participated in the study, according to the initials of the job category, their insertion into the study and number corresponding to order of entry to the study, date of birth, sex, job category, length of time working in the health area, institution and work sector and length of time working in the sector, Minas Gerais, 2017

Source: Interviews with health professionals.

Legend: NA – Nursing Assistant; N – Nurse; PT- Physical therapist; P – Physician; NT – Nursing Technician.

Characterization of the data

The data were organized into three categories: “Experience with burns”, “Knowledge of care protocols” and “Transformation of knowledge”. The results will be presented and discussed below, based on the updated literature on the topic.

Experience with burns

The authors defined experience as any contact the professionals had had with burns, whether in a personal, professional or academic setting, and considered this to be an important factor for knowledge of the subject. All the participants had had at least one type of experience with burns.

Three participants reported personal experiences: two of them had suffered burns resulting from contact with a

hot surface or liquid, and one had a family member who had been burned by fire. Only one of the interviewees reported a work experience outside of the hospital environment, in the Mobile Emergency Care Service (SAMU), treating a pregnant woman who had suffered burns from alcohol and fire. These etiological agents are in the category of those considered more common, such as scalding in young children and liquid alcohol and other flammables in older children and adults⁽¹³⁾.

Regarding previous burn experience in other work locations, four participants had experience in inpatient units (nursing room), two in intensive care units and one in an operating room and outpatient clinic. They shared accounts about the daily care of burn victim from other perspectives, such as nursing room. The authors believe that previous contact with burns in other sectors may have made these professionals more familiar with the subject.

I used to work in Sector C, where I cared for two burn victims. It was like this: in the morning they went to the operating room, were sedated, the wound was dressed and they were sent back to us. The bed was all sterile, the sheets went to the sterilization center and we dressed the wound; in fact, we just changed the dressings on top. (NT2)

With respect to education, seven professionals reported not having had any exposure to the subject, three said that the content received was extensive, and the rest considered the content to be basic or little. In relation to internship, eight professionals had this opportunity. In this context, it is important to train skilled nurses to work within the reality of clinical practice to ensure excellence in nursing care and patient safety. This responsibility should be shared between national and regional nursing councils and institutions of higher learning⁽¹⁴⁾.

I had classes, but they were very weak as far as burns. Very little, weak and superficial. (N8)

Various professionals reported having had initial in-hospital care experience with burn victims. This initial care was provided through the direct care given to the patient or based on the risk classification of these patients:

Since this room is for risk classification, we prioritize. They are always treated as urgent or emergency patients, aren't they?. (N7)

In the following category, the participants reported on their knowledge of care protocols.

Knowledge of care protocols

The first procedures to be applied to burn victims are important, since they will be reflected throughout the patient's treatment cycle. Knowledge of the practices related to treating this type of patient is considered decisive for determining the quality of care provided.

Therefore, this category addresses initial care protocols for burn victims, such as their classification, intubation, circumferential chest burn, intravenous hydration, cleaning, wound care, types of dressings, analgesia, antibiotic therapy and specific aspects about burns (electrical and chemical).

Knowledge of these protocols was categorized as "lack of knowledge" when the professional had no knowledge when questioned; as "inadequate knowledge", when the reports shared by the professionals contained inadequate information/procedures; as "basic knowledge" when the

report described the phenomenon in a simple way; and as "extensive knowledge" when the professional used anatomical, physiological and theoretical grounds for supporting the practice.

Some professionals listed immediate patient stabilization protocols that should be applied during initial care.

First, it is necessary to expose the burned area; assess the type of burn: fire, chemical, boiling water, pan, electric shock; characterize the wound in terms of depth [...] calculate the %TBSA [Percentage of total body surface area]. These patients lose a lot of liquid, so hydration with crystalloids is performed. Analgesia with cortisone and analgesics depending on the case, and sedation depending on the extent and vehicle. Intubation is performed according to respiratory criteria. (P6)

Among the protocols recommended by the Ministry of Health are: assessment of airways and breathing; assessment of circumferential chest burns; exposure of the burned area; venous puncture, preferably peripheral⁽¹³⁾; provide analgesia; check for tetanus vaccination, referring the patient for immunization if necessary; assess the characteristics of the wound; and provide local care⁽¹⁵⁾. None of the professionals reported checking for tetanus vaccinations.

Different types of care among various classes of nurses were noted, since triage professionals understood initial care as risk classification, in order to refer the burn victim for care by professionals in other sectors.

I've had few cases of third-degree burns that were sent straight to the red room. When it's a first- or second-degree burn we send them straight in, and call the physician, to assess and start the procedure. (N3)

Given the importance of theoretical and practical knowledge for providing quality care or risk classification, the knowledge of these professionals was assessed in relation to particularities, instruments, and methods of assessment, and classification of burn victims.

Regarding the percentage of total body surface area (%TBSA), 13 professionals had basic knowledge about the subject, six had no knowledge, four had inadequate knowledge and only one had extensive knowledge about two instruments used for calculating %TBSA.

I usually use the rule of nines. 9% each arm. Leg: 9% for the front of the leg and 9% for the back. Trunk: front of the trunk 9% and back 9%. Head 9%. Genital area 1%.[...] The palm of the hand is also used. The amount for the palm of

the hand, if I'm not mistaken, is 1%. Each palm of the hand is 1% of the body. (P2)

Calculation of %TBSA varies according to age. There are different instruments for performing assessments, but the most common are the "rule of nines" and the "rule of palm", which is considered equivalent to 1%⁽¹³⁾.

In terms of assessing the depth of burn injuries, 11 professionals had basic knowledge on the subject, seven had none, seven had inadequate or erroneous knowledge and two had extensive knowledge. Basic knowledge was defined as a description of the characteristics of the injury, without specifying anatomical damage.

1st, 2nd and 3rd degree. First-degree burns, just reddishness; second-degree: blisters; third-degree, deep tissue (P4)

First-degree burns only affect the epidermis; second-degree burns reach the dermis; and third-degree burns destroy all the layers of the skin, reaching adjacent, deep tissues⁽¹⁵⁾.

With respect to burn severity, seven of the professionals interviewed mentioned classification, but four of them could not describe how it is done; the other three defined the classification inadequately, since they only took into consideration the extent of the injuries, when they are actually defined by the ratio between extent and depth.

Then, we try to complete this initial care in the maximum 30 minutes if it is a major burn; if it's a small burn of 20% or 15%, and not in the upper airway, it's even faster and takes 10 to 15 minutes. (N11)

Following burn classification, six professionals mentioned orotracheal intubation, taking into account the criteria for upper airway burns and changes in respiratory parameters.

Emergency intubation, even if the patient is awake, conscious, oriented and eupneic; we intubate because if the patient has edema of glottis this is a 100% chance. (N11)

Orotracheal intubation should be indicated, based on the following criteria: Glasgow less than 8; PaO₂ less than 60; PaCO₂ higher than 55 in gasometry analysis; oxygen saturation less than 90, and facial and oropharyngeal edema⁽¹³⁾.

Also regarding the respiratory aspect, two professionals referred to measures that should be taken when providing care to patients with circumferential chest burns.

The chest loses its elasticity and the patient goes into respiratory failure. So, you make incisions. You need to do a fasc,

no it's not a fascia. You make incisions on the outside of the chest, as though it were a net open it up [He is referring to the technique of scarotomy]. (P2)

In relation to intravenous hydration, most of the professionals took this procedure into account during initial burn victim care, but only ten could specify the type of hydration and the corresponding criteria, and only two of them considered renal function to be a criterion.

First, we have to assess the patient's renal function, because burn victims get very dehydrated and you don't realize it ... and hydrate. If I'm not mistaken, we used a volume of 4 liters. (P1)

As for the type of volume used in hydration, seven interviewees reported using or having witnessed the use of physiological saline 0.9%, whereas four said they used Ringer's solution. There was also one participant who reported using albumin. One participant reported using what the service had available, but something else would have been better.

The truth is we used physiological saline because there wasn't any Ringer's solution. (P1)

Only two professionals mentioned the Parkland formula during the interviews.

We have a formula that we have to calculate the patient's weight and burned surface area, after which we normally hydrate, if I'm not mistaken, with Ringer's solution. (P3)

It is recommended to base hydration on the Parkland formula, taking into consideration weight and %TBSA. It is preferable to use crystalloid solutions, such as Ringer's solution; the infusion should be 50% of the calculated volume in the first eight hours and 50% in the following 16 hours⁽¹³⁾.

Most of the professionals highlighted the importance of immediately cleaning the injury and that this procedure should be done with physiological saline 0.9%:

We hydrated. We always left a sterile drape moistened with saline - always moistened with saline. (NT2)

There were discrepancies among the interviewees regarding saline temperature:

Then, we received him in Bed 2 and immediately washed him. With warm saline. (NT4)

The protocol is to wash the wound. We wash with cold saline. (NA1)

It is important to emphasize that the skin plays a decisive role in thermoregulation, due to the presence of sweat glands and blood capillaries⁽¹³⁾. Therefore, the temperature of the water or saline used for cleaning purposes should be close to or the same as body temperature⁽¹⁵⁾. The use of cold water or ice is not recommended⁽¹⁶⁾.

Regarding the choice of topical dressings, it will depend on the characteristics of the injury⁽¹⁵⁾. In this context, most of the interviewees mentioned using silver sulfadiazine cream as the main topical dressing.

Silver sulfadiazine is applied, regardless of the type of exposure of the burn. (N11)

Silver sulfadiazine is a topical bactericide due to the presence of silver in its composition, which prevents infections in burns or the action of already existing bacteria in the injury⁽¹³⁾. Dressings composed of high concentrations of antimicrobials are the basis of care in burn treatment centers, since when applied to open wounds, they slowly release the silver in their composition for several days⁽¹⁶⁾.

Other types of topical dressings were mentioned, such as Collagenase, Papaína and Nebacetin®. It is important to point out that professionals often have satisfactory knowledge, but not enough for providing adequate care, since some services have limitations on materials for dressings.

The basic too. Because, unfortunately, we don't have suitable material for treating burns here. (N1)

Reports about the pain experienced by burn victims were common. The professionals manifested uneasiness in relation to pain when caring for burn victims. This could be associated with the injuries and professionals feeling empathy toward patients, thus putting themselves in their place.

Burns are very painful and people arrive with great pain on their faces. (N2)

To alleviate this pain, professionals use pharmacological management (analgesics), mostly opioid-based, and this confirms the intensity of the pain reported by a burn victim.

Everything is opioid-based. Morphine, Fentanyl or Tramadol, depending on the severity, but at least a Tramadol. (P5)

Although some professionals commented on the vulnerability of burn victims, in terms of risk of infection, only two of them spoke about using prophylactic antibiotic therapy.

Antibiotics are used for severe burns, because they are also very exposed. (N10)

Nevertheless, the Ministry of Health recommends only using prophylactic antibiotics for burns where there are higher chances of colonization and symptoms of local and systemic infection⁽¹³⁾.

The professionals spoke about burns with greater specificity, such as chemical or electrical ones. Six participants had experience caring for patients with electrical burns. Most of them were related to a major accident that occurred in the micro-region of the city studied, during Carnival 2014.

It was a serpentine [for Carnival celebration], isn't it? People were throwing streamers during a party and the electricity cable broke and hit the ground. The current spread from one person to the next. Several people died instantly, and some had extensive burns and were sent to a reference hospital, João XXIII in Belo Horizonte. (N14)

At least half of the professionals talked about specific characteristics and how care is managed in these cases, but those who did so spoke knowledgeably on the subject.

The procedure depends on the patient's hemodynamic repercussion. The main concern is the cardiac assessment and investigation of the occurrence of arrhythmias. This is the focus of the treatment. (P6)

Six professionals claimed to have had experience with chemical burns. It stands out that three of them reported experiences with the same etiological agent – in this case, eye burns from welding. The other experiences were associated with beauty products, pesticides or chemical vapor from industrial machines.

Domingo had a patient here with a weld burn in his eyes. He was working with solder without eye protection equipment and got burned in his eye. (N12)

Even though lacking actual experience, one professional knew the protocols to be followed in case of chemical burns.

There's a different treatment for chemicals, because depending on the chemical you can't wash with saline. Or

with water. You have to take the patient to the operating room and perform debridement, because depending on the chemical, it reacts with these components, so the patient needs to go straight to the operating room. (N11)

It is essential to discuss these cases since, even though they are not the main causes of burns, they are frequent in burn treatment centers⁽¹³⁾.

A significant number of professionals reported lack of experience or having forgotten or not knowing what care to administer to burn victims, due to few patients of this kind in the service. This low demand, in turn, was justified by the fact that these health services were not reference centers for providing care to burn victims.

I don't remember anymore. It's been such a long time that I haven't used it. (P5)

Transformation of knowledge

There were reports about constant changes in burn care techniques and theories and the need for professionals to stay updated. Without a firm theoretical foundation, they lose their autonomy, since their practice will be exercised in an insecure way, often leading them to base their actions on other professionals.

Professionals must be equipped to provide comprehensive care, through seeking fresh knowledge⁽¹⁷⁾. Therefore, they need to update their knowledge, since it is essential for developing autonomy. Some professionals spoke about autonomy, or the lack of it.

As a nurse, he has the autonomy to prescribe dressings when making decisions, but I'm always responsible for burn dressings here. (N14)

Therefore, it was examined why professionals who are trained to make decisions choose to base their care on approaches taken by other professionals. This issue is relevant due to the relationship between autonomy and knowledge, since it is necessary to add specific knowledge to ensure professional autonomy⁽¹⁸⁾.

So, dressings generally, when... it's the physician who prescribes. (N10)

It is also important to talk about the socially instituted power assigned to the medical profession, which also involves gender issues which have historically permeated the development of nursing and its autonomy in providing care⁽¹⁸⁾.

Health professionals work in various environments where technology develops at a rapid pace⁽¹⁷⁾. Ever-changing knowledge was also reported by some participants in this study, as a difficulty when providing care.

Correct me if I'm wrong, if there's something new, because I'm not going to remember. (N7)

Related to this, one participant mentioned the resistance of older professionals to new knowledge. This also includes resistance to changes that occur daily in the work of nursing teams, through disputes over areas of operation that have been established over time⁽¹⁹⁾. It is important to address this issue, since shutting out new knowledge can diminish the quality of care provided or even increase the exposure of patients to risks.

We encounter a lot of resistance, especially from older nurses who want to apply cold compresses. They change them and don't have (...) and it goes on and on, more and more, and you say: For God's sake, because the patient is getting hypothermia. (P3)

There were also some participants who said they used technologies for quick access to information in order to resolve uncertainties about the care to be provided.

We usually search on the Internet, which is the most practical way. (N11)

In the field of health, information technology serves as a medium for sharing information, which increases the protection of patients and their privacy, as well as safety, effectiveness and quality of care⁽²⁰⁾. However, even though technology helps, professionals must already have previous knowledge of the protocols to be followed.

■ FINAL CONSIDERATIONS

Although all the professionals had had some type of experience with burns, not all possessed satisfactory knowledge of the techniques and protocols required to provide initial care to burn victims. Nevertheless, the authors consider that practical experience is very important for building the knowledge base of these professionals.

Regarding the necessary protocols for providing initial in-hospital care, a minority of professionals had satisfactory knowledge on the subject. Basic, inadequate or lack of knowledge predominated. The same was the case in relation to immediate care and treatment of injuries.

There were reports about frequent changes in procedures, theories and techniques, thus requiring professionals to constantly update their knowledge. It was noted that technology for quick access to information was used as a search tool for knowledge.

The authors recognize that it is not possible to make generalizations based on the study, since only one specific sample from a certain region was analyzed.

The findings of this study revealed the existence of gaps in the knowledge of health professionals working in urgent and emergency care services, in terms of burn victim care. Hopefully, these findings will help provide the foundation for strategies aimed at training these professionals during their university studies, since most of the interviewees reported that the subject was not sufficiently covered during their undergraduate studies and technical course. This training should also be extended to active professionals through continuing education and on-the-job training, in order to improve the quality of care provided to burn victims.

■ REFERENCES

1. Duro CLM, Lima MADS, Levandovski PF, Bohn MLS, Abreu KP. Perception of nurses regarding risk classification in emergency care units. *Rev Rene* 2014 May-June [cited 2017 Nov 15];15(3):447-54. Available from: <http://periodicos.ufc.br/rene/article/view/3202/2461>.
2. Silva DS, Bernardes A, Gabriel CS, Rocha FLR, Caldana G. A liderança do enfermeiro no contexto dos serviços de urgência e emergência. *Rev Eletr Enf*. 2014 jan/mar;16(1):211-9. DOI: <https://doi.org/10.5216/ree.v16i1.19615>.
3. World Health Organization [Internet]. Geneva: WHO; c2015-2017 [cited 20 Nov 2017]. Violence and injury prevention: Burns; [about 1 screen]. Available from: http://www.who.int/violence_injury_prevention/other_injury/burns/en/.
4. Cruz BF, Cordovil PBL, Batista KNM. Epidemiological profile of patients who suffered burns in Brazil: literature review. *Rev Bras Queimaduras*. 2012;11(4):246-50. Portuguese.
5. Oliveira TS, Moreira KFA, Gonçalves TA. Assistência de enfermagem com pacientes queimados. *Rev Bras Queimaduras*. 2012;11(1):31-7.
6. World Health Organization [Internet]. Geneva: WHO; c2014-2017 [cited 20 Nov 2017]. Burns [about 8 screens]. Available from: <http://www.who.int/media-centre/factsheets/fs365/en/>.
7. Gawryszewki VP, Bernal RTI, Silva NN, Morais Neto OL, Silva MMA, Mascarenhas MDM, et al. Atendimentos decorrentes de queimaduras em serviços públicos de emergência no Brasil, 2009. *Cad Saúde Pública*, 2012;28(4):629-40.
8. Tay PH, Pinder R, Coulson S, Rawlins J. First impressions last... a survey of knowledge of first aid in burn-related injuries amongst hospital workers. *Burns*. 2013 [cited 18 Nov 2017];39(2):291-9 Available from: [https://www.burnsjournal.com/article/S0305-4179\(12\)00171-4/fulltext](https://www.burnsjournal.com/article/S0305-4179(12)00171-4/fulltext).
9. Balan MAJ, Meschial WC, Santana RG, Suzuki SML, Oliveira MLF. Validação de um instrumento de investigação de conhecimento sobre o atendimento inicial ao queimado. *Texto Contexto Enferm*. 2014 [cited 17 Nov 2017];23(2):373-81. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-07072014000200373&lng=pt&nrm=iso&lng=pt.
10. Gerhardt TE, Silveira DT. Métodos de Pesquisa. 1. ed. Porto Alegre: Ed. UFRGS; 2009.
11. Elo S, Kyngäs H. The qualitative content analysis process. *J Adv Nurs*. 2008 Apr;62(1):107-15. DOI: <https://doi.org/10.1111/j.1365-2648.2007.04569.x>.
12. Ministério da Saúde (BR). Conselho Nacional de Saúde. Resolução nº 466, de 12 de dezembro de 2012. Diretrizes e normas regulamentadoras de pesquisa envolvendo seres humanos. Brasília: Diário Oficial da União [da] República Federativa do Brasil. 2013 jun 13;150(112 Seção 1):59-62.
13. Ministério da Saúde. Secretaria de Atenção à Saúde - Departamento de Atenção Especializada. Cartilha para tratamento de emergência das queimaduras. Brasília; 2012. [cited 21 Nov 2017]. Available from: http://bvsms.saude.gov.br/bvs/publicacoes/cartilha_tratamento_emergencia_queimaduras.pdf.
14. Toth JC. The participation of emergency nurses in the development of the Basic Knowledge Assessment Tool (BKAT) for the adult emergency department, the ED-BKAT2. *J Emerg Nurs*. 2013 May;39(3):238-44.
15. Ministério da Saúde. Acolhimento a demanda espontânea: queixas mais comuns na atenção básica. Vol. II. Brasília; 2012 [cited 2017 Nov 21]. Available from: http://189.28.128.100/dab/docs/publicacoes/cadernos_ab/caderno_28.pdf. Cadernos de Atenção Básica, 28.
16. National Association of Emergency Medical Technicians (US). Atendimento pré-hospitalar ao traumatizado: PHTLS. 7ª ed. Rio de Janeiro: Elsevier; 2012.
17. Falkenberg MB, Mendes TPL, Moraes EP, Souza EM. Educação em saúde e educação na saúde: conceitos e implicações para a saúde coletiva. *Ciênc Amp Saúde Coletiva*. 2014 mar;19(3):847-52.
18. Bellaguarda MLR, Padilha MI, Neto AFP, Pires D, Peres MAA. Reflexão sobre a legitimidade da autonomia da enfermagem no campo das profissões de saúde à luz das ideias de Eliot Freidson. *Esc Anna Nery*. 2013 abr/jun;17(2):369-74.
19. Lima RS, Dázio EMR, Rosado SR, Lourenço EB. Dificuldades e facilidades no gerenciamento de enfermagem no hospital na perspectiva do enfermeiro. *Rev Enferm UFPE On Line*. 2014 [22 Nov 2017];8(12):4253-60. Available from: <https://periodicos.ufpe.br/revistas/revistaenfermagem/article/view/10171>.
20. McBride S, Delaney JM, Tietze M. Health information technology and nursing. *Am J Nurs*. 2012 Aug;112(8):36-42.

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