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ORIGINAL ARTICLE

PROFILE OF HOSPITALIZED PATIENTS IN A BURN CARE UNIT

PERFIL DOS PACIENTES INTERNADOS EM UMA UNIDADE DE TRATAMENTO DE QUEIMADOS

PERFIL DE PACIENTES HOSPITALIZADOS EN UNA UNIDAD DE TRATAMIENTO DE QUEMADURAS

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ABSTRACT

Objective: to identify the profile of patients admitted to a burn treatment unit. ***Method:*** field research, exploratory and descriptive, with quantitative approach with 29 patients hospitalized in the burn care unit. Data collection was conducted from consultation in the medical records. The project was approved by the Research Ethics Committee, CAAE 5877814.4.0000.5512. ***Results:*** burns by contact were more frequent (82,7%), adults, the more delay seeking care and remained hospitalized on average 40 days. The average extent of burn was greater than 20% of the body surface with second-degree injuries occurring in 100% of patients. ***Conclusion:*** the major respondents were male, predominantly children and adults, who mostly had burns by contact and remained on average 40 days, as well as second degree burns. ***Descriptors:*** Burns; Nursing; Burn Unit.

RESUMO

Objetivo: identificar o perfil dos pacientes internados em uma unidade de tratamento de queimados. ***Método:*** estudo de campo, exploratório e descritivo, com abordagem quantitativa, composto por 29 pacientes internados na unidade de tratamento de queimados. A coleta de dados foi realizada a partir de consulta nos prontuários. O projeto foi aprovado pelo Comitê de Ética em Pesquisa, CAAE 5877814.4.0000.5512. ***Resultados:*** as queimaduras por contato foram mais frequentes (82,7%), os adultos, os que mais demoram a procurar atendimento e permaneceram internados em média 40 dias. A média de extensão das queimaduras foi maior que 20% da superfície corporal, com lesões de segundo grau ocorrendo em 100% dos pacientes. ***Conclusão:*** a maioria dos entrevistados foi do sexo masculino, predominando crianças e adultos, que apresentavam na sua maioria queimaduras por contato e permaneciam em média mais 40 dias, como também, queimaduras de segundo grau. ***Descritores:*** Queimaduras; Enfermagem; Unidade de Queimados.

RESUMEN

Objetivo: identificar el perfil de los pacientes ingresados en una unidad de tratamiento de quemaduras. ***Método:*** campo de estudio, exploratorio y descriptivo, con enfoque cuantitativo con 29 pacientes hospitalizados en la unidad de cuidado de quemaduras. La recolección de datos se llevó a cabo a partir de la consulta de los registros médicos. El proyecto fue aprobado por el Comité Ético de Investigación, CAAE 5877814.4.0000.5512. ***Resultados:*** las quemaduras por contacto fueron más frecuentes (82,7%), los adultos, más retrasar la búsqueda de atención y permanecieron hospitalizados un promedio de 40 días. El grado promedio de quemadura fue mayor que 20% de la superficie del cuerpo con lesiones de segundo grado se producen en 100% de los pacientes. ***Conclusión:*** la mayoría de los encuestados eran hombres, en su mayoría niños y adultos, que tenían en su mayoría quemaduras por contacto y permanecieron un promedio de 40 días, así como quemaduras de segundo grado. ***Descriptores*:** Burns; Enfermería; Unidad de Quemados.

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INTRODUCTION

The human body is a complex organism consisting of many systems which play a key role in its operation. To remain in homeostasis, it is required that the systems function on a regular basis and the body is constantly protected, the skin is a fundamental barrier in protecting the body against external agents.[1]

Burns are all injuries that occur in the skin or mucous membranes, being caused directly or indirectly by contact with heat or cold, electric current, radiation, chemicals and even those caused by some types of animals or plants. When the burn reaches 10% of the burned surface area (BSA) of a child is considered a risk for the same, as for an adult this figure reaches 15%.[2]

These lesions may achieve different tissues and are evaluated in degrees, according to the depth of tissue damage; can be classified as: the depth (1) 1st degree burn: when the impairment of the tissue occurs in the epidermis and the injured place shows characteristics such as redness, heat and pain; (2) 2nd degree burn: when the deterioration becomes in the epidermis and dermis, and the lesion site has pain, erythema, edema, flictenas, erosion and ulceration, and (3) 3rd degree burn: when there is destruction of both epidermis and dermis, and still can reach the subcutaneous tissue; tendons; ligaments; muscles and bones; It has no pain due to destruction of nerve endings. The depth of the burn can be further classified into 4th degree, which presented all third-degree burn characteristics, however presenting opaque and dry form.[3-4]

Burn victims are exposed to various complications such as cardiovascular overload causing hypotension, renal function impairment leading to hypovolemia and shock;[5] also they are more susceptible to infections, and the prevention and control occur through a multidisciplinary approach, involving clinical surgeon, nursing staff, physical therapists, pediatricians, dietitians and psychologists.[2]

OBJECTIVE

- Identify the profile of patients admitted in a burn treatment unit.

METHOD

Field research, exploratory and descriptive, with quantitative approach, performed in treating burn unit of a referral hospital for Piauí, with 289 beds, 17 of these burn care unit. It offers outpatient care services, laboratory tests, urgent care/emergency and hospitalization.

The study population consisted of 29 burn patients admitted in the burn care unit of the hospital in September and October 2014. Inclusion criteria included patients that would be hospitalized for more than 24 hours. And as exclusion criteria, admitted for less than 24 hours.

The study was conducted using a semi-structured form to collect data directly from medical records of burn patients hospitalized in the burn treatment unit during the months of September and October 2014.

Data collection was done from medical records, with the help of semi-structured form, then tabulated using Microsoft Excel program, allowing calculate the percentages and averages. To assist in the organization of statistical data, the results were analyzed from tables and discussion based on the literature. Statistical significance was set at $p < 0.05$, with a 95% confidence interval.

This study was conducted with reference to the Guidelines and Regulatory Standards for Research Involving Human Subjects and the research project was registered in Brazil Platform and approved with the CAAE 5877814.4.0000.5512.

RESULTS

This study had the participation of 29 patients hospitalized in the burn treatment unit in September and October of 2014.

Table 1. Sociodemographic profile of patients admitted to a burn treatment unit. Teresina (PI), 2014.

Variables		n	%
Gender			
	Female	5	17,2
	Male	24	82,8
Age group			
	0 to 9 years	14	48,3
	10 to 19 years	1	3,4
	20 to 59 years	14	48,3
Schooling			
	Illiterate	13	44,8
	Elementary	10	34,5
	High School	2	6,9
	Not informed	4	13,8
Marital Status			
	Single	18	62
	Married	9	31
	Stable union	2	7
Precedence			
	Teresina	11	37,9
	Counrtyside of Piauí	15	51,7
	Other states	3	10,4
	TOTAL	29	100

Of the total respondents, n = 24 (82,8%) are male and n = 4 (17,2%) female. The predominant age group was 0-9 years n = 14 (48,3%) followed also by young adults 20-59 years n = 14 (48,3%), and by adolescents of 10 to 19 years n = 1 (3,4%), there were not found elderly in this study.

Regarding education n = 13 (44,8%) were illiterate, it including children without school age, followed by those who had made the complete primary or incomplete n = 10 (34,5%), followed by the people who made the completed high school or incomplete n = 2 (6,9%). Four of them had no record.

Regarding marital status n = 18 (62%) are single = 9 (31%) were married and n = 2 (7%) were in a stable union. Taking into account the origin n = 15 (51,7%) are the interior of Piauí, n = 11 (37,9) are Teresina and only n = 3 (10,4) are from other states.

Regarding origin most patients is the interior of Piauí n = 15 (51,7%), followed by patients from Teresina representing n = 11 (37,9%), and finally patients from other states, representing an = 3 (10,4%).

Table 2. Distribution of patients, according to the causative agent. Teresina (PI), 2014.

Causative agent	N	%
Contact	24	82,7
Electric current	5	17,3
Total	29	100

Table 2 shows that admitted patients suffered burns by two types of agents, represented by contact burn n = 24 (82,7%) and electricity only n = 5 (17,3) cases. This high prevalence of burns from contact also shows up in other studies.

Table 3. Sample distribution in relation to length of stay and evolution according to age group. Teresina-PI, 2014.

Age group	Average days hospitalized in ICU	Minimum	Maximum	Average hours of evolution burn
0 to 9 years	8	6	29	7,2 hours
10 to 19 years	13	13	13	2 hours
20 to 59 years	40,3	6	85	12,5 hours
60 years or more	-	-	-	-
Total	61.3	25	127	21,7 hours

It can be seen in Table 6 that subjects aged 20 to 59 years were admitted and remained a greater time, with an average of 40,3 days and that the minimum number of days they were hospitalized was 6 days, and maximum, 29 days, followed by aged 10 to 19 who had an average hospitalized time of 13 days (it is noteworthy that, during the research period, there was only an admission of people in this age group), aged people from 0 to 9 years had a hospitalization media of 8 days, the minimum amount of 6 days, and a maximum of 29 days.

It is noted also that adults were what took longer to be served after the occurrence of the injury, having an average of 12,5 hours in evolution as children took far less time – about 7,1 hours to admission.

Table 4. Profile of extension of burn in inpatients in a burn treatment unit. Teresina (PI), 2014.

	Average burn extension (%)	≤ 10 %	> 10% e ≤ 20%	> 20
0 to 9 years	8,3	7	2	1
10 to 19 years	40			1
20 to 59 years	34,9	2	1	8
Total		9	3	10

In Table 4, it can be observed that children had a burn extent media 8.3% and adults were more prevalent extension having an average of 34,9% of BSA. The most frequent burns were those who had a greater extent than 20% accounting for 10 cases involving all age groups, accompanied by minor burns to 10% of body surface burned and then burns that reached a length between 10 and 20% of BSA. Adolescents have an average of 40% of body surface (has to be taken into account that, during the period, a single admission was performed in this age group).

Table 5. Distribution of patients according to depth of the burn Teresina (PI), 2014.

Burn depth	n	%
1st degree	15	51,7%
2nd degree	29	100%
3rd degree	9	31%
Total	53	182,7

Table 5 shows that, relative to the depth of the burns, all patients had second degree burns n = 29 (100%), followed by the number of patients who had first-degree burns n = 15 (51,7) and finally patients who had third degree burns n = 9 (31%). There has been overlapping data, for a patient that may be classified in more than one type of depth of burn.

DISCUSSION

The BCU works in a continuous manner which receives patients from Teresina and other cities in the state. The rotation in BCU is low, because patients remain a large amount of days in the hospital, but this detention time index could be higher if the sector was attired to be able to receive patients requiring mechanical ventilation.

In Table 1, with regard to gender, it was observed that men were more affected by burns that women respectively n = 24 (82,8%) n = 5 (17,2%), which relates to the data shown for study in visits resulting from burns in an emergency public service in Brazil in 23 capitals and the federal District in 2009 with a sample of 761 patients, it was observed the predominance of men – 446 cases (58,6% of the total) compared to women – 315 cases (41,4% of total).[6]

Study performed to analyze clinical and epidemiological aspects of hospitalized burn patients corroborates the above author, in which was obtained a sample 138 hospitalized patients, and of these n = 98 (71,0%) were male and the mean age was 26,1 years.[7]

The men still work more in services that require more effort and are exposed to activities with higher risk for accidents such as handling mechanical equipment or work on the electricity network, handling chemicals, in addition to fuel and other serious risks accidents such as automobile, wars and drug trafficking.[8]

Therefore, the young male population continues to be the most at risk, and prevention of occupational accidents campaigns should be carried out continuously. The literature describes increase in such accidents, especially in the last quarter of the year, where the workload is even more excessive.[8]

Table 1, regarding to the age of the subjects in this study, shows that the predominant age range was from 0 to 9 years n = 14 (48,3%), followed by young adults from 20 to 59 years n = 14 (48,3%) working age affected by burns, which relates to qualitative study that aims to analyze the most affected age groups showing greater prevalent in children, adolescents and adults of working age, since the range of 20 to 29 years (23,1%) remained in first, followed by children under 10 years (22%). In a study fulfilled with

children in a burn treatment unit, their residence was the predominant site of accidents.[6]

Elderly patients aged 50 or older have obtained the lowest percentage representation among attended by burns, which was also shown in the study.[7]

A study with women hospitalized for burns showed that the age group with the highest incidence among women hospitalized for burn, was 13-43 years (68,9%). The mean age was 32 (13-87) years. A trend to more patients who understand the age range of young adults (20-40 years) can be observed. Among these, the group of 20-25 years was the most affected group. This qualitative study aimed to analyze the epidemiological and anthropometric profile of patients in a burn treatment unit obtained also that the predominant age group was the adult.[10-11]

As for the data related to education shown in Table 1, there was a predominance of illiterate people. It is important to note that children were also included in this age group, followed by people whose elementary school was either complete or incomplete, or had less than nine years study, these data are related to the study of visits resulting from burns in public emergency services in Brazil, which obtained, regarding to the schooling, that most of the patients treated reported having between 9 and 11 years of education (27,1%), followed by those who reported between 0 and 4 years (25,2%). The lowest proportions were found among those aged 12 and over studies.[7]

There were some differences in the education of men and women attended by burns, the first presented homogeneously distributed between 0 and 11 years of study, while women had higher proportions to education: from 9 to 11 years and 0-4 years.[7]

In a study which was evaluated the influence of socioeconomic factors in the occurrence of burns got in relation to the education of patients with a predominance of primary education (complete or incomplete), represented by 72%. Collaborating with the results of this study where n = 11 (44%) patients had attended or were attending, among 1st to 5th grade of elementary school n = 11 (44%) n = 7 (28%) of the 6th-9th year of education key n = 7 (28%).[12]

Regarding to marital status shown in table 1, it was found that most patients was single n = 18 (62%), which corroborate study in patients affected by flammable agents developed with n = 32 patients, n = 25 (78%) males and n = 7 (22%) female, admitted to the university hospital, from July to September 2012. He obtained even singles amounted n = 15 (47%) married n = 14 (44%) and divorced n = 3 (9%).[13]

Study led to assess the socio-economic aspects in the event of burns showed that, among the 25 patients, 52% (13) were married, 44% (11) were single and 4% (1) were divorced.[12]

Regarding to precedence, referred to in Table 1, n = 15 (51,7%) were from other cities in the state. One explanation for the high demand for care in CTQ's in Brazilian capitals, as shown in this study, is related often to the lack of structure and services of access offered in the inner cities do not proffer an assistance for this type of injury and do have structure to receive this sick. For the CTQ the patient receives a call specifies for such morbidity, in which the physical space within the hospital environment meets all the material, physical and human conditions for victim assistance with burning.[5]

Burn injuries occur during exposure to chemical, thermal, electrical and radioactive agents. Hot liquids, fire, steam, and heated objects such as iron or cooking pot are thermal agents that stand out in the rates of burns by contact.[4]

Table 2, presenting the data on the causative agent, contact burns prevailed n = 24 (82,7%) which corroborates study, conducted with the aim of analyzing clinical and epidemiological characteristics of hospitalized burn patients, found that according to cause of burns in 138 burn patients admitted to a teaching hospital, from January 2003 to December 2007. It obtained the open flame corresponded to n = 68 (49,3%), parboiling n = 41 (29,7%); heated surface n = 7 (5,1%); electricity n = 12 (8,7%); chemical agent n = 7 (5,1%) and, not informed, n = 3 (2,1%). This corresponds to say that the three ways of burns from contact together account n = 116 (84,1%) of the total cases.[8]

In a study conducted with a sample of 148 patients admitted to a hospital in Brasilia from June 2009 to February 2010, it was found that the main causal agent of burns was alcohol, followed by hot liquids and direct flame. There was only one case of toxic epidermal necrosis characterized by the Stevens Johnson Syndrome and one by solar rays.[11]

Meanwhile, a study in an BCU in Ribeirão Preto, in order to characterize the accidents by burns, occurred in the home environment and identify the circumstances of these accidents, obtained a sample of 61 patients. It showed that burns resulting from injuries

contact stood out with 93%, about 7% of personal injury from electrical current.[14]

Analyzing the third table, regarding to hospitalization, it was found that adults hospitalized remained higher time, with an average of 40,3 days and that the minimum was 6 and the maximum was 85 days and hospitalization average of all patients was 20,43 days which is less than the study of data, held in a reference hospital in Fortaleza, obtained that the average hospital stay of 49,6 days, and the media of patients was 31,8 years.[15]

In a study of 197 burned patients, the average lesion length was 21,32% of the SCQ. The average length of stay was 24 days in the CTQ. In analyzing the past fifteen years, patients injured by thermal origin obtained the average time of stay in 21,75 days.[16]

In a work carried out in the period from July to September 2012, relative to the stay in the hospital, 31% of patients were admitted to the unit between 11 to 21 days, the period from 1 to 10 days had a 25% frequency patients, 22% of respondents remained hospitalized 22 to 31 days, with seven cases of patients and 22% of respondents remained for longer than 32 days..[13]

Thus, it can be seen that the length of hospital stay in this study was 20,4 days relate to studies that evaluated the burned body surface and the length of stay and noted that the time was 24 days, while differed enough from the study of the study that analyzed burned patients with motor sequelae which the number of days was 49,6 days. There were no admissions of elderly in this study, as in the studies that assessed the trend of hospital morbidity from burns and found that seniors accounted for the lowest rates of hospitalization being close to zero.[15-17]

The severity of a burn is determined mainly by the extent of BSA and its depth. Other factors that should be taken into consideration are the causative agent, the patient's age, presence of concurrent medical or surgical problems and complications that accompany the burns of special areas such as the face, hands and genitals.[8]

Looking to the data *length of the burning* at Table 4, it is noted that adult subjects achieved a greater extent n = 11 (34,9%), burns of more than 20% of burnt body area were the most important mainly in adults, and that the average burn length of all patients was 27,7% which is slightly above the studies performed in patients who had thermal burn conducted with a sample of 194 patients admitted obtained an average length of 21,32% lesion in the body area, and the large burnt represented 37,56% (74 patients).[16]

During the present study was not conducted admissions of elderly patients, but in a study of 57 elderly evaluating the epidemiological data in a CTQ in Rio de Janeiro, obtained the SCQ in predominant percentage was 10-19% in 23 patients, 20 to 29 12% of patients, 30 to 39% in four patients, 40 to 49% in five patients and 50 to 59% in two.[18]

A study performed got, for the gravity, n = 66 (65,35%) patients were classified as low severity, while n = 12 (11,9%) n = 23 (22,75%) respectively were classified as severe and moderate severity. It was found that n = 61 (60,3%) were less than 10% BSA. The average was 11,3% of burned body surface, ranging from 1 to 77,5%.[9] Thus, compared to study by other authors, it can be seen that the average extension of the burned surface that was 27% and the percentage in relation to individuals who had a burn extent greater than 20% this study came from analyzing the hospitalization to death with the body surface burned and found 21,32% of the average of SCQ.[16]

In relation to the total extent of burning, it is shown that adult subjects had a higher prevalence of extensive burns over 10% BSA in much smaller nine year old children had more burns reached less than 10% of the body length. These data are similar to the study portraying the epidemiological and anthropometric profile of patients in a burn treatment unit, depicting that adults were the most prevalent in the stratifications of more extensive burns (> 10% BSA), while children accounted for the largest number of patients with less than or equal to 10% TBSA.[11]

The extent of burn is expressed as a percentage of ASCT. It is estimated more accurately by employing tables related to age, specially designed. It is more efficient to use a table to designate body proportions for children of different sizes and different ages of individuals. As the skin of infants and the elderly are very thin, they are likely to suffer deeper lesions compared with children and older adults.[4]

Burns mostly affect more than one body region, and can entail more than one classification in the region, such as depth, and it happened in this study.

For Burn depth as shown in Table 5, n = 29 (100%) were second degree burn. This prevalence was much more than a study of the children burned profile obtained prevalence of 59,3% (284) of the surveyed cases. And it was also above the results obtained in the study where most of the

lesions of patients fell into the depth of second degree with a media of 52% cases.[19-20]

Study conducted to identify the clinical profile of children and adolescents victims of burns, admitted in a reference hospital from January 2007 to December 2009, found that the second-degree burns accounted for 62,6% of cases in a sample 289 patients.[5] Another study in order to characterize the accidental burning reached the same conclusion, referring to the second-degree injuries accounted for a majority in the case as the assessment of the depth of the lesions.[14]

Study on burn victims treated at emergency unit show data indicating that the burns thermal agents occurred in isolated lesions of the first degree, second degree and mixed. In chemical burns, second degree injuries prevailed with a larger number of casos.[21]

Inhalation injuries occur when there is a tree bronchial tracheal trauma, caused by inhalation of hot gases and toxic chemicals produced during combustion. Although direct thermal injury to the upper pathway might happen, it is rare heat injury below the vocal cords, since the heated air is breathed in and cooled in the upper airway before reaching the trachea.

CONCLUSION

The socio-demographic profile of patients hospitalized in the burn care unit revealed most males in the age group of children and adults with low educational level and prevalence the single marital status and most of the patients were mainly from the state countryside.

As the causative agent burns on contact accounted for the highest incidence (82,7%), and the average duration 20,43 days, mean evolution before treatment was 7,2 hours and adults responsible for maintaining this high level. It was also vouched that the average length of the SCQ was 27,7% and that the burns that led to a greater extent than 20% were prevalent. Considering the depth of the burn all patients n = 29 (100%) suffered second degree burns.

Understanding the profile of patients susceptible to the main etiological factors and preventive and therapeutic management of burns is the first attitude to the multidisciplinary team to develop a plan of care, aiming the quality of life for patients with burn.

It is recommended the need for more studies in this area to increase knowledge, guiding the creation of assistance protocols on the results of the patient's profile within the institution. The sector should work more partnership with CCIH to change the rules and routines regarding the prevention of nosocomial infection.

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