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ORIGINAL ARTICLE

ANALYSIS OF THE RECORDS OF ASSISTANCE PROVIDED TO BURNED PATIENTS IN A UNIT OF EMERGENCY AND URGENCY

ANÁLISES DOS REGISTROS DOS ATENDIMENTOS POR QUEIMADURAS EM UMA UNIDADE DE URGÊNCIA E EMERGÊNCIA

ANÁLISIS DE LOS REGISTROS DE LOS ATENDIMIENTOS POR QUEMADURAS EN UMA UNIDAD DE URGENCIA Y EMERGENCIA

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ABSTRACT

Objective: to analyze the information contained in records of assistance to burned patients in a unit of urgency and emergency. ***Method:*** quantitative, descriptive and retrospective study held at the First-aid Post of the city of Pelotas/RS and based on attendance records issued in 2011. ***Results:*** there was greater number of assistance to males between 18 and 45 years old. Most suffered burns in the workplace and in the home. Both sexes had only one region of the body affected. The regions of head, neck and upper limbs were the most affected regions. Hot surfaces and superheated liquids were the most common etiologic agents. In all analyzed information, incompleteness of records was observed. ***Conclusion:*** the characteristics of burn occurrences in an emergency and urgency service of the southern of RS are similar to other studies conducted in Brazil and worldwide. ***Descriptors:*** Burns; Medical records; Emergency Medical Services.

RESUMO

Objetivo: analisar as informações dos registros das fichas de atendimento por queimaduras numa unidade de urgência e emergência. ***Método:*** estudo quantitativo, retrospectivo e descritivo realizado na unidade de Pronto-Socorro da cidade de Pelotas/RS, a partir das fichas de atendimentos, emitidas em 2011. ***Resultados:*** houve maior número de atendimentos no sexo masculino entre 18 e 45 anos de idade. A maioria sofreu queimaduras no local de trabalho e no ambiente doméstico. Ambos os sexos tiveram apenas uma região do corpo atingida. As regiões de cabeça, pescoço e membros superiores foram as regiões mais atingidas. As superfícies quentes e os líquidos superaquecidos foram os agentes etiológicos mais frequentes. Em todas as informações analisadas, constatou-se incompletude dos registros. ***Conclusão:*** as características das ocorrências de queimaduras em um serviço de urgência e emergência da região sul do RS são semelhantes as de outros estudos realizado no Brasil e no mundo. ***Descritores:*** Queimaduras; Registros Médicos; Serviços Médicos de Emergência.

RESUMEN

Objetivo: analizar las informaciones de los registros de las fichas de atendimiento por quemaduras en una unidad de urgencia y emergencia. ***Método:*** estudio cuantitativo, retrospectivo y descriptivo realizado en la unidad de Pronto-Socorro de la ciudad de Pelotas/RS, a partir de las fichas de atendimientos, emitidas en 2011. ***Resultados:*** hubo mayor número de atendimientos en el sexo masculino entre 18 y 45 años de edad. La mayoría sufrió quemaduras en el local de trabajo y en el ambiente doméstico. Ambos sexos tuvieron apenas una región del cuerpo afectadas. Las regiones de la cabeza, pescuezo y miembros superiores fueron las regiones más afectadas. Las superficies calientes y los líquidos súper calentados fueron los agentes etiológicos más frecuentes. En todas las informaciones analizadas, se constataron registros incompletos. ***Conclusión:*** las características de las ocurrencias de quemaduras en un servicio de urgencia y emergencia de la región sur de RS son semejantes a las de otros estudios realizados en Brasil y en el mundo. ***Descriptores:*** Quemaduras; Registros Médicos; Servicios Médicos de Emergencia.

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INTRODUCTION

Burns are a serious public health problem worldwide. It is estimated that 195,000 deaths occur each year due to this kind of injury. Deaths from burns involving fire are among the 15 leading causes of death among children and young adults from five to 29 years old. More than 95% of fatal burns occur in low and middle income countries. Among the various age groups, children under five and the elderly above 70 years have the highest mortality rates and millions survive with limitations or disfigurements which often incurr stigma and rejection.[1]

Mortality rates related to fire are especially high in Southeast Asia (11.6 deaths per 100,000 inhabitants/year), in the Eastern Mediterranean (6.4 deaths per 100,000 population/year) and Africa (6.1 deaths per 100,000 inhabitants/year) and are significantly lower in high-income countries with only one death for every 100,000 inhabitants/year, on average.[2]

In the United States, 142,318,000 cases of assistance to burned individuals were identified in the analysis of the ten-year period (1996 to 2006) of data corresponding to the National Burn Repository, representing burn centers in that country. Among these, 70% of subjects were male, aged between five and 50 years. Most injuries occurred in the home environment (42%), followed by accidents on the street or road (20%) and industry (7.8%).[3]

In Turkey, 314 hospital attendance cases under inpatient and outpatient basis were analyzed in a five-year period (1996 - 2000). Among these, 201 (64%) were men and 113 (36%) women. The mean age was 32.9 years. Most burn injuries occurred at home (63%), followed by accidents in the workplace (20%). The main etiologic agent was direct flame (152 patients), followed by blanching (114 patients), electricity (34 patients) and chemicals (eight patients).[4]

In Brazil, several studies show that adult males are the most affected by burns[5-7] often causing occupational absenteeism.[8] Authors note that children below school age are also among the public most affected by this injury.[9]

A study at the Burn Treatment Center in Sorocaba, São Paulo, showed that the home was the site of higher prevalence of injury from burns. Fire (48%) was the most frequent etiological agent, followed by flammable liquid (43%). Scalding from superheated liquid is more frequent in the case of children. As for the burned body region, trunk and upper limbs were the most affected[5] and the residence was the most frequent site of occurrences, followed by workplace.[6,7]

Many urgency and emergency services offer care according to recommended by the Ministry of Health through Hosting with Risk Assessment and Rating. Through this, users are ranked according to the severity of the case and not in the order of arrival, providing agility of service and resolving both the cases of burns as the others, always giving priority to the most serious cases.[10]

In cases of assistance to users with burn injuries, records represent important tools for evaluation by the various professionals involved in the care of victims of this injury, since they can directly influence the quality of immediate care, prognosis and continuity of treatment when necessary in specialized units.

Among the aspects that should be noted are the degree, extent and depth of the lesion, the age of the affected individual, presence of damage in key areas (eyes, ears, face, neck, large joints, genitals and burns that reach deep structures) and the causative agent[11,] as well as the duration of contact with the agent and the environment in which the burn happened. Thus, the correct and detailed record of the circumstances in which the accident occurred is relevant to adoption of the proper care for each situation.

A study in Maringá/PR[7] found flaws in the notes regarding the procedures adopted during assistance, which may be closely related to the lack of knowledge, inadequate conditions of sheet records or lack of recognition of the importance of these records by professionals involved in the care of these users. The authors emphasize that the records are important tools for adoption of behaviors and the lack of data on injuries, place of occurrence, among other information, negatively interferes with the patient's recovery. They conclude that the care provided to burned patients must be rooted in deep scientific knowledge.

Thus, this study aims to analyze the information contained in the records of assistance to burned patients in an urgency and emergency care unit.

METHOD

Quantitative, descriptive and retrospective study based on information contained in the records of attendance sheets of the First-aid Post (FAP) of Pelotas, Rio Grande do Sul, issued from January to December 2011.

The FAP of Pelotas has a Regional profile and is a reference service for municipalities in the region to urgency and emergency care. Currently, the management of the institution is assigned to the Municipality along with local universities and one hospital in the municipality. The service is a reference of southern Rio Grande do Sul and serves all the people who are at risk of death or those who have complaints considered urgent. Cases that are solved in this service are referred to the Emergency Medical Unit of the city or to Basic Health Units, following the risk rating service.[12]

Data collection took place from November 2012 through March 2013. An instrument previously constructed according to the purpose of the study, to gather information on identification and care provided, was applied for extraction of information from the records of assistance.

Students that are members of the Outreach and Research Group of Burns from the School of Nursing (Snu) of the Federal University of Pelotas (UFPel) were previously trained to help in the collection of data.

Data were organized and inserted in the program *Excel*-2010 of *Microsoft Windows* and subsequently processed in the "*Statistical Package for Social Sciences*"- SPSS, version 18.0, to carry out descriptive analyzes.

The study was approved by the Research Ethics Committee of the Nursing School of the Federal University of Pelotas, under Opinion nº 033/2012 and followed the recommendations of Resolution 466/2012 of the National Health Council of the Ministry of Health[13] and the Ethics Code of Nursing Professionals (COFEN Resolution nº 311/2007), chapter III.[14]

RESULTS

A total of 85,270 Urgency and Emergency Service records in the focal city were analyzed. Among these, 529 corresponded to assistance for burns. For the analysis of this study, we considered the records corresponding to the first service of burns contemplated in the definition of ICD-10, thus excluding care records related to injury by contact with caterpillars/caterpillar-of-fire (classified as attendances for burns) and returns for evaluation of cases assisted in the service. Thus, data on 350 assistance sheets to burn injuries were analyzed.

Among the total (350 sheets), there was a greater number of cases of males (n = 222) and in the age group 18-45 years, followed by the age group of zero to seven years. Among sheets of adults aged between 18 and 45 years, 110 (49.5%) were males and 51 (39.8%) were females; and between the age of zero to seven years, 41 (18.5%) were males and 33 (25.8%) females (Table 1).

The health service had a higher number (321) of assistance for burns of patient residing in the district, 200 (90.1%) males and 121 (94.5%) females. At the municipality of Pelotas, most men lived in the district Fragata (22.1%) and Três Vendas (19.4%). Among women, the most frequent district was Três Vendas (25%), followed by Fragata (23.4%), both referred to as the most populated districts of the city (Table 1).

Table 1. Characterization of assistance for burns according to age, city and district. Pelotas, 2013.

Sex (n = 350) Variables	Male (%) (n = 222)	Female (%) (n = 128)
Age group		
0-7 years	41 (18.5%)	33 (25.8%)
7-12 years	13 (5.9%)	7 (5.5%)
12-18 years	14 (6.3%)	11 (8.6%)
18-45 years	110 (49.5%)	51 (39.8%)
45-60 years	36 (16.2%)	14 (10.9%)
> 60 years	6 (2.7%)	10 (7.8%)
No information	2 (0.9%)	2 (1.6%)
Municipality		
Pelotas	200 (90.9%)	121 (94.5%)
Other municipalities	20 (9.1%)	6 (4.69%)
No information	2 (0.9%)	1 (0.78%)
District (Pelotas)		
Três vendas	43 (19.4%)	32 (25.0%)
Areal	39 (17.6%)	19 (14.8%)
Fragata	49 (22.1%)	30 (23.4%)
Laranjal	3 (1.4%)	-
Centro	10 (4.5%)	11 (8.6%)
Porto	12 (5.4%)	6 (4.7%)
Rural districts	4 (1.8%)	3 (2.3%)
No information	62 (27.9%)	27 (21.1%)

Regarding the local/reason of the accident, such information is absent in 312 (89.1%) attendance records. Among 38 (10.8%) sheets that contained this information, 15 (6.8%)

were of male patients who suffered burns in the workplace and seven (5.5%) were females who suffered burns at home (Table 2).

Regarding the affected body region, most cases of burn for both sexes had only one region of the body affected, with 175 (78.8%) males and 95 (74.2%) females, followed by two regions of the body that were burned, corresponding to 25 (11.3%) and 16 (12.5%), respectively. The areas of head and neck (n = 97; 43.7%) stand out in men, and among women, the upper limbs (n = 53; 41.4%) (Table 2).

Regarding the depth of the injury, this information was found in 184 (52.5%) sheets. Among these, 92 (41.4%) were classified as first and second degree, in men, and 83 (64.8%) in women (Table 2).

The most incident causal agents among men were contact with hot surfaces such as hot metal, plastic, welding, cigarettes and glue (n = 56; 25.2%), followed by superheated liquids (n = 44; 19.8%) and, among women, superheated liquid (n = 54; 42.2%) and flammable liquids (n = 16; 12.5%). It was not possible to identify this information in 79 (47.1%) sheets (19.8% in men and 27.3% in women) (Table 2).

Table 2. Characterization of the assistance for burns according to indicators of severity. Pelotas, 2013.

Gender Variables	Male (%) (n = 222)	Female (%) (n = 128)
Local/reason of the accident		
Domestic	12 (5.4%)	7 (5.5%)
Work	15 (6.8%)	-
Public transport way	2 (0.9%)	1 (0.8%)
Attempt of suicide	1 (0.5%)	-
No information	192 (86.5%)	120 (93.8%)
Affected body region		
One affected region	175 (78.8%)	95 (74.2%)
Two affected regions	25 (11.3%)	16 (12.5%)
Three affected regions	8 (3.6%)	9 (7.0%)
More than three affected regions	3 (1.4%)	2 (1.6%)
No information	11 (5.0%)	6 (4.7%)
Head/neck		
Yes	97 (43.7%)	32 (25.0%)
No	114 (51.4%)	90 (70.3%)
No information	11 (5.0%)	6 (4.7%)
Anterior/posterior trunk		
Yes	30 (13.5%)	23 (18.0%)
No	181 (81.5%)	99 (77.3%)
No information	11 (5.0%)	6 (4.7%)
Upper limbs		
Yes	65 (29.3%)	53 (41.4%)
No	146 (65.8%)	69 (53.9%)
No information	11 (5.0%)	6 (4.7%)
Lower limbs		
Yes	63 (28.4%)	47 (36.7%)
No	148 (66.7%)	75 (58.6%)
No information	11 (5.0%)	6 (4.7%)
Sex organs		
Yes	2 (0.9%)	4 (3.1%)
No	209 (94.1%)	118 (92.2%)
No information	11 (5.0%)	6 (4.7%)
Depth		
First/second degree	92 (41.40%)	83 (64.82%)
Second/third Degree	8 (3.60%)	1 (0.78%)
No information	122 (55%)	44 (34.4%)
Causal agent		
Superheated liquids	44 (19.8%)	54 (42.2%)
Flammable liquids	12 (5.4%)	16 (12.5%)
Hot surfaces	56 (25.2%)	8 (6.3%)
Direct flame	13 (5.9%)	7 (5.5%)
Electricity	11 (5.0%)	2 (1.6%)
Chemical agent	26 (11.7%)	2 (1.6%)
Explosion	6 (2.7%)	2 (1.6%)
Hot food	1 (0.5%)	-
Vapor	2 (0.9%)	-
Sun burn	7 (3.2%)	2 (1.6%)
No information	44 (19.8%)	35 (27.3%)

The season with the highest number of burns, in both sexes, was the summer, the males with 88 (39.6%) cases and females with 42 (32.8%); followed by the spring season with 55 (24.8%) and 36 (28.1%), respectively (Table 3).

With regard to the form of entry in the First-aid Post, it was observed that 325 (92.8%) analyzed records did not have this information. Thus, from total of men in the records (n = 222; 63.4%), 11 (5%) arrived at the FAP through the Mobile Emergency Service (SAMU), one (0.5%) was forwarded by the military brigade and four (1.8%) arrived through ambulance from other cities. Among women, four (3.1%) received care and were forwarded by the SAMU, three (2.3%) came through ambulance from other cities and one (0.8%) through ambulance of the municipality (Table 3).

Regarding the risk classification implemented in the service of FAP of Pelotas, 223 (63.7%) sheets had no record or had the classification protocol completed. Thus, it was found that two (0.9%) of the men were classified as code red/emergency, 41 (18.5%) as yellow/urgency and 46 (20.7%) as green/prompt care. Among females, one (0.8%) was coded as red/emergency, 23 (18%) as yellow/urgency and 14 (10.9%) as green/prompt care (Table 3).

Among procedures whose records were identified in primary care to patients with burns were found: dressing and administration of medication in 70 (31.5%) men and 53 (41.4%) of women and performing dressing in 49 (22.1%) men and 38 (29.7%) women (Table 3).

Referral for evaluation or continuity of treatmentwas not observed for 139 (61.3%) men and 99 (77.3%) women. Thus, 54 (24.3%) men were referred to the eye clinic and in 12 (9.4%) records of females these were returns to the First-aid Post. Sixteen (7.2%) men and 11 (8.6%) women were referred to the Basic Health Unit (Table 3).

Table 3. Characterization of assistances for burns according to the season of the year in which the accident occurred, form of entry in the First-aid Post and Risk Rating. Pelotas, 2013.

Gender Variables	Male (%) (n = 222)	Female (%) (n = 128)
Time of the year		
Summer	88 (39.6%)	42 (32.8%)
Fall	46 (20.7%)	24 (18.8%)
Winter	32 (14.4%)	26 (20.3%)
Spring	55 (24.8%)	36 (28.1%)
No information	1 (0.5%)	-
From entry		
SAMU	11 (5.0%)	4 (3.1%)
Military brigade	1 (0.5%)	-
Ambulance from other cities	4 (1.8%)	3 (2.3%)
Others	-	1 (0.8%)
Ambulance of the municipality	-	1 (0.8%)
No information	206 (92.8%)	119 (93.0%)
Risk Ranking		
Red	2 (0.9%)	1 (0.8%)
Yellow	41 (18.5%)	23 (18.0%)
Green	46 (20.7%)	14 (10.9%)
No rating	133 (59.9%)	90 (70.3%)
Details of the assistance		
Dressing	49 (22.1%)	38 (29.7%)
Surgery	17 (7.7%)	5 (3.9%)
Drug administration	48 (21.6%)	23 (18.0%)
Dressing + Drug adm.	70 (31.5%)	53 (41.4%)
Hospitalization	1 (0.5%)	2 (1.6%)
Others	8 (3.6%)	-
No information	29 (13.1%)	7 (5.5%)
Referral		
Hosp. First-aid Post in Porto Alegre	2 (0.9%)	2 (1.6%)
Burned Unit of Rio Grande	3 (1.4%)	1 (0.8%)
Basic Health Unit	16 (7.2%)	11 (8.6%)
Return to PSP	6 (2.7%)	12 (9.4%)
Ophtamology	54 (24.3%)	2 (1.6%)
Others	5 (2.3%)	1 (0.8%)
No information	136 (61.3%)	99 (77.3%)

DISCUSSION

The results found in this study about the place/reason of the accident corroborate those raised in other studies that show the home environment as the main site of accident, followed by the work environment.[5,9,15-6] In the analysis of 211 cases of burns treated at the Clinical Hospital of Ribeirão Preto-SP, it was found that 62% occurred in the home environment and 24.4% in the workplace.[15]

The body regions mostly affected by burns described by several authors are mainly the upper limbs and chest, followed by head, neck and legs.[5,9,15-17] A study[9] conducted with 761 cases of burns in 74 urgency and emergency units of 23 Brazilian capitals showed that 26.6% of men had burns on the upper limbs and 26.4% in the head and neck, and women had more burns in the upper limbs with 34.4%, followed by the lower limbs with 24.1%, meeting the results presented in this research.

With respect to the depth of the burns, these can be classified as first-degree involving only the epidermis and there was no blistering, second degree affecting the epidermis and the dermis with blistering and finally, third degree affecting the epidermis, dermis and deeper body structures, requiring skin grafting.[11] Second-degree burns are the most prevalent, which coincides with this research which showed that first and second degree burns have the highest frequency. These are the ones harming in higher levels of depth, extent, severity and incur increased risk of death and future physical and aesthetic sequelae.[18-20]

In the present study, the main causative agents of burn injuries among men were the contact with hot surfaces (welding accidents) and superheated liquids. Studies[5-7,9,18-9] also show superheated liquids as the more frequent. However, this varies according to gender and occupation.

Regarding seasonality, increased occurrence of assistance for burns in summer and spring was identified. In studies conducted in Brazil, authors have identified more assistances in the fall and summer in the Unit of Burn Treatment of Aracaju (SE), in the spring, in São Paulo[6] and in the fall and spring, in Tubarão, State of Santa Catarina[21] and summer in China.[22] Occurrences such as these can vary between countries, times related to festive seasons and holidays. Still, they may be related to the characteristics of each health service.[20]

In 92.8% of the analyzed records it was not possible to identify the means of transport used by patients to reach the FAP. However, the sheets where this information is clearly stated show that most patients arrived through Mobile Emergency Service. In a study[9] held in emergency services from various regions of Brazil, the authors found that the arrival of most patients was through personal vehicle or SAMU.

The health service where the study was conducted serves users through Home with Assessment and Risk Rating which is a proposal of the Ministry of Health for Urgent and Emergency services. This requires the user to be welcomed by a professional who will listen to his complaints and, by a pre-established clinical protocol, will classify patients according to the risks and not according to the sequence of arrival. Thus, users will be classified according to the colors red (emergency), yellow (urgency), green (non-urgent) and blue (low complexity queries).[10]

It was observed in the present study that most of the assistances provided were classified with yellow and green colors. However, many cases did not have the protocol complete. This may be related to the fact that the studied service does not perform the reception the night shift and weekends, resulting in a significant deficit of this information. It does not portrays the reality of the service. Furthermore, users who come to the First-aid Post through SAMU do not undergo evaluation for risk classification and are sent directly to service.

In the case of the procedures performed, besides the initial emergency care, analgesia and dressing is recommended for the first care to the burnt. This meets the results found in this study[11], where in most cases an indication of analgesics and topical treatment occurred. However, in most of the records was not possible to identify the topical agent of choice.

Referrals after treatment failed to demonstrate the reality of the service, since most of the records did not have the data. The ones that had such information showed evidence of referral to specialized care, return to theurgency department and referral to Basic Health Units.

It is noteworthy that the lack of information in records makes it difficult to conduct a comprehensive and real analysis of the service provided to burned users in this service. An important deficit in the records about the approaches adopted by health professionals responsible for the care is

observed, and much of the information contained were incomplete. Relevant information such as volume replacement, type of dressing, if there was respiratory injury among others, and routing and guidance given to the user , was not identified in the majority of sheets, making it difficult to conduct a more detailed analysis.

In the first care provided to the burned, the Ministry of Health[11,23] recommends that the most severe burns be treated in urgency and emergency departments and after hemodynamic stabilization, the most severe cases should be referred to specialized units to treat the burns. In turn, injuries not considered serious can be cared for in Basic Health Units instead of hospital surgery clinics.

It should be noted that the system of reference and counter-reference ensures the proper functioning of the health system, as well as continued assistance to users providing a better recovery process.[24]

The correct and detailed record of the circumstances in which the burn accident occurred allows the elaboration of an appropriate plan of care for each situation. The evaluation of the information included in the records first care is relevant to identify weaknesses and/or improvement of these records in support of a planning of successful care.

FINAL CONSIDERATIONS

This study made it possible to observe that the characteristics of occurrences of burns in an urgency and emergency service in southern Rio Grande do Sul showed no differences from other studies conducted in Brazil and worldwide. Men aged between 18 and 45 years accounted for 49.5% of the study sample, and the work environment was the most frequent place of occurrence with 6.8% of cases, followed by the domestic environment, with 5.4%. In the case of the affected region, the head and neck (43.7%) and upper limbs (41.4%) were the most prevalent. As for the causal agent of burning the superheated liquid and hot surfaces were the most frequent, showing 42.2% and 25.2%, respectively.

The study emphasizes the importance of actions that may improve the knowledge of professionals about the care provided to burned victims and also promote, along with the population, actions aimed at health education activities both for caring and preventing new accidents. It should be noted that the First-aid Post, site of this study, is a reference in service to many cities in the South of Rio Grande do Sul, which makes it even more relevant because this reflects a history of populations that have different cultures and characteristics.

The constant lack of records in the sheets of service performed is a great hindrance to the analysis of information. This suggests the need for awareness, from the part of professional, of the importance of accurate records for a better organization of the health service in order that future studies may reflect more precisely the assistance rates provided in the service.

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