



Demographic and etiologic profiles of patients hospitalized in a reference center for burn treatment in Mato Grosso do Sul

Perfil sociodemográfico e etiológico de pacientes internados em um centro de referência para tratamento de queimados em Mato Grosso do Sul

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■ ABSTRACT

Introduction: The present study addressed the issue of hospitalization in 13 patients, children and adolescents, specifically focusing on burn patients admitted to a center for burn treatment. The objective of this study was to observe and analyze the perception of those involved in the treatment process in order to understand the relationship of the patient with pain and the treatment process with the quality of life in the hospital environment and with their self-image, and to collect information on the importance of prophylactic treatment on thermal trauma. **Methods:** To meet the objectives of the research, we used the case study method with a qualitative approach. **Results:** The results showed that most of the patients were male. The predominant etiologic agent was ethanol. The accidents caused burns of various severities, first- and second-degree burns in 1 patient, second- and third-degree burns in 7 patients, and third-degree burns in 5 patients. The length of hospitalization ranged from 15 to 75 days. The ages of the patients ranged from 1 year 8 months to 18 years. As to education, with the exception of the youngest patient, all attended the school network. Regarding socioeconomic level, most had a family income of up to 2 minimum wages, which was not sufficient. In general, only one person worked per family. **Conclusions:** The results demonstrate the need to provide guidance to parents, with educational programs and campaigns.

Keywords: Burns; Pain; Hospitalization; Quality of life; Accident prevention; Child; Adolescent.

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■ RESUMO

Introdução: O presente estudo abordou a questão da hospitalização de 13 pacientes, crianças e adolescentes, enfocando especificamente o paciente queimado internado em um Centro de Tratamento de Queimaduras. O objetivo foi o de observar e analisar a percepção dos envolvidos no processo de tratamento, para compreender a relação desse paciente com a dor, com o processo de tratamento, com a qualidade de vida no ambiente hospitalar e com sua autoimagem. Levantar informações que revelem a importância de um trabalho profilático do trauma térmico.

Método: Para atender os objetivos da pesquisa, foi utilizado o método de investigação de Estudo de Caso com abordagem qualitativa. **Resultados:** Os resultados apontaram uma maioria dos pacientes do sexo masculino. O agente etiológico predominante foi o etanol. Os acidentes causaram queimaduras de gravidades diversas, sendo 1 de 1º e 2º graus, 7 de 2º e 3º graus e 5 de 3º grau. O tempo de internação variou de 15 a 75 dias. As idades dos pacientes variaram entre 1 ano e oito meses a 18 anos. Quanto à escolarização, com exceção do paciente mais novo, todos frequentavam a rede de ensino. Quanto ao nível socioeconômico, a maioria tem uma renda familiar de até dois salários mínimos, que não são suficientes. De modo geral, encontra-se apenas uma pessoa trabalhando, por família. **Conclusões:** Os resultados pesquisados demonstram a necessidade de orientação aos pais, com programas educativos e campanhas de prevenção.

Descritores: Queimaduras; Dor; Hospitalização; Qualidade de vida; Prevenção de acidentes; Criança; Adolescente.

INTRODUCTION

Over the past 16 years, while working with children and adolescents in psychopedagogical care in the Center of Burn Treatment, we have sought to understand the patient-victims of heat trauma, including their perspective of their existence and their way of life, as reflected in their speech, emotions, affections, desires, and aspirations.

During psychopedagogical activities related to the curricular framework, school content, painting, drama, musicalization, and recreational and reasoning games are assessed on the computer.

The interweaving of psychological and somatic factors is responsible for various problems. Burn subjects need to reshape these factors, rediscover (reencounter) their tangible selves and identities, and release their inner beings with a range of emotions, feelings, aspirations, and desires in order to promote their cognitive development.

The medical team, upon understanding the importance of this work as a contribution to patients' good quality of life, should consult a psychopedagogy

professional the Center for Burn Treatment of this hospital, regarding the protocol for the care of such patients.

The present study addressed the issue of infant and juvenile hospitalization, specifically focusing on burn patients hospitalized in the Center of Burn Treatment.

Considering the body as an object of learning and emotions, and the discovery of joy, pleasure, feeling, affectivity, and creativity, the present authors conducted this study from an existential perspective, valuing the culture that patients bring and reporting cases that they experienced.

Thermal trauma is the damage caused by the exposure of the human body to extreme thermal, chemical, and electrical or similar agents. It is the main cause of death among people aged 0 to 35 years in the United States.

Injuries caused by burns are traumatic events that affect about 1% of the population of the country every year, half of whom are children and adolescents¹.

According to data from the National Burn Information Exchange, burns are the third most

common cause of accidental death in all age groups and about 70,000 people are hospitalized each year because of serious injuries caused by thermal trauma².

In Brazil, health statistics does not have comprehensive data on thermal trauma that allow for the assessment of the number of accidents and hospitalizations³.

According to data from the International Society for Burn Injuries, burns are responsible for approximately 322,000 deaths in 2002, with the largest contingent of deaths found among children, in the age group of up to 5 years, and in the elderly, in the age group older than 70 years. However, the Society itself stated that these are only numbers of reported cases and are not representative of the current situation and thus of global reality².

According to these data, for the Brazilian population, which is estimated at 200,000,000 people, although reliable national health statistics are not yet available, it can be inferred that the current number of burn patients in Brazil reaches 2,000,000 (1% of the total) every year, of whom 1,000,000 (50% of the total) are children and adolescents⁴.

Based on worldwide data, the number of cases of large burns, those that affect more than one-seventh of body surface and requires hospitalization, is estimated at about 600,000 (60% of total cases), including the impressive estimate of 300,000 children and adolescents with serious burns each year⁵.

In addition, in epidemiological studies, in accordance with the French National Health Statistics and Research Institute, the mortality rate of burn victims is high and increases according to patient age. Among children and adolescents, the mortality rate is higher. The circumstances of accidents are caused by the lack of care and information on prevention⁶.

Data collected from various hospital centers and supplied by the American Society of Burns show an estimate of 500,000 cases of injuries per year that received medical treatment in the United States. Of these cases, 40,000 required hospitalization, with mortality in approximately 4,000 patients, who were mostly victims of residential accidents. In Brazil, despite the lack of an effective centralized information system, it these values are estimated to be even higher.

Thermal trauma requires the longest treatment and is considered to be the most difficult to recover from, demanding a higher material and human cost from society. Prevention, however, raises the least attention, from media, governmental entities, or even social organizations, except in times of great national upheavals⁷.

Thermal trauma is a disease of society, of economic and sociocultural contexts that facilitate

and, sometimes, even promote it. The cure of a disease of this kind necessitates action of administrators and politicians, but it is the responsibility of the entire society⁸.

Thus, victims of burns live with sequelae that can decrease their self-image and quality of life, such as in the case of facial burns. Because these individuals tend to be excluded socially and professionally, they often opt for plastic surgery to improve the quality of their skin and thus their appearance.

The prevention of trauma, particularly by burns in children and adolescents, is an issue for society as a whole. It is an issue that should involve the government and actions that range from advertising campaigns to the quantitative and qualitative increases in the number of care teams, through the increase in specific funds for the care of patients with this type of disease; health professionals, by means of information campaigns in the media and with the patients' families; and education professionals, by inclusion of the concerns with the theme in their curricula.

OBJECTIVES

To determine the sociodemographic and etiologic profiles of patients admitted to a center for burn treatment. To observe and analyze the perception of those involved in the treatment process. To understand the relationship between the patients with pain and the treatment process, quality of life in the hospital environment, and patients' self-image. To gather information that reveals the importance of prophylactic prevention of thermal trauma.

METHODS

The research was developed in a reference hospital in Campo Grande, Mato Grosso do Sul, and conducted from August 2012 to September 2013 among patients hospitalized in a center for burn treatment.

The study met the Guidelines and Regulations for Research Involving Human Beings, provided for in Resolution no. 466 of 12/12/12, of the National Health Council of the Ministry of Health. The study was also registered in Plataforma Brazil and obtained authorization from the Ethics Committee for Research of the *Universidade Federal de Mato Grosso do Sul*. Subsequently, the study was authorized by the ethics committee of the hospital, in accordance with the legislation in force.

Thirteen hospitalized patients of both sexes, children and adolescents aged between 1 year 8 months and 18 years, from the state of Mato Grosso do Sul were surveyed. Individuals of indigenous ethnicity were excluded from this study.

After invitation and acceptance to be part of this study, the hospitalized children and adolescents' guardians signed a statement of informed consent.

The research instruments adapted by the researcher was the Basic Demographic Census Questionnaire of 2010, of the Brazilian Institute of Geography and Statistics, which contains data identifying the family of patients, such as sex, age, education, marital status, occupation, number of children, place of residence, income, and other relevant data for this study.

The other instrument used was the Subject Protocol Document, which indicated data such as name, age, education, trauma date, type of burn, degree of burn, time of hospitalization, etiology, and medical prognosis on the recovery.

An unstructured (open-ended) interview that sought to obtain information about the perception of the patients and their caregivers during the treatment was also used.

The research method used was the case study. A case study is based on empirical research, planning, data collection, and analysis. The field research met the needs of the study to describe the objectives, and record, analyze, interpret, and correlate data. This type of research is called the formal case study, which aims to form decisions and propose transformative actions⁹. In the context of this study, the case study related what is common in each case, although each one has specific characteristics.

RESULTS

Of the 13 study subjects, 9 were male and 4 were female. The ages ranged from 1 year 8 months to 18 years among the males and from 6 to 18 years among the females.

Most of the subjects were enrolled in regular schools, and only one was enrolled in the Early Childhood Education Center. Of the 7 male patients, only one was in the second stage of basic education.

Two female patients were in the first phase of basic education, one was in the second phase, and another was in university.

Only 1 male subject was out of the school network.

In relation to the etiological agent, only 1 subject had a burn injury caused by hot coals. The causative agent was ethanol in 4 patients, electricity in 2, alcohol at 46°C in 2, gasoline in 2, and kerosene in 2. Seven patients had second- and third-degree burns, 5 had third-degree burns, and only 1 had first and second-degree burns combined.

The shortest recorded length of hospital stay was 15 days in 1 patient and 20 days in another patient,

followed by 25 days in 2 patients, 32 days in 1 patient, 35 days in 1 patient, 43 days in 1 patient, 45 days in 2 patients, 60 days in 3 patients, and 75 days in 1 patient.

With regard to the socioeconomic level of the families financially responsible for the patients, only 2 employed male relatives were recorded, 2 mothers were day workers, and 8 male guardians were independent professionals.

Seven families stated that their income was not sufficient, and only 4 families stated it was sufficient. Five guardians lived in the city of Campo Grande, and 7 were from interior cities. Four families lived in their own house.

Another 4 families lived in rented houses, 2 families lived in a borrowed house, 1 family lived in a settlement, and 1 family lived with grandparents.

As to the question concerning religion, 7 families reported being Catholic and 5 reported attending evangelical churches.

Regarding marital status, 2 families depended on the mother alone, 4 families were of a civil marriage, and 6 were of a stable union.

All of the guardians were educated up to the first phase of primary school.

The 11 residences had garbage collected, while only one burns garbage. Six houses have sewage system, and 6 use aseptic fossa. All 12 homes have a private bathroom. Only one home does not have electricity.

DISCUSSION

A burn is considered a pathological risk factor, having been included in the list of diseases that have a high rate of morbidity and mortality.

Few diseases are recognized as painful, and the burn patient is included in this group.¹⁰ It was mentioned earlier that the situation of patients with large burns is extremely stressful, causing a series of risks to their mental health. Frequently, burns occur owing to lack of care and knowledge on the part of those who deal with dangerous environments and/or products¹¹.

Individuals of the male sex are the most frequently affected, but we cannot provide definitive conclusions about this observation, as the data presented were results of a single study.

In the literature reviewed, similar results were observed, in which male children older than 5 years are more affected by this injury¹¹. Owing to the poor socioeconomic situation of a large part of the population of our country, we find children having easy access to hazardous materials stored around the house, thus facilitating the large incidence of cases of injuries due to burns.

Regarding the fact that males are more numerous than females in this study, it is also common in studies conducted in Brazil and several other countries^{12,13}.

This is attributed to the fact that boys play more risky games and, therefore, have a greater predisposition toward causative agents of burns¹⁴.

The number of female patients was much lower, which is in agreement with the findings of other studies^{3,15}.

Adolescents of both sexes have faced difficulty in regaining their social life, projecting their future as a "social death," as young people tend to be narcissistic¹⁶.

Regarding their origin, the greater number of patients came from other localities in the state and were considered as having major burns or burns of greater severity.

In relation to the causal agent, the results obtained give importance to an analysis of the etiology of burns for an awareness that prevention is the best approach.

In the present study, the most common causative agent of burns was alcohol fuel and is a reference causal agent in some studies¹⁷.

Previously, liquid alcohol at 46°C was used by people in day-to-day household cleaning or to ignite fires. Currently, ethanol is being used instead, which according to the families, is a stronger agent for lightening clothes and roasting steaks. Regarding the 4 patients who had flame burns, the family stored and used ethanol for these domestic practices.

Resolution RDC, no. 465, of 2002 by the National Health Surveillance Agency resulted in the replacement of 46°C liquid alcohol with gel. The number of burn cases caused by alcohol decreased by around 60% in several hospitals in the country.

In the case of the area affected by the lesion, most patients had burns in the arms, legs, feet, genitals, abdomen, and face.

As to the degree of burns, 7 patients had second- and third-degree burns, followed by 5 patients with third-degree burns and only one with first and second-degree burns combined.

The fact that most of the cases were second- and third-degree burns corroborates some studies¹⁸. The histological evaluation using biopsy samples in the first 48 hours of an accident predicted that injuries could recover in 2 weeks, with 75% positivity rate¹⁹. This study contributes to a better patient quality of life during hospitalization, reducing patients' anxiety.

Reassessment of the injury at 72 hours is also important, as a second-degree superficial burn can worsen or even evolve to a third-degree burn¹⁹.

Regarding the time of hospitalization, only 1 patient was hospitalized for 15 days; 2, for 25 days; 1,

for 20 days; 1, for 32 days; 1, for 35 days; 1, for 43 days; 2, for 45 days; 3, for 60 days; and 1, for 75 days.

Through the passing of time, the patient acquires security and assurance about their hospitalization²⁰. The patients who felt hospitalized as citizens (owner of their rights) had good quality of life.²¹ Prolonged hospitalization leads patients to feel more prepared and more energetic²¹.

Long hospitalization allows individuals to have more time to reflect on their existence, helping them to organize plans for their future and maintain confidence in their recovery²².

As to the socioeconomic level of the family members of these patients, most had a family income of up to 2 minimum wages, as they were self-employed professionals. Thus, their earnings were not enough because in most cases, they have 6 to 8 people who depend on them. Some heads of the family received benefits from grants from the federal government. In general, only 1 person in the family works.

Only 2 families had recorded employment, 2 mothers were daytime laborers, and 9 independent workers. Only 2 families had registered employment.

In relation to housing, 4 lived in a rented house; 4, in their own homes; and 2, in a borrowed home; 1, in a settlement; and 1, with grandparents, without rental expenses.

Regarding marital status, 2 families depended on the mother only, as the parents were separated. Four families were of a civil marriage, and 6 were of a stable union.

All of the guardians were educated up to the first phase of primary school.

In relation to care from philanthropic institutions, as a rule, they admit persons of low income and low schooling²³.

In general, garbage was collected from homes but burned in only one house. Six residences had a sewage system, and one had a septic tank. All of the houses had an internal bathroom, and 11 had electricity but had one had none.

The information provided regarding religion (7 stated being Catholics and 5 stated being evangelical) indicated that the spiritual dimension was of paramount importance to patients and family members, considering the fact that the quality of life during hospitalization is influenced by their beliefs and values²⁴.

Quality of life is a harmonious balance of achievements at all levels of health, work, leisure, family, and even spiritual development²³.

The medical prognoses of good recovery seem to influence the quality of life of the population studied. In studies on the psychological implications in

hospitalized patients, the perception of well-being or malaise seems to contribute to the biological evolution of the disease and could be used as a therapeutic cofactor, suggesting that the role of psychology seems to have contributed to the improved quality of life of the hospitalized patients²⁵.

The perception that the patient had good quality of life during hospitalization led to reduced treatment time, hospitalization time, faster healing, and collateral problems²⁵.

At each moment, the perceptual field of the patients was completed by reflections, with the aim of changing the structure of their conscience and leading them to recognize the world as a field of thoughts and perceptions²⁶.

What sensitizes the Center for Burn Treatment team throughout their work is the feeling of emotional charge that accompanies the relationship of hospitalized children and adolescents, and their burn injuries. We are literally permeated by the emotions of joy and sorrow, frustration and fulfillment, and discouragement and enthusiasm that arise in response to different proposals. This experience allows us to live multiple polydimensional roles, more sure of the pleasure and affection in being able to help.

We believe that careful, decided, and friendly work can help somewhat, if not substantially, in softening in some way these painful time of a child or adolescent who, for some reason, had to go through the serious experience of being admitted to a center for burn treatment.

CONCLUSION

The study shows that ethanol is the main cause of flame burns. The most affected population came from families living in the interior of the state, whose guardians had little schooling.

Continuous population education is important in ensuring that families are aware that the use of flammable products in homes should be avoided.

We found that thermal trauma is a much more sociocultural rather than medical problem, hence the importance of a prophylactic work in the prevention of burns because this is a public health problem.

The effective participation of the media, government institutions, schools, non-government organizations, and others is suggested.

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