ORIGINAL ARTICLE

STAY AND OUTCOME OF THE CLINICAL AND SURGICAL PATIENT IN THE EMERGENCY SERVICE

PERMANÊNCIA E DESFECHO DO PACIENTE CLÍNICO E CIRÚRGICO NO SERVIÇO DE EMERGÊNCIA

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ABSTRACT

Objective: to check the length of stay and outcome of adult, clinical and surgical, patients in an emergency unit. Method: this is a descriptive retrospective, quantitative, study conducted in an emergency unit of a school hospital in São José do Rio Preto, São Paulo, Brazil. We used an instrument developed having electronic medical records of the institution as a basis, within the period from 01/01/2008 to 12/31/2008. The study was approved by the Research Ethics Committee of Faculdade de Medicina de São José do Rio Preto (FAMERP), under the Opinion 180/2009. Results: 55.19% of patients were admitted for surgical reasons, primarily related to the General Medicine, Orthopedics, and General Surgery; 88.97% of patients were white, of the age group ≥ 60 years, and female. Regarding the length of stay, 7,585 patients (78.57%) had 0 to 5 days 1,328 (13.76%) 6 to 10 days, 403 (4.17%) 11 to 15 days, 185 (1.92 %) 16 to 20 days, and 153 (1.58%) ≥ 21 days. Conclusion: we found out that the search for emergency services has increased, however, the structure of these services is still not enough to meet the demand. Descriptors: Emergency Medical Services; Health Profile; Emergency Nursing.

RESUMO

Objetivo: verificar o tempo de permanência e o desfecho dos pacientes adultos, clínicos e cirúrgicos, em uma unidade de emergência. Método: trata-se de estudo descritivo retrospectivo, quantitativo, desenvolvido em uma unidade de emergência de um hospital escola em São José do Rio Preto (SP). Foi utilizado um instrumento desenvolvido com base em prontuários eletrônicos da instituição, no período de 01/01/2008 a 31/12/2008. O estudo foi aprovado pelo Comitê de Ética em Pesquisa da Faculdade de Medicina de São José do Rio Preto (Famerp), sob o Parecer n. 180/2009. Resultados: 55,19% dos pacientes foram admitidos por motivos cirúrgicos, relacionados principalmente à Clínica Médica, Ortopedia e Cirurgia Geral; 88,97% dos pacientes eram brancos, da faixa etária ≥ 60 anos e do gênero feminino. Em relação ao tempo de permanência, 7,585 pacientes (78,57%) apresentaram de 0 a 5 dias, 1,328 (13,76%) 6 a 10 dias, 403 (4,17%) 11 a 15 dias, 185 (1,92%) 16 a 20 dias e 153 (1,58%) ≥ 21 dias. Conclusão: constatou-se que a busca pelos serviços de emergência vem aumentando, entretanto, a estrutura desses serviços ainda não é suficiente para suprir a demanda. Descriptores: Serviços Médicos de Emergência; Perfil de Saúde; Enfermagem em Emergência.

Resumen

Objetivo: verificar el tiempo de permanencia y el desenlace de los pacientes adultos, clínicos y quirúrgicos, en una unidad de emergencia. Método: esto es un estudio descriptivo retrospectivo, cuantitativo, desarrollado en una unidad de emergencia de un hospital escuela en São José do Rio Preto, São Paulo, Brasil. Fue utilizado un instrumento desarrollado con base en prontuarios electrónicos de la institución, en el periodo de 01/01/2008 a 31/12/2008. El estudio fue aprobado por el Comité de Ética en Investigación de la Faculdade de Medicina de São José do Rio Preto (Famerp), bajo la Opinión 180/2009. Resultados: el 55,19% de los pacientes fueron admitidos por razones quirúrgicas, principalmente relacionadas con la Clínica Médica, Ortopedia y Cirugía General; 88,97% de los pacientes eran blancos, de la franja etaria ≥ 60 años y del gênero femenino. Con relación al tiempo de permanencia, 7,585 pacientes (78,57%) tenían de 0 a 5 días 1,328 (13,76%) 6 a 10 días, 403 (4,17%) 11 a 15 días, 185 (1,92%) 16 a 20 días y 153 (1,58%) ≥ 21 días. Conclusión: se constató que la búsqueda de los servicios de emergencia es cada vez mayor, sin embargo, la estructura de estos servicios aún no es suficiente para satisfacer la demanda. Descriptores: Servicios Médicos de Emergencia; Perfil de Salud; Enfermería en Emergencia.

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INTRODUCTION

The services provided in the emergency units are related to the development level and the organization of society, the demographic and cultural aspects, the governmental structure and resources.1 Faced with the numerous care models available, reassessment became constant and needed.2,1 To plan assistance in urgency and emergency situations, there is a need to know what happened, the condition severity and the person who will be cared for, what will be the time to provide this care and the patient’s destination.1,4

Thus, we chose to conduct an exploratory research, aiming to check the length of stay and the outcome of the adult patients, clinical and surgical, treated in an emergency unit.

METHOD

This is a retrospective descriptive, quantitative, study conducted in an emergency unit of a school hospital in São José do Rio Preto (SP). The hospital is large, having a tertiary and quaternary level and structure to offer 720 beds. The referenced emergency unit (REU) provides, on average, 5 thousand treatments per month, and it has two sectors: clinical emergency and surgical emergency, and it also provides care for the patients waiting for inpatient beds.

The sample consisted of 9,654 medical records of patients treated at the REU, within the period from January 1 to December 31, 2008. For constituting the sample, we conducted an analysis of the electronic medical records of the institution, totaling an average of 804 medical records per month. Data collection was conducted by means of an instrument developed having data from the electronic medical records of the institution as a basis.

The instrument contains data which enable the identification and sociodemographic characterization of the population. It comprises the following items: questionnaire number, date of completion, hospital registration number, age, sex, and race. To identify the profile of care, the following questions were included: type of care (clinical/surgical), date of admission, length of hospital stay, and patient’s destination.

We completed a database using the spreadsheet of the software Microsoft Excel, following the sequence of accesses to the electronic medical records. The results were expressed through tables and percentage values. Statistical tests of association were applied through the evaluation of the chi-square test, adopting a significance level of 0.05.

The study was carried out after approval by the Research Ethics Committee of Faculdade de Medicina de São José do Rio Preto (Opinion 180/2009).

RESULTS

The results of this study are based on the analysis of 9,654 medical records of patients treated at two sectors of a teaching hospital in São José do Rio Preto, with 2,164 (22.42%) medical records for the emergency care sector and 7,490 (77.58%) records for the emergency sector. Out of this total, 5,328 (55.19%) patients were admitted for surgical reasons and 4,326 (44.81%) were admitted for clinical reasons, out of these, 376 (3.89%) evolved to death.

The results show a prevalence of female patients (54.79%); there was a higher frequency of patients of the age groups ≥ 60 years (23.57%) and from 20 to 29 years (23.46%), and the white race (88.97%) predominated among the patients under evaluation. Regarding the length of hospital stay in the sector: 7,585 patients (78.57%) stayed from 0 to 5 days, 1,328 (13.76%) from 6 to 10 days, 403 (4.17%) from 11 to 15 days, 185 (1.92%) from 16 to 20 days, and 153 (1.58%) for ≥ 21 days.

The reasons for hospitalization showing the highest prevalence were evaluated and divided with regard to the specialization. Out of the total of 9,622 cases, considering that 32 were not addressed, 2,539 (26.39%) were related to General Practice, 2,367 (24.60%) to Orthopedics, 1,724 (17.92%) to General Surgery, 777 (8.08%) to Neurology, 660 (6.86%) to Gynecology and Obstetrics, 529 (5.50%) to Cardiology, 447 (4.65%) to Pulmonology, 290 (3.01%) for Urology, 191 (1.99%) to Nephrology, and 98 (1.02%) to Dermatology. This percentage distribution shows that most patients were hospitalized for reasons related to General Practice, Orthopedics, and General Surgery.

The reasons for hospitalization were divided into two groups: surgical and clinical. This variable was associated to the other variables with sample characterization, in order to check some kind of influence in determining the admission of patients. Table 1 shows the percentage of association between reasons for hospitalization and the patients’ gender.

English/Portuguese
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The results of Table 1 suggest a statistically significant association (P < 0.001), showing that female patients presented, more frequently, a clinical reason for hospitalization (50.80%), however, most of the male patients presented a hospitalization due to surgical needs (62.45%). In general, there was a higher hospitalization of female patients (54.79%), and the surgical reasons (55.19%) were the most frequent with regard to the clinical reasons (44.81%).

The results shown in Table 2 assume a significant association (P < 0.001) between the reasons for hospitalization and the age group, and patients ≥ 60 years had a prevalence of hospitalization for medical reasons (53.01%), while patients of the other age groups showed hospitalization due to surgical reasons. We may indicate that the older the patient, the higher the percentage related to the clinical reasons and, as a consequence, the lower the frequency of hospitalization for surgical reasons.

We found out a significant association between the reasons for hospitalization and race (P = 0.024). This association was determined by the fact that most mulatto patients present reasons related to the clinical condition (50.35%), whereas for patients of the other races under evaluation there was a prevalence of the surgical condition.

The results related to the association between reasons for hospitalization and length of hospital stay are shown in Table 3.

The significant association observed in the results of Table 3 (P < 0.001) indicates that patients with shorter hospital stay had reasons with a surgical nature, whereas patients with longer hospital stay had clinical reasons.

Table 4. Percentage distribution of reasons for hospitalization with regard to destination. São José do Rio Preto (SP), 2012.

<table>
<thead>
<tr>
<th>Patient destinations</th>
<th>Reason for hospitalization</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>By request</td>
<td>Surgical</td>
<td>13 (59.09%)</td>
</tr>
<tr>
<td></td>
<td>Clinical</td>
<td>9 (40.91%)</td>
</tr>
<tr>
<td>Medical discharge</td>
<td>Surgical</td>
<td>5,163 (56.03%)</td>
</tr>
<tr>
<td></td>
<td>Clinical</td>
<td>4,051 (43.97%)</td>
</tr>
<tr>
<td>Death</td>
<td>Surgical</td>
<td>129 (34.31%)</td>
</tr>
<tr>
<td></td>
<td>Clinical</td>
<td>247 (65.69%)</td>
</tr>
<tr>
<td>By evasion</td>
<td>Surgical</td>
<td>12 (48.00%)</td>
</tr>
<tr>
<td></td>
<td>Clinical</td>
<td>13 (52.00%)</td>
</tr>
<tr>
<td>Transferred to another hospital</td>
<td>Surgical</td>
<td>11 (64.71%)</td>
</tr>
<tr>
<td></td>
<td>Clinical</td>
<td>6 (35.29%)</td>
</tr>
<tr>
<td>Total</td>
<td>Surgical</td>
<td>5,328 (55.19%)</td>
</tr>
<tr>
<td></td>
<td>Clinical</td>
<td>4,326 (44.81%)</td>
</tr>
<tr>
<td>P value</td>
<td></td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>
We may indicate a significant association \( (P < 0.001) \) between the reasons for hospitalization and the outcome of patients evaluated in the study, since the association is due to the fact that most patients who evolved to death were hospitalized for medical reasons, whereas the patients discharged from hospital were hospitalized for surgical reasons. Furthermore, it is important to highlight that most patients who were transferred to other hospital units were hospitalized for surgical reasons (64.71%).

The results suggested a lack of association between the reasons for hospitalization and the sector \( (P = 0.471) \), i.e., the sector where the patient was hospitalized is not related to the reason why she/he was hospitalized. In both reasons for hospitalization there was a higher percentage related to the sector REU.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Gender</th>
<th>Age group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of stay</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Patient outcome</td>
<td>0.001</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>

All associations showed to be significant, and, in general, the female patients had shorter hospital stays (56.69%) when compared to male patients (43.31%). Moreover, patients from 20 to 29 years had shorter length of stay (26.70%) when compared to the patients of other age groups, and patients \( \geq 60 \) years (44.08%) stood out, who, in turn, showed the highest lengths of stay in the hospital units.

Furthermore, with regard to the outcome of patients, women had a higher frequency of hospital discharge (55.24%) when compared to men (44.76%) and the highest percentage of deaths was related to males (55.9%). Regarding the age group, it was found out that patients from 20 to 29 years (young) had a higher frequency of hospital discharge (24.19%), when compared to patients of the other age groups, while patients \( \geq 60 \) years (elderly people) showed a higher percentage of death (74.73%).

**DISCUSSION**

In Brazil, health information, provided by DataSUS, does not allow identifying the profile of urgency/emergency care in the various medical specialties; however, we may identify the hospitalization profile.\(^5\) In 2011, there were 11,629,986 hospital admissions; clinical reasons accounted for 4,073,697 admissions, followed by surgical reasons, with 3,363,381.\(^6\)

Regarding the other specialties, we observed that there were fewer hospital admissions. Contrary to the Brazilian reality and to some authors\(^7\)-\(^12\), in this study, hospital admissions for surgical reasons accounted for the highest demand of care.

The sex distribution of patients treated in this unit showed the same profile of the population in São José do Rio Preto\(^13\), where 51.98% of the municipal population correspond to women and 48.02% to man, and other national studies corroborate these findings.\(^13\)-\(^14\)-\(^17\) It is possible that the outcome is related to biological, social, and behavioral factors, translated into the fact that women show higher morbidity indicators than those related to the male population.\(^18\) Whereas the male demand for outpatient services is mostly described by illness reasons, the female demand shows to be essentially voluntary, revealing a higher likeness of women to seek preventative health care in a spontaneous way.\(^19\)

In addition to the aspects related to gender, it is believed that the analysis of treatments, according to the age group, allows identifying the groups vulnerable to certain health problems, favoring the adoption of specific measures.\(^5\)

In this study, we found out that 67.31% of treatments were provided to patients of the age group from 20 to 59 years. This is an adult population enjoying full productive life, for which illness directly affects the family structure. Another fact which stands out in the results of this study is the number of treatments to patients in the age group \( \geq 60 \) years.

According to data from IBGE\(^20\), the highest concentration of the population is still in the age group between 10 and 19 years, representing 32.8% of the total. However, comparing this information with data for 1999, it is observed that there was a decrease in the young population (7.3%) and an increase in the elderly population \( \geq 70 \) years (1.2%).

Due to the decreased child mortality and fertility rate, population aging is a reality since the end of the last century. Simultaneously, the aging process directly reflects on the consumption of health care services, since the elderly people require four times more hospitalization admissions when compared to the average population.\(^21\) Furthermore, the specificities of clinical conditions among this population frequently need more complex and expensive health services. The Americas, in general, are...
undergoing an epidemiological transition process, especially with regard to the increased incidence of non-communicable chronic diseases.22

In Brazil, 72% of deaths are caused by some of these problems, corresponding to 742,779 victims per year: 43% of deaths are caused by cardiovascular diseases, 22.6% by cancer, 8% by chronic respiratory problems, and 6.9% by diabetes.23 The incidence of health problems has specific characteristics for each age group. Young people and adults, especially males, have a high mortality rate due to accidents and violence acts, while the elderly people are especially affected by the aforementioned pathologies.24

The incidence of diseases has also varied according to gender. The cardiovascular diseases are the leading cause of death for both sexes; as the second cause we find out for males the external causes and for females neoplasms; and, thirdly, for men there are neoplasms and for women there are diseases of the respiratory tract.25

In order to analyze the trends of participation with regard to the admissions by group of diseases, the respiratory diseases were the leading cause of hospitalization, followed by cardiovascular, infectious, and external causes, as well as neoplasms.26 This study did not check the medical diagnoses attributed to care; however, this information justified numerous findings of this study, including gender and age group. Thus, we conclude that information with regard to the age group corroborate the current literature.2,5,8,9,12,13,15-18

Regarding the race of patients, the results found are similar to other studies, where 97.1% of patients were white.27,28 However, there was inconsistency with the data found in another study, where the predominant sample consisted of black individuals, amounting to 49.5%.29

Analyzing the reasons for admission, with regard to the specialization, the General Practice had the highest provision of care (24.60%), followed by the Orthopedics sector (17.92%) and General Surgery (8.08%). Similar results were found in the literature.3,13,15

The length of stay showed a significant variation, from 0 to ≥ 21 days, however, those hospitalized for a short length of time predominated (0 to 5 days). This finding corroborates another study, where patients remained hospitalized, on average, for 54 hours. Despite the agreement, there is a lack of literature addressing the subject, leading to impossibility to draw a relation between the study data and other researches.

Regarding the outcome of care, most individuals were conducted to other units in the same hospital and the surgical clinic was that receiving the highest number of these patients. As for the hospital outcome, the number of deaths was small, but significant in males. However, elderly patients had a higher percentage of deaths.

This conflicting phenomenon as a whole is announced by the, previously mentioned, epidemiological transition to which contribute external causes and non-communicable chronic diseases.30

Through the data obtained in this study and through the results found in other studies, it is believed that the scenarios of care for emergency/urgency cases in the public services in Brazil, perhaps, are not prepared and/or adapted to the current epidemiological transition and they still face many difficulties. There is a need for higher investment, regardless of the realm (federal, state, or municipal), in order to provide an adequate care for the population which uses the urgency and emergency public services in this country.

CONCLUSION

We found out that 55.19% of patients were admitted for surgical reasons and women were prevalent; 88.97% of patients were white, which a higher frequency in the age group ≥ 60 years. Around 3/4 of patients remained in the institution up to 5 days. Out of the total cases, the prevalence was related to General Practice, Orthopedics, and General Surgery.

The search for urgency/emergency services has increased in recent years, however, the increased structuring of these services is still not enough to meet all the demand.

The change in the sociodemographic and age profile of the Brazilian population leads to increased demand for health services. It is worth highlighting that non-communicable chronic diseases and external causes constitute a significant reason to search for care in the urgency/emergency hospital services.

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