ABSTRACT
Objective: Identify clinical and sociodemographic characteristics of patients treated in the intensive care unit. Method: Descriptive documentary study of retrospective and quantitative nature. The study population consisted of 479 patients admitted to the ICU of an urgent and emergency care teaching hospital from January 1st to December 31st, 2009. Data were collected at the Medical Data Processing Center of the institution and analyzed using descriptive statistics. The research proposal was approved by the Ethics Committee of the institution under protocol no. 6887/2009. Results: Male patients (64.9%), aged 40-49 years (20.1%) hospitalized for 1 to 10 days in the ICU (62.9%) and presenting respiratory and circulatory diseases were prevalent. Conclusion: Given the relationship between patient dependency and nursing workload, effective knowledge of the patients assisted enables an evaluation of their implications for the unit's nursing team.

Descriptors: Intensive Care Units; Nursing Staff, Hospital; Workload.

RESUMO
Objetivo: Identificar as características clínicas e sociodemográficas de pacientes atendidos em unidade de terapia intensiva. Método: estudo documental descritivo, de natureza retrospectiva e quantitativa. A população consistiu-se de 479 pacientes internados na UTI de um hospital de ensino de atendimento de urgência e emergência, no período de 1º de janeiro a 31 de dezembro de 2009. Os dados foram coletados do Centro de Processamento de Dados Médicos da instituição e analisados pela estatística descritiva. O projeto foi aprovado pelo Comitê de Ética sob o protocolo nº 6887/2009. Resultados: pacientes do sexo masculino (64,9%), com idade entre 40 e 49 anos (20,1%), internados de 1 a 10 dias na UTI (62,9%) e com doenças do aparelho respiratório e circulatório predominantes. Conclusão: dada a relação entre dependência do paciente e carga de trabalho de enfermagem, o conhecimento efetivo da clientela atendida possibilita avaliar suas implicações para a equipe de enfermagem da unidade. Descritores: Unidades de Terapia Intensiva; Recursos Humanos de Enfermagem no Hospital; Carga de Trabalho.

RESUMEN
Objetivo: identificar características clínicas y sociodemográficas de pacientes atendidos en unidad de terapia intensiva. Método: estudio documental, descriptivo y cuantitativo, de naturaleza retrospectiva y cuantitativa. La población se constituyó de 479 pacientes internados en la UTI de un hospital de enseñanza de atención de urgencias y emergencias, del 1º de enero al 31 de diciembre de 2009. Datos recolectados del Centro de Procesamiento de Datos Médicos de la institución, analizados mediante estadística descriptiva. Proyecto aprobado por Comité de Ética en Investigación, bajo protocolo n° 6887/2009. Resultados: pacientes del sexo masculino (64,9%), edad entre 40 y 49 años (20,1%), internados en UTI de 1 a 10 días (62,9%) y con enfermedades del aparato respiratorio y circulatorio. Conclusión: en razón de la relación entre dependencia del paciente y carga de trabajo de enfermería, el conocimiento efectivo de la población atendida posibilita evaluar las implicaciones del equipo de enfermería de la unidad. Descriptores: Unidades de Cuidados Intensivos; Recursos Humanos; Carga de Trabajo.

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INTRODUCTION

The quality of health services has been a concern for health managers and professionals, especially due to the increased demand with growing costs and limited resources, associated with technological innovations. The goal has been to adopt work processes that reduce costs, enable excellence in the actions developed and increase productivity, ensuring customer safety and satisfaction.¹

The rapid development and application of advanced technologies that enabled diagnostic investigations and complex therapeutics determined the explosive growth of specialized units within health institutions, associated with an increased diversity of critically ill patients. The creation of specific and distinct areas for intensive care over the last decades made the maintenance and recovery of patients with various types of diseases and acute instabilities resulting from them viable.² Therefore, intensive care units (ICU) became highly specialized units that concentrate human and technological resources not generally available in other areas of the hospital, providing a form of assistance considered as the most complex, sophisticated and costly of the health care system.³

A North American study revealed that 14% of the funding allocated to the health services in the country was applied in ICUs, worth highlighting the nursing services of these units, holders of the most significant budget percentage and staff size in most institutions.⁴

The cost of skilled labor nursing is a major source of resource consumption in the ICU; hence the need for proper staff sizing considering patient care demands and targeting the rational use of resources.⁵

Learning the profile of patients who use the service of different healthcare units is the starting point for a correct sizing of workers that can meet the generated demand of nursing care, as well as knowing the implications regarding the costs of care.

Having an adequate nursing personnel, in quantitative and qualitative terms, is an indicator of quality of health services that exert direct influence on clinical care indicators related to nursing care, such as infection rates, falls, medication errors.⁶

Knowing the characteristics of patients admitted to an ICU, demonstrating daily needs for nursing care, allows the identification of the influence of variables such as: patient age, existence of previous diseases, origin of patients and length of stay, which are significant in terms of nursing workload.⁷ Therefore, identifying the sociodemographic and clinical characteristics of the population assisted in an ICU enables the planning and/or creation of assessment and methodology tools for providing qualified nursing care.⁸

OBJECTIVE

- Identify clinical and sociodemographic characteristics of patients treated in intensive care units.

METHODOLOGY

Documentary descriptive study, using a quantitative approach, conducted in the ICU of a public hospital located in the interior of the state of São Paulo. This hospital is considered a reference for high-complexity emergency care, for users of the Brazilian Unified Health System (SUS, as per its acronym in Portuguese).

The studied ICU has 16 beds for the care of critically ill adult patients, aged over 18 years. The study comprised all patients who were hospitalized in this ICU between January 1st and December 31st, 2009.

Data were collected from reports obtained from the database of the Medical Data Processing Center of the Emergency Unit of the Clinics Hospital of the Ribeirão Preto Medical School at the University of São Paulo (HCFMRP-USP, as per its acronym in Portuguese), regarding the medical records of patients admitted in this ICU. The selected variables were gender, age, marital status, schooling, place of origin, unit where the patient came from, length of stay, clinical outcome and clinical diagnoses, according to the International Classification of Diseases in its tenth version. In addition, the number of monthly admissions in the unit in the selected year was identified.

The research project was approved by the Research Ethics Committee of the institution and developed in compliance with the principles of Resolution 196/96 of the Brazilian National Health Council, under process no. 6887/2009.

Data were then collected, digitalized and organized in a database developed for this research, using the Epi Info™ software. The results were analyzed as absolute frequencies and percentages and presented in a table.

RESULTS AND DISCUSSION

In the period selected for this research 479 patients were admitted to the unit, of which 311 were males (64.9%). The results found in
this study, as for the predominance of male patients, resemble those of several studies carried out in general ICUs of public and private hospitals, which relate the profile of hospitalized patients to the demand of the nursing workload. 7,9-12

With regard to the age of the patients, the highest percentage referred to adult patients aged between 40 and 49 years, corresponding to 20.1% of the study population, followed by patients in the range of 17 to 29 years, with 18.4%. Age ranged from 17 to 104 years, with a median of 49 years, and this finding is related to the underlying diseases, since the care is provided to patients in urgency and emergency units. Considering the characteristics of care in this institution, a significant number of young patients admitted to this unit is identified, probably victims of trauma. A Scottish study in a trauma ICU also found a mean patient age of 43 years.13

A significant number of older adults is found if the age groups above 60 years are added up, 154 patients (32%), which is expected, since the aging of the population is a global phenomenon and about one million people turns 60 years old every month around the world.9 Specifically in the national context, older adults are estimated to account for 30.9 million people in 2020, around 13% of the Brazilian population, placing Brazil among the seven countries with the largest older adults populations in the world. Resulting from this process, the number of common diseases among older adults increases, with consequent organic destabilization that leads to the need for ICU beds to meet the demands of these patients. Older patients (age> 65 years) account for 42 to 52% of ICU admissions and almost 60% of all ICU days.14

Because of the variation on the age profile found in the ICU, it is important to use resources to classify these patients. The scoring system used to categorize patients contributes to a better understanding of two aspects in intensive care: the severity of the disease and the effectiveness of the therapy. This system allows for a proper dimensioning of the nursing personnel to meet the profile needed for the ICU. Even though this ability to predict results has not been consistent enough, its contribution should be a collaborating factor in the decision-making process in intensive care units. In Brazil, the Ministry of Health plans to create regulations to enable selecting the type of patient who will occupy an ICU bed. With this measure, funds will be used primarily for patients who have real chances of recovery. Assessment criteria will be established to apply this measure, used both on admission, and at discharge, reducing the responsibility of physicians to make the decision, on their own, on the distribution and occupancy of vacancies in ICU.15

Another characteristic investigated in this population was the marital status, in which there was a predominance of single and married/cohabiting couples with the latter corresponding to 45.5% of the study population. This result was also found in other studies 15,16 that have focused on adults and older patients in the ICU.

Regarding schooling, the majority of patients (72.4%) state having finished high school or elementary education and only 2.3% of patients had a college degree. Most of the hospitalized population had a low level of education, which leads to a perception that there could be some difficulties for these patients to understand the medical and nursing orientations related to self-care.8

Concerning the place where the patients came from, Table 1 shows a broad variety, indicating the severity of patients around the hospital. The Neurological Nursing Ward stands out as the unit that had more patients transferred to the ICU, accounting for 33.9% of all hospitalizations. Literature data show that there is no consensus as to the type of treatment that leads patients to be treated in general ICUs. Some studies point to hospitalizations for surgical reasons (elective or emergency) as prevalent, whereas others cite a range of 53.7% to 78% of hospitalizations for clinical reasons.9

Profile of patients in intensive care: considerations...

Table 1. Patients in the ICU of the Emergency Unit of the Clinics Hospital of the Ribeirão Preto Medical School, according to unit of origin, in 2009. Ribeirão Preto, 2012

<table>
<thead>
<tr>
<th>Inpatient unit (origin)</th>
<th>No. of patients</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical Clinic Ward</td>
<td>124</td>
<td>25.8</td>
</tr>
<tr>
<td>Medical Clinic Ward</td>
<td>149</td>
<td>31.0</td>
</tr>
<tr>
<td>Neurological Ward</td>
<td>162</td>
<td>33.9</td>
</tr>
<tr>
<td>Orthopedics Ward</td>
<td>41</td>
<td>8.6</td>
</tr>
<tr>
<td>Burns Unit</td>
<td>3</td>
<td>0.6</td>
</tr>
<tr>
<td>Total</td>
<td>479</td>
<td>100.0</td>
</tr>
</tbody>
</table>

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As regards days in the ICU, many inquiries are made, including the indication criteria for the need of assistance in such a specialized unit. These observations are based on the fact that the majority of patients hospitalized in 2009 remained at the unit for only 24h (13.4%), accounting for the largest percentage of this variable. However, this must be further analyzed and more data are needed to clarify this scenario. A high mean of length of stay (11.4 days) was also observed in this study, which is consistent with another study performed in an ICU in 2007, but different from the findings of other studies, with means between 2 and 7.2 days, demonstrating the need for intensive care for a longer period of time for this population. The analysis of the quantity of patients classified in the range between 1 and 10 days shows that most stays for 1 to 6 days in the ICU, with these results being confirmed by the Brazilian ICU Survey, developed by the Brazilian Association of Intensive Medicine.

In a study conducted in five ICUs of two hospitals for a period of two years, the only factor associated with high nursing workload was the length of stay of patients evaluated in the ICU. The ICU stay depends on several factors ranging from the severity of the disease and the therapeutic requirements arising from complications to economic issues. Ideally, the length of stay should be the minimum necessary to achieve stability that makes it possible for the patient to be transferred to another hospital unit, thus avoiding inappropriate use of this unit.

The number of patients with only 24 hours of hospitalization prior to the ICU admission was 258. This finding may indicate the severity of the patients received. The variation of hospitalization days pre-ICU was also high (1-51 days), but less than 5% of patients had more than 10 days of hospitalization when they were being transferred.

The number of hospitalization days post-ICU also showed great variability, but most patients remained hospitalized up to 10 days. Similar results were found in a study developed at a philanthropic hospital, where patients stayed on average 10.3 days hospitalized after leaving the ICU. The mean hospital stay post-ICU found in the present study was 6.84.

The reasons registered for patients to leave the ICU were death and transfer, the latter predominating with 64.7% of patients. The mortality rate, 35.3%, was similar to that found in Brazilian studies, ranging from 29% to 35%, but above those reported in foreign studies, which ranged between 8% and 19%. However, lower values were also found in a Brazilian study that noted a mortality rate of 15.9% in five ICUs in two private hospitals. In this direction, a study carried out in three ICUs of a private hospital found a mortality rate of 17% among patients in the General ICU, 3% in the Cardiac ICU and 6% in the Neurological ICU, but the characteristics of the institution might explain the differences identified.

The high mortality of patients analyzed in this study could be explained by the association of different factors, with emphasis to the presence of preexisting morbid conditions, current disease and clinical severity, not excluding ICU admissions of patients with no therapeutic possibilities.

Only 3.8% of patients received a diagnosis, one patient received 29. Most patients were evenly distributed in the range between 4 to 16 diagnoses, and the number of 10 diagnoses (9.4%) was predominant. The large number of diagnoses that each patient received demonstrates the complexity of their condition.

The study identified 4955 different medical diagnoses and, for reasons of presentation, they were grouped according to body systems by the International Classification of Diseases, Tenth Revision (ICD-10). Predominance of respiratory and circulatory diseases was present. Of the 479 patients included, 360 (75%) had at least one respiratory disease, followed by 353 (74%) who had at least one disease of the circulatory system. The remaining percentage is shown in figure 1.
As for the reason for ICU admission, 159 patients (33%) were admitted to the unit due to trauma, poisoning and other external causes, followed by 88 patients (18%) with diseases of the nervous system, 70 patients (15%) with respiratory system diseases and 63 patients (13%) with cardiovascular system diseases. Table 2 shows the causes of ICU admission for all patients according to ICD-X.

| Patients’ diagnoses leading to the admission at the ICU of the Emergency Unit of the Clinics Hospital of the Ribeirão Preto Medical School, in 2009. Ribeirão Preto, 2012 |
|---------------------------------|----------|---|
| Patients’ diagnoses according to the body systems | No. of patients | % |
| Cardiovascular system diseases | 63 | 13 |
| Respiratory system diseases | 70 | 15 |
| Nervous system diseases | 88 | 18 |
| Injury, trauma, poisoning and other external causes | 159 | 33 |
| Musculoskeletal system diseases | 04 | 1 |
| Genitourinary system diseases | 06 | 1 |
| Gastrointestinal system diseases | 45 | 9 |
| Mental and behavioral disorders | 05 | 1 |
| Endocrine, nutritional and metabolic diseases | 04 | 1 |
| Infectious and contagious diseases | 21 | 5 |
| Other | 14 | 3 |
| Total | 479 | 100 |

A study performed in 2007 found diseases of the cardiovascular (56.2%) and respiratory system (16.1%) to be the main reasons for hospitalization in the general ICU. Another study showed problems of the neurological (30.8%) and respiratory system (29.8%) as the most frequent reasons for hospitalization, however, in relation to the presence of pre-existing diseases, cardiovascular system diseases, followed by the respiratory system ones, are pointed out as the most prevalent, similarly to the results found in this study.

The multifactorial nature of the disease is thus perceived and health is understood as a multidimensional phenomenon involving physical, psychological, social and spiritual aspects. Thus, patient care should be directed to the totality of the being, including positive mental attitude and psychological, social and spiritual support, so that the overall state of the individual results in well-being.

**CONCLUSION**

The experience in the intensive care setting sharpens the need to develop a body of knowledge on the subject to support the management process of nursing care in this unit. Qualified and safe nursing care depends, among other factors, on a nursing personnel size that is adjusted to the demands of patient care. In addition, the nursing hours available must be appropriate to those required by patients.

The challenge faced is to combine high standards of care and low cost, which contributes to the amount of nursing staff, because it constitutes the largest group of
health professionals. The relation between patient dependency and nursing workload is being increasingly investigated. Hence the need to effectively understand the patients assisted in this field of care for an evaluation of the existing nursing workload.

The ICU investigated presented a varied profile of patients, with predominance of older and young adults, probably due to the urgent and emergency characteristic of patients assisted in this setting. It is a complex unit, with patients with multiple diagnoses, variable time of hospitalization and high mortality rate. It is noted that the variables studied are extremely important because of their influence on nursing workload.

Given these considerations, new perspectives for studies to be developed arise, in order to increase knowledge about patients hospitalized, classify them and thus dimension the nursing staff so that the workload is in accordance with the demands of care required by patients, always seeking quality of care.

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