Characterization of users of adult Intensive Care Units and Coronary Care Units in the city of Pelotas/RS

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ABSTRACT

This research aimed to characterize users of Adult Intensive Care Units and Coronary Care Units in the city of Pelotas/RS during hospitalization in 2020. To this end, a quantitative, descriptive research with a cross-sectional design was undertaken. This is an excerpt from the database of the study "Family Satisfaction with Care in the Intensive Care Unit -FS-ICU 24R: Cross-cultural adaptation and validation for Brazilian Portuguese". Data were collected between 2018 and 2022. The variables of interest available in the research database were analyzed, totaling 222 medical records. The data processed and stored in the Statistical Package for the Social Sciences program were transferred to Stata 17.0 Software, in which descriptive statistics were applied with distribution of absolute and relative frequencies, measures of central tendency and dispersion. The results identified that 51.8% (115) of users were male, 91% (202) were white, and the elderly age group was predominant with 61.7% (137). Regarding the presence of comorbidities, at least one type was identified in 66.7% (148) of users, clinical admission was the majority in 81.5%
(181) of hospitalizations. Regarding the reason for hospitalization, the main cause was Acute Coronary Syndrome in 45.1% (100) of users, the majority (60.4%; 134) were not subjected to Invasive Mechanical Ventilation. Most users remained hospitalized for up to 7 days (67.5%; 150), and the discharge outcome was predominant (72.5%; 161). As for predictors of death, female users, who were subjected to invasive mechanical ventilation, hospitalized for a period between 21 and 28 days and admitted due to a stroke or oncological reasons, had a higher percentage of mortality. The study concluded that the results of this research bring a contribution to the area of knowledge, in order to improve the quality of care provided and also to identify the main weaknesses in assistance through understanding the mortality profile.

Keywords: Intensive Care Unit, Coronary Care Unit, User profile, Nursing, Characterization of users.

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INTRODUCTION

The Intensive Care Unit (ICU), originated in the 50s, is a restricted hospital wing, in which advanced life support is offered in order to care for critically ill patients, with potential for recovery. These, who need uninterrupted medical care, together with the support of a multidisciplinary team, human resources and high-tech equipment, specialized for continuous monitoring of inmates (PINTO *et al.*, 2019).

With the rise of globalization and technological development acquiring progressively more expressiveness, the way and habits of individuals and the life expectancy of human beings have undergone impacts and changes, therefore the disease profile and morbidity and mortality of the population are in constant transformation. In the context of the Brazilian population, in this process there was a progressive change from high mortality due to infectious (communicable) diseases to an increase in deaths from cardiovascular diseases, neoplasms, external causes and other diseases considered chronic-degenerative. There was also a shift of the highest burden of morbidity and mortality from the younger groups (infant mortality) to the older groups (QUEIROZ; REGO; NOBRE, 2013).

Currently, intensive care units have been receiving increasingly debilitated patients, with advanced age and acute chronic diseases that require complex treatments. This information is evident when identifying that the predominance of ICU admissions, according to current studies, is of elderly individuals, with at least one comorbidity and having as a reason for hospitalization, in some cases, pathologies associated with complications of chronic diseases (QUEIROZ; REGO; NOBRE, 2013; EL-FAKHOURI *et al*., 2016).

It is important to emphasize that the health team should, in addition to the clinical causes and pathologies to be treated, consider the impacts of hospitalization in a critical care unit on the patient's psychological factor. The social belief strongly associates ICU admission as synonymous with terminality, with greater chances of dying than recovering, consequently inciting fear and restlessness in patients. However, contrary to this thought, it was identified that most of the individuals admitted to the unit survived. The highest recovery rate was found by Cruz *et al.* (2019), in which 76.3% of admitted patients remained alive.

There are also several other factors that generate anguish during the stay in the ICU, such as the loneliness generated by the distance from family and friends, as well as from their routines and belongings, and also influences from the environment of the Unit, with the constant presence of light and noise from the devices, the lack of privacy, the alteration of circadian cycles, the performance of routine invasive procedures and the discomfort itself. Thus, it is important to constantly evaluate the psychosocial aspects of the patient and to humanize the care provided by the team, especially the

nursing professionals, who maintain a close relationship with the inmates (LUCCHESI; M; DE MARCO, 2008).

In order to improve the quality of care provided, prioritizing and meeting the real needs of the users with whom the team deals on a daily basis, it is crucial that health professionals know the clinical and epidemiological profile of the assisted context. In this way, by identifying the characteristics of the public, it is possible to develop a more precise distribution of human and material resources, and thus, with a dual objective, to provide a more humane and qualified health care and reduce expenses, since the longer the hospitalization time, the higher the costs incurred. Regarding the length of stay of individuals in the ICU, a mean stay of 7 to 14 days was found (QUEIROZ; REGO; NOBRE, 2013).

In addition, the characterization of ICU patients contributes to the orientation of admissions and discharges from this ward, as understanding the profile of critically ill patients helps to establish objective criteria for this purpose. The application of objective criteria for admission and discharge from the ICU promotes the rational use of beds and avoids unnecessary risks to patients. Therefore, for nurses, knowing the patient and these norms is essential information for the planning and organization of care for patients received in the ICU and hospital unit after treatment (FAVARIN; CAMPONOGARA, 2012).

It is also possible, with such epidemiological and clinical knowledge, to understand the mortality profile, especially the rates and predictors of deaths. This understanding helps to recognize the main weaknesses in care and to promote actions to qualify ICUs, contributing to the reduction of the risks of complications and mortality (BUSANELLO *et al.*, 2021).

At this juncture, an alternative for institutions to contribute to the knowledge of health professionals about the profile of users would be to promote continuing education. According to the Ministry of Health (2018, p.10), this practice should be used as the main resource to qualify care, being characterized as

> An intense educational aspect with potentialities linked to mechanisms and themes that make it possible to generate reflection on the work process, self-management, institutional change and transformation of in-service practices, through the proposal of learning to learn, working as a team, building daily routines and constituting themselves as an object of individual, collective and institutional learning.

Based on the research carried out for this study, it was identified that currently the predominant profile of patients admitted to Brazilian ICUs is male, elderly, white, with low schooling, married or with a partner, retired and from the same municipality. Regarding the clinical profile, most of them had at least one chronic comorbidity, mainly hypertension and DM, the main causes of hospitalization ranged from cardiovascular, neurological, infectious and respiratory diseases, most patients underwent invasive mechanical ventilation, had a mean length of stay of 7 to

14 days and the mortality rate ranged from 23.3% to 89.2%. with Sepsis or Septic Shock as the main identified cause. The mean APACHE II score scores ranged from 16.31 to 21.6 in the total number of hospitalized patients (FAVARIN; CAMPONOGARA, 2012; QUEIROZ; REGO; NOBRE, 2013; GUIA *et al.*, 2015; EL-FAKHOURI *et al.,* 2016; GODINJAK *et al.*, 2016; OF ALBUQUERQUE; DA SILVA; DE SOUZA, 2017; BAHTOUEE *et al.*, 2019; CRUZ *et al.*, 2019; PINTO *et al.*, 2019; CZAJKA *et al.*, 2020; BUSANELLO *et al.*, 2021).

However, the theme was chosen by the academic together with the Advisor and Co-advisor, as a result of the assumption that the results obtained through the development of this study will contribute to the knowledge of the clinical and epidemiological profile of individuals admitted to the ICU and, therefore, assist in improving the quality of nursing care, offering a more humanized care focused on the real needs of patients.

METHOD

It is characterized as a quantitative, descriptive cross-sectional study, and will be developed with data already collected in a project entitled "Family Satisfaction with Care in the Intensive Care Unit -FS-ICU 24R: Cross-cultural adaptation and validation for the Brazilian Portuguese", under the coordination of doctoral student Josiele de Lima Neves, carried out between 2018 and 2022, with family members of users of Intensive Care Units (ICU) of three hospitals in a municipality in the south of the state of Rio Grande do Sul.

Quantitative research aims to identify a phenomenon in a given population or in a representative sample at a given time and to enumerate and measure events objectively and precisely, strictly following a previously established plan, with hypotheses and variables defined by the author (TURATO, 2005).

Descriptive research aims to describe the characteristics of a population or phenomenon. The data are described in an impartial and scientific manner and without interference from the researcher, making it possible to identify the frequency with which the characteristics studied are observed in the population that was selected (BONITA; BEAGLEHOLE; KJELLSTRÖM, 2010; GIL, 2017).

Finally, the cross-sectional study is mainly characterized by the fact that the observation of the variables is performed at a single moment. This type of study allows the researcher to observe directly the phenomena to be analyzed, to collect information in a short period of time, without the need to monitor the participants. It is mainly used to study the prevalence of a given phenomenon (ZANGIROLAMI-RAIMUNDO; ECHEIMBERG; LEONE, 2018).

Data collection from the original project was carried out from Intensive Care Units of three hospitals in the Southern Region of Rio Grande do Sul: Teaching Hospital (HE) of the Federal

University of Pelotas (UFPel), São Francisco de Paula Hospital of the Catholic University of Pelotas (UCPel), and Santa Casa de Misericórdia Hospital of Pelotas.

The municipality of Pelotas is located in the Southern Region of the state of Rio Grande do Sul, on the banks of the São Gonçalo Canal. According to those of the Brazilian Institute of Geography and Statistics (IBGE, 2022), in the last census, which took place in 2010, the city had approximately 328,275 people, with a population estimate for the current period of 343,826 people. Also according to the IBGE (2022), in 2009 there were 97 health establishments, including the participating hospitals.

The Teaching Hospital of the Federal University of Pelotas, a subsidiary of the Brazilian Company of Hospital Services (EBSERH), is medium-sized and has 175 beds and is a reference for 28 municipalities in the region, serving exclusively by the Unified Health System, with a high-complexity reference service in oncology and an outpatient clinic specialized in HIV/AIDS. The intensive care unit has six clinical and surgical inpatient beds, two of which are isolation beds with closed rooms (HOSPITAL ESCOLA, 2021).

The São Francisco de Paula University Hospital (HUSFP) is a medium-sized hospital, linked to the Catholic University of Pelotas (UCPel) since 1976, but was inaugurated in 1958 as the Pelotas Clinical Hospital. The Intensive Care Unit I and II has 18 beds and was adapted to meet the needs of the hospital's inpatient units, as well as patients from the Pelotas Emergency Room and the region (HUSFP, 2022).

Finally, the Hospital Santa Casa de Misericórdia de Pelotas, a medium-sized hospital, is the oldest care and hospital institution in operation in the city of Pelotas, having been founded in 1847. The general Intensive Care Unit has 20 beds, of which 10 are SUS beds and the remaining 10 are health insurance beds, and the Cardiology Intensive Care Unit has 7 beds.

In the original study, the approach was directed to family members, and it was necessary to first identify the patients. Therefore, the participants of this study are composed of individuals hospitalized in the ICUs of hospital institutions, in the period from January to June 2020 (in the three hospitals) and from July to December only in the Santa Casa de Misericórdia de Pelotas (the only hospital that maintained the visitation of a family member/day in units without patients with infection by the new coronavirus).

For the present study, records were included, present in the database of the original research, referring to patients hospitalized in one of the three ICUs, for at least 48 hours, with family members who had made at least two visits, and were aged 18 years or older.

Records with blank variables of interest were excluded.

It is noteworthy that the original research project entitled "*Family Satisfaction with Care in the Intensive Care Unit* - FS-ICU 24R*:* Cross-cultural adaptation and validation for the Brazilian

Portuguese", under the coordination of doctoral student Josiele de Lima Neves, is approved by the Research Ethics Committee of the Faculty of Nursing of the Federal University of Pelotas with opinion number 4.729.640, CAAE 46629221.3.0000.5316 (ANNEX I). It should be noted that for the construction of the research, the ethical precepts of Resolution 466/12 of the National Health Council were respected, which provides for research involving human beings (BRASIL, 2012). The provisions of Resolution No. 510 of April 2016 were also respected, which provides for standards for research in the Humanities and Social Sciences that use data collected directly from participants (BRASIL, 2016). In addition, the study is also in accordance with articles that cover the rights, duties and prohibitions with regard to research in the 2017 Code of Ethics for Nursing Professionals (COFEN Resolution No. 564/2017).

The research did not entail physical or moral risks, but it did offer psychological risk, since they recalled situations of stress and anguish. However, in case of any discomfort or embarrassment, the participant was clarified and allowed/encouraged to exercise his right not to answer the questions, offering referral to mental health referral care.

As benefits to the study participants, there was the possibility of dialoguing about the experiences lived regarding the hospitalization of a close person in the Intensive Care Unit, reflecting on their performance as a family member in the context of the ICU, thus being able to re-signify negative memories and perceptions.

It should be noted that for the development of the study, all participants signed a Free and Informed Consent Form (ICF) (ANNEX II). All information from this study will be stored for a period of five years, after which the data will be deleted, as recommended by Resolution 466/12, already mentioned above (BRASIL, 2012). The results will be used for scientific purposes only.

It should be noted that the coordinator of the original study authorized the use of the data (ANNEX III), and the present proponent assumes the confidentiality of the data intended for it (APPENDIX A).

The present study was developed with data already collected in a project entitled "*Family Satisfaction with Care in the Intensive Care Unit* - FS-ICU 24R*:* Cross-cultural adaptation and validation for the Brazilian Portuguese", under the coordination of doctoral student Josiele de Lima Neves. This is a methodological study with a quantitative approach focusing on the process of adaptation of a measurement instrument that evaluates the satisfaction of family members of patients who were hospitalized in the ICU.

The entire research applied the FS-ICU 24R instrument, with two domains. The first was to assess the family's satisfaction with the care (from items 1 to 14) and the second was to assess the family's satisfaction with the decision-making process regarding the care of critically ill patients

(from items 15 to 24). It also has three items for those relatives of patients who died, and three open questions about opinions and suggestions.

In addition to the above-mentioned instrument, and in order to complement data collection, the author developed a patient characterization form (ANNEX IV), with variables that will be used in this study (Figure 3).

Thus, for the construction of this study, we used information obtained from the electronic medical records of the patients collected with the aid of the patient characterization form, from the database of the original study.

Chart 3 – Independent variables.

Variables	Response options	Variable Type
Age	Open	Numeric ordinal
Sex	Male/Female	Dichotomous
Reason for hospitalization	Open	Nominal
Color/Race	White/Black/Indigenous/Yellow a/Other	Polytomics
Type of admission	Clinic/Elective Surgery/Surgery Emergency	Polytomics
Comorbidity at admission	Yes/No	Dichotomous
APACHE Score	Open	Nominal
Length of stay in the ICU (in hours)	Open	Numerical
Status of high and high	Discharge/death	Dichotomous
Mechanically ventilated	Yes/No	Dichotomous

Source: Thesis project entitled "Family Satisfaction with Care in the Intensive Care Unit - FS-ICU 24R: Cross-cultural adaptation and validation for the Brazilian Portuguese", 2022.

DATA ANALYSIS

The data were evaluated from the original research database, which were processed and stored in the SPSS Statistical *Package for the Social Sciences*, and transferred to the *Stata* 17.0 software, in which descriptive statistics were applied with distribution of absolute and relative frequencies, measures of central tendency and dispersion.

The results will be used to write an abstract and scientific article prepared by the author of this project in partnership with the supervisor and co-supervisor.

RESULTS

Data were collected from the medical records of 222 patients hospitalized in adult intensive care units (ICU) and coronary care units of three hospitals in the city of Pelotas, Rio Grande do Sul. Table 1 shows the sociodemographic and clinical characteristics and their relationship with the outcome of ICU admission. Statistically significant results were found in the distribution of the variables gender, use of mechanical ventilation, length of hospital stay, and reason for hospitalization by outcome.

Among the sociodemographic characteristics identified in the medical records, 51.8% (115) of the ICU users were male, and 91% (202) were white in terms of skin color. The elderly age group predominated with 61.7% (137), with a mean age of 63.9 years (SD = 14.9), ranging from 12 to 97 years. The presence of at least one type of comorbidity was verified in 66.7% (148) of the records. In 81.5% (181) of the admissions were due to clinical causes.

In 45.1% (100) of the users, the cause of hospitalization was Acute Coronary Syndrome (ACS), followed by gastrointestinal complications (10.4%) and Cerebrovascular Accident (CVA) (9.0%).

It is important to note that among the 222 users included in the study, 48% (108) were admitted to the Cardiology Intensive Care Unit (ICU), resulting in a significant number of users with cardiac complications. The results regarding the use of technological resources and the outcome of patients admitted to the ICU are also verified. Of the total number of hospitalized patients, 60.4% (134) did not undergo Invasive Mechanical Ventilation (IMV). The mean length of stay in the ICU was 9.4 days (SD = 12.1), with the shortest time identified being 2 days and the longest being 79 days, the median being 5 days. There was a predominance of users under intensive care, 67.5% (150), for up to 7 days. Regarding the outcome of hospitalization, 72.5% (161) of the cases survived hospitalization.

Table 1 – Relationship of sociodemographic and clinical characteristics with the outcome of hospitalization of users of the Adult Intensive Care Unit of three hospitals in Pelotas, Rio Grande do Sul, 2020-2021 (N=222).

Characteristics	High (161)		Death (61)		Total (222)		*P*
	N	%	N	%	n	%	
Gender							
Female	71	66,4	36	33,6	107	100	0,05
Male	90	78,3	25	21,7	115	100	
Skin color							
White	146	72,3	56	27,7	202	100	
Black	12	80,0	03	20,0	15	100	0,66
Curtain	03	60,0	02	40,0	05	100	
Age							
12 to 59 years old	65	76,5	20	23,5	85	100	0,29
Over 60 years old	96	70,0	41	30,0	137	100	
Type of admission							
Clinic	133	73,5	48	26,5	181	100	
Elective surgery	22	73,3	8	26,7	30	100	0,39

Emergency surgery	6	54,5	5	45,5	11	100	
Presence of comorbidities							
Yes	107	72,3	41	27,7	148	100	0,91
No	54	73,0	20	27,0	74	100	
Mechanical Ventilation							
No	123	91,8	11	8,2	134	100	0,00
Yes	38	43,2	50	56,8	88	100	
Length of hospital stay							
0 to 7 days	128	85,3	22	14,7	150	100	
8 to 14 days	20	57,1	15	42,9	35	100	
15 to 21 days	6	40,0	9	60,0	15	100	0,00
22 to 28 days	2	28,6	5	71,4	7	100	
84 to 91 days	5	33,3	10	66,7	15	100	
Reason for hospitalization							
Acute Coronary Syndrome	97	97,0	3	3,0	100	100	
Gastrointestinal complications	13	56,5	10	43,5	23	100	
COVID Complications	8	88,9	1	11,1	9	100	
Arrhythmias	7	100	0	0,0	7	100	
Cardiac surgery	6	100	0	0,0	6	100	
Cardiac complications	5	41,7	7	58,3	12	100	
Because	5	55,6	4	44,4	9	100	0,00
Cerebrovascular accident	4	20,0	16	80,0	20	100	
Kidney diseases	4	50,0	4	50,0	8	100	
Oncology	3	27,3	8	72,7	11	100	
Neurological complications	3	100	0	0,0	3	100	
Traumatology	2	33,3	4	66,7	6	100	
Pulmonary complications	2	50,0	2	50,0	4	100	
Other	2	50,0	2	50,0	4	100	

Source: Thesis project entitled "Family Satisfaction with Care in the Intensive Care Unit - FS-ICU 24R: Cross-cultural adaptation and validation for the Brazilian Portuguese", 2022.

Male users had the highest percentage of discharge from the unit, of which 78.3% (90) survived, as well as users who were not submitted to Invasive Mechanical Ventilation, with a discharge percentage of 91.8% (123). Regarding the length of hospital stay, 85.3% (128) of those hospitalized for up to one week were discharged. The hospitalization period with the highest percentage of deaths was from 21 to 28 days, in which 71.4% of the users who stayed for that time died. Regarding the reasons for hospitalization, 100% of the patients who were hospitalized due to arrhythmias, neurological complications, and cardiac surgery were discharged from the ICU. Users with stroke and oncological pathologies had the highest proportions of deaths, respectively 80% (16) and 72.7%

DISCUSSION

By characterizing the users of adult and coronary care ICUs hospitalized in the city of Pelotas, this study understands their profile, based on the collection of information regarding gender, skin color, age group, type of admission, presence of comorbidities, use of mechanical ventilation, length of hospital stay, reason for hospitalization and the outcome of treatment.

The findings of the profile of users hospitalized in ICUs in the city of Pelotas partially corroborate the scientific publications previously analyzed on this approach. It differed in terms of

the reasons for hospitalization, use of resources, and user outcomes (FAVARIN; CAMPONOGARA, 2012; QUEIROZ; REGO; NOBRE, 2013; GUIA *et al.*, 2015; EL-FAKHOURI *et al.,* 2016; OF ALBUQUERQUE; DA SILVA; DE SOUZA, 2017; BAHTOUEE *et al*., 2019; CRUZ *et al.*, 2019; PINTO *et al.,* 2019; BUSANELLO *et al.*, 2021).

In the present study, there was a predominance of men in ICU admissions, accounting for 51.8% of the cases. It is suggested by Cruz *et al.* (2019), that the highest hospitalization rate is among males, due to their low adherence to the prevention of pathologies, resulting in the search for health services only when there is greater severity of diseases, which is in line with the findings of other studies (FAVARIN; CAMPONOGARA, 2012; QUEIROZ; REGO; NOBRE, 2013; EL-FAKHOURI *et al*., 2016; DE ALBUQUERQUE, DA SILVA, DE SOUZA, 2017; BAHTOUEE *et al*.; PINTO *et al.,* 2019).

It is recognized that the predominance of male users in ICUs can be explained by the lower use of primary and secondary health care services by this population. Possibly related to the fear of a serious pathology being discovered, the insecurity about one's body and of exposing it to a health professional, the lack of units dedicated exclusively to men's health treatments, and the restricted availability of public services, especially at accessible times for this population (EL-FAKHOURI *et al.*, 2016).

However, it should be noted that despite the predominance of men, the outcome of death prevailed among women, with statistical significance in this distribution (*p=0.05). Corroborating the findings of Busanello et al.* (2021), in a study carried out in a general hospital in the interior of Brazil with 259 users, in which 55.4% (128) of deaths were obtained among the female public.

Regarding skin color, the high prevalence of white users (91%; 202) is in line with the studies by El-Fakhouri *et al.* (2016), Pinto *et al.* (2019) and Busanello *et al.* (2021). Although the racial distribution of the population in the state of Rio Grande do Sul shows a predominance of whites (79%), it is undeniable that among the reasons for the minority of the black and brown population in hospitalizations is their difficulty in accessing health services (BRASIL, 2017; SILVA *et al.,* 2019).

The population's access and adherence encompass a series of limiting factors that result in inadequate provision of care, which are structural barriers, social and economic aspects, professionals' conduct, and disrespect for cultural, ethnic, and racial diversity. In view of this, there is a need to reformulate at the level of primary care, the strategies for the supply and organization of services, in order to solve the vulnerability of the black population in the issue of access to and use of health services (SILVA *et al.,* 2019).

In the present study, the elderly predominated, with a mean age of 63.9 years (SD = 14.9), corresponding to 61.7% (137) of the hospitalizations analyzed. This result corroborates what was identified in studies carried out in Brazilian ICUs by the authors Favarin; Camponogara (2012),

Queiroz; Rego; Nobre (2013), Guia *et al*., (2015), El-Fakhouri *et al*., (2016), de Albuquerque; da Silva, de Souza (2017), Pinto *et al.,* (2019). It is known that aging is a natural process, marked by a set of several physiological, morphological, biochemical and emotional changes that occur to the body and mind of the individual throughout life. There is progressive and gradual motor and sensory loss, in addition to a decrease in cell dynamics, making the elderly more vulnerable and susceptible to the development of pathologies that will affect their functionality (MENEZES *et al.,* 2018).

Thus, the age group above 60 years is immediately related to the prevalence of chronic comorbidities, consequently, this exposure increases the elderly seeking care at various levels of health, leading to the predominance of this age group among those hospitalized in ICUs. As a result, the long-lived population uses hospital services more intensively than the other age groups, which leads to slower treatment and recovery (FAVARIN; CAMPONOGARA, 2012; PINTO *et al.,* 2019).

It should be noted that the distribution of ICU users by age group and hospitalization outcome was not statistically significant. However, there were 30% (41) of deaths among users over 60 years of age, while younger users accounted for 23.5% (20) of deaths. On the other hand, in another study carried out in an ICU in Rio de Janeiro, it was found that there was a close relationship between age group and the outcome death, differing from what was found in the present study (DE ALBUQUERQUE; DA SILVA; DE SOUZA, 2017).

The predominant type of admission was clinical hospitalization (81.5%; 181). This result is a consequence of the characteristic of the intensive care unit from which 48% (108) of the data collected were obtained, which has the characteristics of an Intensive Care Cardiology Unit, with 45.1% (100) of the cases being of Acute Coronary Syndrome.

Comorbidities were present in 66.7% (148) of the cases consulted. Studies conducted with intensive care patients in general hospitals in Brazil and Iran showed similar results (BAHTOUEE *et al.*, 2019; CRUZ *et al.*, 2019; PINTO *et al.*, 2019; BUSANELLO *et al.*, 2021). Currently, chronic health conditions are the main cause of death in 70% of the Brazilian population, and are also associated with an increase in the number of hospitalizations. It manifests itself as an important problem and public health issue due to its progressive and degenerative characteristics, which demands continuous and permanent care to mitigate the associated complications, and thus avoid hospitalizations in intensive care.

It is recognized that chronic non-communicable diseases represent an epidemic in Brazil, affecting quality of life and causing limitations and disabilities, especially in the most vulnerable groups, such as the elderly, people with low income education (BRASIL, 2021), so the actions of health professionals, especially in Primary Care, for prevention and control are essential. In this regard, a study carried out in the ICU of a general hospital in the state of Rio de Janeiro points to the significance of the number of people with associated chronic diseases, especially cardiovascular

pathologies, such as Systemic Arterial Hypertension, with a notorious prominence among the causes of patient hospitalizations in Brazil and worldwide (PINTO *et al*., 2019).

It is important to emphasize that the identified risk factors, such as a sedentary lifestyle, inadequate diet and smoking, are susceptible to changes through the restructuring of daily habits and thus enabling the prevention and/or control of comorbidities, improving the quality of health, avoiding aggravation and reducing hospitalizations and mortality due to associated pathologies (PINTO *et al*., 2019). Thus, the performance of health professionals and services, especially at the Primary Care level, in the monitoring and management of these risk factors is essential, aiming at the prevention and control of morbidities, thus avoiding possible complications (CRUZ *et al*., 2019).

Regarding invasive mechanical ventilation (IMV), it was found that 60.4% (134) of the user records evaluated were not submitted to use. Whereas, the hospitalization was for less than one week in the Cardiology Intensive Care Unit due to Acute Coronary Syndrome, and there was no clinical need for IMV. However, the result of the stratification of users who used IMV and the type of treatment outcome was statistically significant (p=0.00), showing that of the 88 users who underwent IMV, 56.8% (50) died. In their study, Busanello *et al*. (2021), also sought to verify the distribution of the variable use of mechanical ventilation by the outcome, however, differing from the present study, the data found was not statistically significant, despite the fact that most users undergoing IMV died (69.5%; 180).

Barbosa *et al.* (2020) suggest that the increased risk of mortality in users who underwent IMV is due to the use of excessive sedation, due to its deleterious effects such as *delirium*, prolonging the time of use of mechanical ventilation and thus increasing the risk of mortality by 10% per day. The use of continuous sedation in patients in need of IMV is undeniable, and it is essential that professionals aim to implement measures to reduce risks. Monitoring the intensity of sedatives using the *Richmond Agitation-Sedation Scale* (RASS), the daily adequacy of the level of sedation, and the assessment of the patient's readiness for extubation are essential and are correlated with a reduction in the duration of mechanical ventilation and, consequently, a reduction in the mortality rate (BRASIL, 2017; BARBOSA *et al.,* 2020).

Regarding the length of hospital stay, a mean of 9.4 days was found (SD = 12.1), with a predominance of users under intensive care for up to 7 days (67.5%; 150). The literature indicates that the length of hospital stay directly interferes with the patient's evolution, so the longer the period in the unit, the greater the risk of developing an unfavorable prognosis (QUEIROZ; REGO; NOBRE, 2013). It is known that individuals who remain for a long time in intensive care units are those who have more unstable conditions or complications resulting from their pathology or invasive procedures. In addition, there is also a greater probability of acquiring infections and adverse events, which compromise the improvement of health and patient safety. Thus, it is evident that there is a

close relationship between prolonged hospitalization time and patient severity (QUEIROZ; REGO; NOBRE, 2013; OF ALBUQUERQUE; DA SILVA; DE SOUZA, 2017; PINTO *et al.,* 2019; CRUZ *et al.*,2019). In the present study, it was found that this relationship was also statistically relevant (*p=0.00), and it was evident that the longer the period of hospitalization, the greater the risk of an unfavorable outcome, such as death.*

On the other hand, Busanello *et al.* (2021), presented two average hospitalization times, two days for patients who died and more than nine days for survivors, linking this first circumstance to the condition presented by the patient at the time of hospitalization, which is severe and already with irreversible organic dysfunctions. This condition is usually intensified by the long wait for a bed in the intensive care unit, thus occurring a late hospitalization and contributing to death in the first days. However, in the aforementioned publication, no statistical significance was identified regarding the length of hospital stay with the mortality of the individuals.

Regarding the reasons for hospitalization, in the present study, the main cause identified was Acute Coronary Syndrome (ACS), with 45.1% (100), followed by gastrointestinal complications (10.4%) (23) and Cerebrovascular Accident (CVA) 9.0% (20). This finding differs from those found in other studies, in which the results ranged from neurological, respiratory, cardiovascular and infectious diseases, as well as postoperative periods, traumas and metabolic diseases, thus demonstrating variability in the specialties served, reflecting the generalist characteristic of ICUs (FAVARIN; CAMPONOGARA, 2012; QUEIROZ; REGO; NOBRE, 2013; GUIA *et al.*, 2015; EL-FAKHOURI *et al.,* 2016; OF ALBUQUERQUE; DA SILVA; DE SOUZA, 2017; CRUZ *et al.*, 2019; PINTO *et al.,* 2019; BUSANELLO *et al.*, 2021).

It is important to emphasize that the main causes for the emergence of cardiovascular diseases, such as ACS and stroke, are comorbidities with modifiable risk factors, such as arterial hypertension, hyperglycemia, diabetes *mellitus*, hypercholesterolemia, smoking, obesity and sedentary lifestyle, as previously mentioned (SOARES *et al*., 2019). Once again, the role of health professionals, especially in primary health care, as health educators, is highlighted, carrying out primary prevention actions to remove modifiable factors from lifestyle habits, thus reducing negative outcomes such as ICU admission.

As for the pathologies that caused the most deaths, stroke and oncological causes stood out. Currently, stroke is the second leading cause of death in Brazil, with 98,843 deaths from cerebrovascular diseases recorded in the country in 2020 and 164,200 hospitalizations due to stroke in 2021, according to the Mortality Information System (BRASIL, 2022).

Regarding the treatment outcome, of the 222 patients admitted, 72.5% were discharged from the ICU and 27.5% died during hospitalization. The predominance of discharge in this study corroborates the findings of other studies conducted in Brazilian general adult ICUs (FAVARIN;

CAMPONOGARA, 2012; QUEIROZ; REGO; NOBRE, 2013; GUIA *et al.*, 2015; EL-FAKHOURI *et al.,* 2016; OF ALBUQUERQUE; DA SILVA; DE SOUZA, 2017; CRUZ *et al.*, 2019; PINTO *et al.,* 2019; BUSANELLO *et. al.*, 2021). It is noteworthy that mortality is a significant indicator of the quality of care provided. Thus, in order to reduce mortality and ensure the survival of users, early diagnosis, treatment and continuous monitoring are essential practices (QUEIROZ; REGO; NOBRE, 2013).

In short, regarding the predictors of death, they are: female gender, submitted to invasive mechanical ventilation, longer hospital stay, and having been admitted due to stroke or oncological causes, so these were the variables that presented a higher risk of mortality than the others.

FINAL THOUGHTS

This study allowed us to identify and describe the sociodemographic and clinical characteristics and predictors of death found among users hospitalized in the Adult Intensive Care and Coronary Care Units in the city of Pelotas, Rio Grande do Sul, stratified by treatment outcome.

The predominant sociodemographic profile found is that of the elderly population, mostly white men, with at least one comorbidity, with clinical admission and having Acute Coronary Syndrome as the main cause of hospitalization. Regarding the clinical aspects, it was identified that most users were not submitted to mechanical ventilation, that the predominant length of stay was from 1 to 7 days, and that the main outcome was discharge.

Finally, regarding the predictors of death, it was found that female users, submitted to invasive mechanical ventilation, longer hospital stay, and having been admitted due to stroke or oncological causes, had a higher risk of mortality than the others.

In view of the need for health professionals to have knowledge about the clinical and epidemiological characteristics of users treated in ICUs, in order to improve the quality of care provided and also to identify the main weaknesses in care through the understanding of the mortality profile, it is concluded that the results of the present research contribute to the area of knowledge.

The limitation of this study is that the sampling was for convenience and that it represented only those patients of family members who agreed to participate. Therefore, the results represent a portion of the users and cannot be generalized.

Another limiting factor of the study was the non-use of a scale to predispose the risk of mortality by the hospitals in the study, for this reason all records had the variable "APACHE II score" blank, and it was necessary to disregard it during collection.

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