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PERIOPERATIVE CARDIAC SURGERY: SOCIODEMOGRAPHIC ASPECTS AND THEIR VARIATIONS

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ABSTRACT

Objective: To characterize the sociodemographic aspects and their variations in patients who underwent cardiac surgery. **Method:** This is a study with a quantitative approach. Data were collected from physical medical records in the medical and statistical archiving service of the clinical hospital of the Federal University of Triângulo Mineiro. To analyze the data, a database was created in Microsoft Office Excel®, sequentially transferred to the Statistical Package for the Social Sciences, and used for data exploration. **Results:** Among the main results, the following stand out: predominance of male participants (69% (63), coronary artery bypass grafting (CABG) represented 44% (40) of the sample, the most prevalent pathology was systemic arterial hypertension (SAH), comprising 70% (64) of the data obtained, and 69% (63) represented patients who were discharged from hospital. **Conclusion:** It can be concluded that factors such as gender, age, and associated pathologies are factors that increase the probability of surgery for cardiac patients. From this perspective, nursing care in the perioperative period becomes essential to knowing and guiding the patient, envisioning holistic and individualized care for each patient.

Keywords: Heart disease. Cardiac Surgery. Sociodemographic characterization.

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INTRODUCTION

Cardiac surgery is a risky intervention, which is indicated when there is no possibility of a healthy life to the detriment of the use of medications. This is a situation in which patients need targeted care from the health team to know their clinical history and evolution, as well as their expectations regarding the surgery (Reis et al., 2019; Silva *et al*., 2018).

Thus, the Systematization of Nursing Care has a defined and defining role in this perioperative context, when it establishes a continuous and systematized form of evaluation. An activity that enables the professional to understand physical and psychological aspects, potential and real, establishing comprehensive, specific and individualized care for patients (Lucena *et al*., 2021).

Heart disease and surgical treatment express a new reality that is sometimes unpredictable and imposed abruptly on the patient. This context can lead to emotional imbalance, as it involves fear, uncertainty, and risk of life (Oliveira; Mäder, 2021).

Heart diseases are part of the group of chronic non-communicable diseases (NCDs) that are responsible for the main causes of premature deaths in the population, accounting for 70% of deaths worldwide, with significant mortality rates and representing 38 million deaths per year (Malta *et al*., 2017).

According to the Global Burden of Disease (GBD) 2019 study, the number of Brazilians with Coronary Artery Disease, which includes infarction, stable angina, and ischemic heart failure, grew from 1.48 million in 1990 to more than 4 million in 2019 (Oliveira *et al*., 2021).

Regarding the sociodemographic characteristics of this population, research highlights the predominance of males aged between 56 and 60 years, showing that almost half of the target population has SAH, dyslipidemia, and acute myocardial infarction (Rocha *et al*., 2021).

Evaluating psychoemotional stressors in patients who will undergo cardiac surgery was an aspect highlighted in some studies. These point to a relationship with symptoms of anxiety and depression, which can cause hemodynamic changes in the pre- and postoperative period of cardiac surgery, with a negative consequence of influencing the patient's recovery and physiological parameters (Santos, 2021).

The perioperative period requires specific and efficient care by the nursing team, as the patient requires greater attention given the stress experienced by the surgery. A phase in which he is more emotionally fragile, which can lead to an emotional and physiological imbalance (Reis *et al*., 2019; Silva *et al*., 2018).

From this perspective, it is necessary to emphasize the importance of the interpersonal relationship between nurse and patient, aiming to identify and work on stress factors for the patient during hospitalization, envisioning alternatives to minimize the situation (Sousa *et al*., 2021).

Nurses must base their actions on the principles of humanization, offering holistic care to cardiac patients. Care should focus on strategies aimed at alleviating fear, stress, insecurity, and doubts.

Thus, in the perioperative period, the nurse's actions need to be educational, aiming to guide the patient regarding the need for changes in their life habits and adaptations and routines that will contribute to the quality of life after surgery (Diniz *et al*., 2021).

From this perspective, health education has a unique role when it needs to mitigate anxieties that contribute to the patient's anxiety in the preoperative period (Diniz *et al*., 2021).

When monitoring the hospitalization and perioperative period of a cardiac patient, the nurse needs to have a peculiar perception about it, which allows the identification of specific needs and acts as an offer.

In this context, the present study seeks to characterize the sociodemographic aspects and their variations in patients who underwent cardiac surgery. We believe that by knowing this reality, nurses will be able to glimpse the main pathologies involved in this period, thus developing specific strategies for the patients' needs.

OBJECTIVE

To characterize the sociodemographic aspects and their variations in patients who underwent cardiac surgery.

METHODS

This is a research with a quantitative methodological approach of a retrospective and cross-sectional nature. This approach allows for exploring and evaluating documents of events that have already elapsed (Cabral *et al*., 2023). Cross-sectional studies, on the other hand, are about examining events of a certain period in which it is possible to make coalitions between what happened and their endings (Aragão, 2011). The quantitative approach makes it possible to correspond data aggregation with eventual influences, thus being an invulnerable way of analyzing and with a margin reduced to errors (Dalfovo; Lana; Silveira, 2008; Esperón, 2017)

Records of patients who were hospitalized at the Hospital de Clínicas of the Federal

University of Triângulo Mineiro (HC-UFTM), from January to December 2021, over 18 years of age, with heart disease, who had previous follow-up at the Maria da Glória Outpatient Clinic and who underwent cardiac surgery, who were hospitalized in the medical or surgical clinics, were analyzed.

Data collection was carried out by the researchers after approval by the Research Ethics Committee of HC UFTM, presenting opinion number 5.255.985, dated 02/22/2022, and was then appreciated and approved via Plataforma Brasil with CAAE No. 53526821.8.0000.8667. The exploration of the data began after the signing of the terms of acknowledgment and authorization of the sectors involved in the study: contracting and regulation sector, care regulation sector, medical and statistical archiving service, and contracting sector.

The contracting unit offered us the number of cardiac surgeries performed and which patients were submitted. With this information, it was then possible to have access to the records and thus carry out an active search for them in the SAME/HC/UFTM.

The data were extracted through the exploration of physical medical records, filed in the medical and statistical archiving service (SAME) of HC/UFTM, which have data referring to patients who have already been hospitalized HC-UFTM, in the period from January to December 2021, who had previous follow-up at the Maria da Glória Outpatient Clinic and have already undergone cardiac surgery, regardless of the sector in which his hospitalization occurred.

To analyze the data, a database was created in *Microsoft Office Excel® 2010, using the independent double typing technique, and sequentially transferred to the SPSS® (Statistical Package for the Social Sciences) program*, version 21, used for data exploration. The sample consisted of all available medical records that met the inclusion and exclusion criteria of the research.

It should be noted that all ethical aspects and recommendations provided for in Resolution 466/2012 on research on human beings of the National Health Council and documents endorsed in its preamble were followed.

RESULTS

Regarding the sociodemographic characteristics of the study participants, it is noteworthy that 98 (100%) people underwent cardiac surgery, of which 91 (82.65%) were patients over 18 years of age; with heart disease; hospitalized at HC-UFTM between January and December 2021; and undergoing cardiac surgery.

It is noteworthy that there was a predominance of male participants (69% (63). The age range ranged from 59 to 68 years for 41% (37). Regarding marital status, 52% (47) of the study participants were married.

Table 1 shows the main cardiac surgeries performed during the study period, related to gender.

Table 1. Cardiac surgeries performed in 2021 at the Hospital das Clínicas of the Federal University of Triângulo Mineiro, Minas Gerais, Brazil.

Type of surgery	N(%)	Gender: Male N(%)	Gender: Female N(%)
Coronary artery bypass grafting	40(44%)	30(48%)	10(35%)
Mitral valve replacement	14(15%)	9(14%)	5(17%)
Aortic aneurysm repair	5(5%)	4(7%)	1(4%)
Double valve replacement	5(5%)	3(4%)	2(7%)
Aortic valve replacement	9(11%)	3(4%)	6(20%)
Other	18(20%)	14(23%)	4(17%)
Total	**91(100%)**	**63(69%)**	**28(31%)**

Source: Prepared by the authors, 2024, based on patient records filed at SAME/HC/UFTM

Coronary artery bypass grafting (CABG) was the most performed cardiac surgery, totaling 44% (40) of the sample, with males accounting for 48% (30) and females for 35% (10).

The data show that the main pathology associated with cardiac surgery in the present study was systemic arterial hypertension (SAH), comprising 70% (64) of the data obtained, 66% (42) of which were male and 34% (22) female, followed by dyslipidemia 23% (21) of the data, in which 71% (15) were male and 29% (6) were female.

Coronary artery disease represented 11% (10) of the sample, 60% (6) men and 40% (4) women. Other associated pathologies of the study represented a total of 4% (4) of the sample, 75% (3) males and 25% (1) females. In this study, it can be noted that one patient had more than one associated pathology, with patients who had up to three associated pathologies.

The gender in which associated pathologies predominated were men, representing 51% (46) of the sample, and women, representing 25% (23). The other 24% (22) portray the group of people who do not have any pathology.

The age group that has the most associated pathologies for both men and women is the group from 59 to 68 years of age, characterizing 38% (16) in men and 45% (10) in women.

Regarding the length of hospital stay before cardiac surgery and after surgery in the ICU and ward, it is possible to verify the prevalence of days, shown in Table 2.

Table 2. Length of hospital stay of patients undergoing cardiac surgery in 2021 at the Hospital das Clínicas of the Federal University of Triângulo Mineiro, Minas Gerais, Brazil.

Length of hospital stay	Ward before cardiac surgery (N/%)	Intensive Care Unit (N/%)	Ward after heart surgery
0 days	2(2%)	0(0%)	16(18%)
1 – 10 days	43(47%)	66(73%)	50(55%)
11 – 21 days	36(40%)	16(18%)	20(22%)
22 – 32 days	8(9%)	6(7%)	4(4%)
33– 43 days	2(2%)	2(2%)	1(1%)
>44 days	0(0%)	1(1%)	0(0%)
Total	**91(100%)**	**91(100%)**	**91(100%)**

Source: Prepared by the authors, 2024, based on patient records filed at SAME/HC/UFTM

The data show that the prevalent time interval was that of patients who stayed from one to 10 days in the ward, corresponding to 47% (43). In the intensive care unit (ICU), the prevalence of time interval was one to 10 days, representing 73% (66) of the sample, while in hospitalization after surgery, 55% (50), represents the longest time interval in days of patients in the ward.

It is noteworthy that the length of hospital stay before surgery was counted from the day the patient was admitted to the hospital, as soon as he was admitted to the ICU and later when he left the ICU and went to a ward, until his discharge or death.

Table 3 shows the referrals of these patients after cardiac surgery.

Table 3. Referrals of patients who underwent cardiac surgery in 2021 at the Hospital das Clínicas of the Federal University of Triângulo Mineiro, Minas Gerais, Brazil.

Referrals	N(%)	Underwent coronary artery bypass grafting (N%)
Discharge	63(69%)	33(83%)
Deaths	28(31%)	7(17%)
Total	**91(100%)**	**40(44%)**

Source: Prepared by the authors, 2024, based on patient records filed at SAME/HC/UFTM

The population of the present study was characterized by 69% (63) of patients who were discharged from the hospital and 31% (28) of patients who died.

DISCUSSION

The results found in this study demonstrate that there was a predominance of males about cardiac surgeries, with a predominance of the age group between 59 and 86 years.

A study carried out at the Institute of Cardiology of Rio Grande do Sul showed similar results, indicating that the gender that underwent the most cardiac surgery was predominantly male and over 60 years of age (Silva, Wedge; Oliveira, 2021).

Confirming epidemiological research, which indicates that men undergo more heart surgeries, as they are more exposed to cardiovascular risk conditions such as smoking, sedentary lifestyle, and excessive alcohol intake (Rocha *et al*., 2021; Mussi *et al*., 2018)

The prevalence in the age group of 59 to 86 years can be explained by the progressive increase in life expectancy of Brazilians. This evolution is assisted by the modification of the epidemiological and demographic profile, which is defined by the growth of chronic diseases that are not communicable, especially from the age of 60, commonly associated with complications, mostly cardiovascular (Rocha *et al*., 2021; Saints; Silva; Soares, 2021).

The importance of holistic and individualized care offered by the nursing team to male patients over 50 years of age is highlighted, as they are people who are mostly more conservative and have more stigmas about masculinity when demonstrating feelings such as pain, anxiety, and fear.

Regarding the associated pathologies, in a study that took place at the Institute of Cardiology of Rio Grande do Sul, 66.9% of the sample had systemic arterial hypertension and 28.6% dyslipidemia, following the same pattern as in the present study (Silva, Wedge; Oliveira, 2021).

The advancement of cardiovascular diseases is directly related to variable and non-variable risk conditions, such as systemic arterial hypertension (SAH), diabetes mellitus (DM), dyslipidemia (DLP), obesity, and smoking. In addition, SAH is considered the main risk condition for coronary artery disease (Farias *et al*., 2021; Mello; Silva; Albuquerque, 2019).

The role of the nurse in the prevention of arterial hypertension and other pathologies that can be associated with the need to perform cardiac surgery is of paramount importance, and the nursing consultation is the moment when the patient's life habits can be known and his health conditions assessed. The nurse's role as an educator is then highlighted, and he or she should guide the patient about the need for healthier lifestyle habits and carry out the most effective follow-up of this situation (Farias *et al*., 2021; Rabelo *et al*., 2019)

Studies indicate that the main risk factors for coronary artery disease (CAD) are being male, over 45 years of age, or female over 55 years of age, having a family history, having hypertension, and being a smoker (Galli; Pear tree; Vietta, 2018). In this study, it was observed that coronary artery bypass grafting was the most performed by females and males, characterizing almost half of the sample of the present study.

A study carried out at the university hospital in Belo Horizonte points to the same finding about the type of surgery and highlights that among the 280 medical records in the sample, 54.3% underwent coronary artery bypass grafting, with a predominance of males (Braz *et al.*, 2018).

Some of these risk factors, such as gender and age, allow us to understand why more men have undergone cardiac coronary artery bypass grafting (CABG) and why the age group between 59 and 68 years was the one that performed CABG surgeries.

CABG is a well-established and successful surgical procedure in the treatment of coronary heart disease, in addition to having a low mortality rate as a result of cardiac surgery performed (Carvalho *et al.*, 2019; Freitas, 2021).

Regarding the length of hospital stay, the present study characterized the mean number of days of hospitalization in the ward before surgery, in the intensive care unit and the ward after cardiac surgery, and there was a coincidence of prevalence in the three categories, which ranged from 1 to 10 days, with results similar to those of another study (Carvalho *et al.*, 2019).

When the patient receives a diagnosis, many psychological changes can occur, triggering a significant emotional impact. This impact is especially important in the scenario of cardiac surgery, in which feelings of anxiety and fear are present (CASTRO *et al.*, 2019).

Throughout the operative period, the importance of the nurse's role as an educator is evident, guiding and clarifying doubts regarding the procedures that patients will undergo and the care that will be needed during the postoperative period (Silva; Araújo, 2022). It is important, throughout the process, that the emotional state is assessed and that measures are adopted to reduce anxiety, aiming at comprehensive and specific care according to the individual needs of each patient (Diniz *et al.*, 2021).

It is possible to observe that competence in the management of health services would be able to reduce the length of hospitalization and, as a consequence, reduce hospitalization expenses, increasing the availability of beds. Studies have shown that the shorter the patient's stay in the hospital, the lower the rates of morbidity and mortality and reestablishment of the prognosis, which makes it possible to resume daily activities and family life, cooperating with rehabilitation (Carvalho *et al.*, 2019).

In the present study, more than half of the sample represents the group that was discharged. Of the patients who died, 17% underwent CABG. A study carried out at the Faculty of Medicine of São José Rio Preto pointed out that of 190 people, 42% died, and 58% were discharged; of these 42% who died, 58% died after performing the CABG (Farias *et al.,* 2021).

In general, studies indicate that the majority of the population that underwent cardiac surgery was discharged from the hospital and had successful procedures (Carvalho *et al.*, 2019; Silva; Wedge; Oliveira, 2021).

Thus, the importance of characterizing sociodemographic aspects and variations, as well as associated pathologies in patients who need cardiac surgery, is evident so that nursing professionals can execute specific strategies according to the needs of each patient.

These strategies can be implemented from the preoperative period, an essential moment in which nurses can carry out educational activities to clarify possible doubts of the patient and companions and to reduce anxiety (Nascimento; Nascimento, 2023). It is up to the nurse to plan nursing care and supervise care, providing a better evolution and improving the quality of life of patients (Santos *et al.*, 2023). Discharge planning is essential, involving the training of patients and the adoption of self-care measures, with guidance on topics such as food, daily activities, and symptom management (Santos; Laprano; Conceição, 2020).

CONCLUSION

After the discussion, it was evident that age group and gender are aspects that contribute to the need to perform cardiac surgery and that pathologies such as SAH are present in most of the population that underwent cardiac surgery. This same population, most of the time, has more than one associated pathology, thus having as a consequence a minority of people who do not have any type of associated pathology. According to the literature, the present study also points to the fact that the number of people who were discharged after cardiac surgery is higher than the number of deaths.

Thus, it is possible to infer that nurses play a fundamental role in the entire perioperative period, going through fundamental stages that involve pre- and postoperative orientations, minimizing doubts, fears and anxieties, in addition to playing an educational role. During surgery, the nurse performs several functions which are sometimes not directly linked to the patient, but rather to their safety, and which in themselves are no less important. Thus, it is worth emphasizing the importance of the quality of guidance on all care involving new life habits, as well as on postoperative wound care.

As a lack of knowledge, it is evident that most of the medical records did not have notes regarding specific instructions provided to the patient during this period and which verbal and/or non-verbal feelings were expressed by the patients with heart disease during the operative period.

It is hoped that this study will be seen as a point of reflection for the physical and psychoemotional needs involved in cardiac surgery. We believe that this is the path to be taken on the subject so that care can be offered with quality and so that knowledge gaps can be filled and other realities known to improve nurses' actions in the perioperative period of cardiac surgery.

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