

**THE IMPACTS OF NURSING CARE ON PATIENTS IN THE
POSTOPERATIVE PERIOD OF MYOCARDIAL REVITALIZATION***OS IMPACTOS DOS CUIDADOS EM ENFERMAGEM AO PACIENTE EM PÓS-
OPERATÓRIO DE REVITALIZAÇÃO DO MIOCÁRDIO**LOS IMPACTOS DE LOS CUIDADOS DE ENFERMERÍA AL PACIENTE EN EL
POSOPERATORIO DE REVITALIZACIÓN DEL MIOCARDIO**LES IMPACTS DES SOINS INFIRMIERS CHEZ LE PATIENT EN PERIODE
POSTOPERATOIRE DE REVITALISATION DU MYOCARDE*

Maria Eduarda de Souza Ferreira

Rebeca Almeida Xavier

Rithianne Frota Carneiro

Lua Maria Rodrigues de Freitas

Abstract: Coronary artery bypass grafting (CABG) is the most common reconstructive cardiac surgery, and its postoperative period is marked by clinical instability and critical care, during which the nursing team provides direct care to the patient. This study aimed to analyze the scientific evidence on nursing care in the postoperative period of myocardial revascularization. It is an integrative review, conducted according to the six steps proposed by Mendes et al. (2008), with searches in SciELO Brazil, LILACS and BDEnf (the latter via the Virtual Health Library) between August and September 2024, including studies published between 2015 and 2022. Nine studies made up the sample, which were analyzed using the PICO strategy and organized into two categories: the identification of nursing care for patients in the postoperative period of myocardial revascularization (four studies) and the reporting of the complications most inherent to these patients (five studies). The articles indicate that the role of the nurse and nursing care are essential for signaling and preventing complications inherent to cardiac surgery, with emphasis on the early identification of risk factors, the team's prompt action and response, and practice based on the Systematization of Nursing Care, which contributes to continuity of care in patients' recovery.

Keywords: Myocardial Revascularization; Nursing Care; Thoracic Surgery.

Resumo: A cirurgia de revascularização do miocárdio (CRVM) é a cirurgia cardíaca reconstrutora mais comum, e seu pós-operatório é marcado por instabilidade clínica e por cuidado crítico, no qual a equipe de enfermagem presta assistência direta ao paciente. Este estudo teve como objetivo analisar as evidências científicas acerca dos cuidados de enfermagem no pós-operatório de revascularização do miocárdio. Trata-se de uma revisão integrativa, conduzida segundo as seis etapas propostas por Mendes et al. (2008), com busca nas bases SciELO Brasil, LILACS e BDEnf (esta última via Biblioteca Virtual em Saúde) entre agosto e setembro de 2024, e com inclusão de estudos publicados entre 2015 e 2022. Nove estudos compuseram a amostra, analisados segundo a estratégia PICO e organizados em duas categorias: a identificação do cuidado de enfermagem ao paciente em pós-operatório de revascularização do miocárdio (quatro estudos) e o relato das intercorrências mais inerentes a esses pacientes (cinco estudos). Os artigos apontam que o papel do enfermeiro e os cuidados de enfermagem são fundamentais para sinalizar e evitar quadros de intercorrência inerentes à cirurgia cardíaca, com destaque para a identificação prévia de fatores de risco, a atuação e a resposta rápida da equipe e a prática baseada na Sistematização da Assistência de Enfermagem, o que contribui para a continuidade do cuidado na recuperação dos pacientes.

Palavras-chave: Revascularização Miocárdica; Cuidados de Enfermagem; Cirurgia Torácica.

Resumen: La cirugía de revascularización del miocardio (CRM) es la cirugía cardíaca reconstructiva más común, y su posoperatorio está marcado por inestabilidad clínica y por cuidado crítico, en el cual el equipo de enfermería presta asistencia directa al paciente. Este estudio tuvo como objetivo analizar la evidencia científica sobre los cuidados de enfermería en el posoperatorio de revascularización del miocardio. Se trata de una revisión integrativa, realizada según las seis etapas propuestas por Mendes et al. (2008), con búsqueda en las bases SciELO Brasil, LILACS y BDeInf (esta última a través de la Biblioteca Virtual en Salud) entre agosto y septiembre de 2024, e inclusión de estudios publicados entre 2015 y 2022. Nueve estudios conformaron la muestra, analizados según la estrategia PICO y organizados en dos categorías: la identificación del cuidado de enfermería al paciente en posoperatorio de revascularización del miocardio (cuatro estudios) y el relato de las complicaciones más inherentes a estos pacientes (cinco estudios). Los artículos señalan que el papel del enfermero y los cuidados de enfermería son fundamentales para señalar y evitar cuadros de complicaciones inherentes a la cirugía cardíaca, con énfasis en la identificación previa de factores de riesgo, la actuación y la respuesta rápida del equipo y la práctica basada en la Sistematización de la Asistencia de Enfermería, lo que contribuye a la continuidad del cuidado en la recuperación de los pacientes.

Palabras clave: Revascularización Miocárdica; Atención de Enfermería; Cirugía Torácica.

Résumé: Le pontage aortocoronarien (revascularisation du myocarde) est la chirurgie cardiaque reconstructrice la plus courante, et sa période postopératoire est marquée par une instabilité clinique et par des soins critiques, durant lesquels l'équipe infirmière prodigue une assistance directe au patient. Cette étude visait à analyser les données scientifiques relatives aux soins infirmiers en période postopératoire de revascularisation du myocarde. Il s'agit d'une revue intégrative, menée selon les six étapes proposées par Mendes et al. (2008), avec une recherche dans les bases SciELO Brésil, LILACS et BDeInf (cette dernière via la Bibliothèque virtuelle en santé) entre août et septembre 2024, incluant des études publiées entre 2015 et 2022. Neuf études ont constitué l'échantillon, analysées selon la stratégie PICO et organisées en deux catégories : l'identification des soins infirmiers destinés au patient en période postopératoire de revascularisation du myocarde (quatre études) et le relevé des complications les plus inhérentes à ces patients (cinq études). Les articles indiquent que le rôle de l'infirmier et les soins infirmiers sont fondamentaux pour signaler et prévenir les complications inhérentes à la chirurgie cardiaque, en insistant sur l'identification préalable des facteurs de risque, l'action et la réponse rapides de l'équipe et la pratique fondée sur la Systématisation des soins infirmiers, ce qui contribue à la continuité des soins durant la récupération des patients.

Mots-clés: Revascularisation myocardique ; Soins infirmiers ; Chirurgie thoracique.

1 Introduction

According to the World Health Organization (WHO), in its latest global report on noncommunicable diseases, cardiovascular diseases are the leading cause of death in the world and, in recent years, have been drastically reduced in developed countries; however, they still need to be reduced in low- and middle-income countries, which has become a global goal. In the last year, hospitalizations in the Unified Health System (SUS) due to cardiovascular diseases totaled about 516,163, the amount spent on these patients was R\$ 1,593,806,957.52 and the number of deaths reached 41,357 individuals, representing a high cost and a major public health problem (CANI et al., 2019).

From January 2019 to April 2020, procedures involving myocardial revascularization totaled 30,460 surgeries performed, of which 18,456 (61%) were urgent surgeries (BRASIL, 2020). The urgent nature implies increased risks for the patient. These data may therefore highlight the importance of primary care in prevention and health promotion (LUIZA et al., 2023).

Coronary artery bypass grafting (CABG) is a reconstructive type of cardiac surgery that consists of implanting a coronary arterial graft, most commonly using the saphenous vein or the internal mammary artery and, in some cases, the radial artery. This graft aims

to bypass the occluded artery and restore perfusion of the affected coronary artery, thereby preserving the myocardium (CAMILA et al., 2016).

These surgical therapies are complex, regardless of the operative phase, which requires adequate treatment in all of these phases. However, the postoperative (PO) period of cardiac surgery, during which the patient's post-anesthetic and post-surgical-stress recovery is observed and assisted, is marked by instability of the patient's clinical condition and is full of particularities, mainly because it is a period of critical care (DUARTE et al., 2012).

Improvements in surgical techniques and advances in cardiac anesthesia, together with better intensive postoperative care, have resulted in a decrease in the mortality rate in patients after coronary artery bypass grafting (INAMDAR et al., 2019).

Thus, since direct care of critically ill patients falls to nurses, these professionals must pay redoubled attention to such patients, as they may present different changes during the course of the disease.

Thus, the postoperative period of cardiac surgery requires from the health team continuous observation, rapid decision-making and highly complex care. Nursing team professionals make up the largest number of this team and work full-time, providing direct care to the patient with the aim of minimizing possible complications, such as changes in blood pressure levels, arrhythmias and ischemia, in addition to maintaining the balance of organ systems and providing pain and discomfort relief (SABRINA et al., 2012).

Considering the context, it is observed that the continuous history of damage caused by cardiovascular diseases in the community is a public health problem. This study proposes to analyze the needs of the patient in the postoperative period of cardiac surgery identified by nurses and to discuss nursing care based on these needs. Therefore, it is expected that this study will contribute to the development of a nursing care regulation aimed at the immediate postoperative period (IPO) of CABG.

In this context, it should be noted that cardiac surgeries are classified as corrective, reconstructive and substitutive, and are indicated only when clinical treatment is unable to provide a cure and/or improvement in the patient's quality of life. It should be emphasized that the most common cardiac surgery is the reconstructive one, especially myocardial revascularization, which is the theme emphasized in this study (REVISTA JRG DE ESTUDOS ACADÊMICOS, 2022).

2 Rationale and relevance

According to the World Health Organization (WHO), the incidence of cardiovascular diseases increases very frequently in developed countries, and it is estimated that by 2030 more than 23 million people will die annually from cardiovascular diseases (RADOVANOVIC et al., 2014).

Data extracted by the Brazilian Society of Cardiology (SBC) show that, although the incidence and mortality from cardiovascular diseases have increased exponentially, over a 30-year interval (1990-2019) the age-standardized rates per 100,000 inhabitants have shown progressive improvement, but the situation is still alarming.

The demand for knowledge on the subject is indispensable; even though there are works in the literature on the topic, there are some limitations, among them incomplete texts in the selected database.

In light of the above, this study is justified in order to reinforce the importance of primary health care and the role of nurses in improving this care and assistance.

Regarding its relevance, considering that it is a public health problem and that nursing professionals are the active agents in immediate care after surgery and responsible for prevention and health promotion, research on this topic is necessary to support care practices. It also serves to foster information for health professionals, the scientific community and the general public.

3 Methods

This is an integrative review study that points out the impacts of nursing care on patients in the postoperative period of myocardial revascularization. It is a summary of the literature on a specific concept or content area, in which the research is summarized, analyzed and overall conclusions are drawn (MENDES; SILVEIRA; GALVÃO, 2008). The integrative review has the potential to build knowledge in nursing, producing grounded and uniform knowledge for nurses to carry out quality clinical practice.

In addition, it was able to reduce some obstacles to the use of scientific knowledge, making research results more accessible, since in a single study the reader has access to several pieces of research, that is, the method allowed agility in the dissemination of knowledge (MENDES; SILVEIRA; GALVÃO, 2008).

The study followed the model proposed by Mendes et al. (2008), which indicates six steps necessary to build an integrative review, similar to the stages of conventional research development. The next topics of this section refer to the steps described by the authors.

The choice of a topic that aroused the reviewer's interest made this process more encouraging, and another aspect pointed out was the choice of a problem experienced in clinical practice. The scholars consider the first step as the guide for conducting a well-elaborated integrative review (MENDES; SILVEIRA; GALVÃO, 2008).

The first step was to choose a subject clearly and specifically, seeking to give the process the form of a directed and complete analysis. In light of this, the guiding question of this work is: What is the importance of the nursing professional in the care of patients in the postoperative period of myocardial revascularization?

In the second step, the inclusion and exclusion criteria were established, and the search strategy is a technique or a set of rules to make it possible to match a formulated question with the information stored in a database.

In this step, the inclusion and exclusion criteria for the articles were also defined. The procedure was conducted in a careful and transparent manner, since the representativeness of the sample is an indicator of the depth, quality and reliability of the final conclusions of the review (MENDES; SILVEIRA; GALVÃO, 2008).

The search was carried out in the following databases: Scientific Electronic Library Online Brazil (SciELO Brazil) and the Virtual Health Library (BVS), focusing on the Latin American and Caribbean Health Sciences Literature (LILACS) and the Brazilian Nursing Database (BDEnf).

The searches were carried out with the following keywords: Myocardial Revascularization, Nursing Care, Thoracic Surgery. Different combinations were used in the databases.

The inclusion criteria used for selecting works for this integrative review were: works published in national and international journals that address the influence of nurses and their immediate care in the postoperative period of coronary artery bypass surgery, during the period 2015-2022, with research results of quantitative and

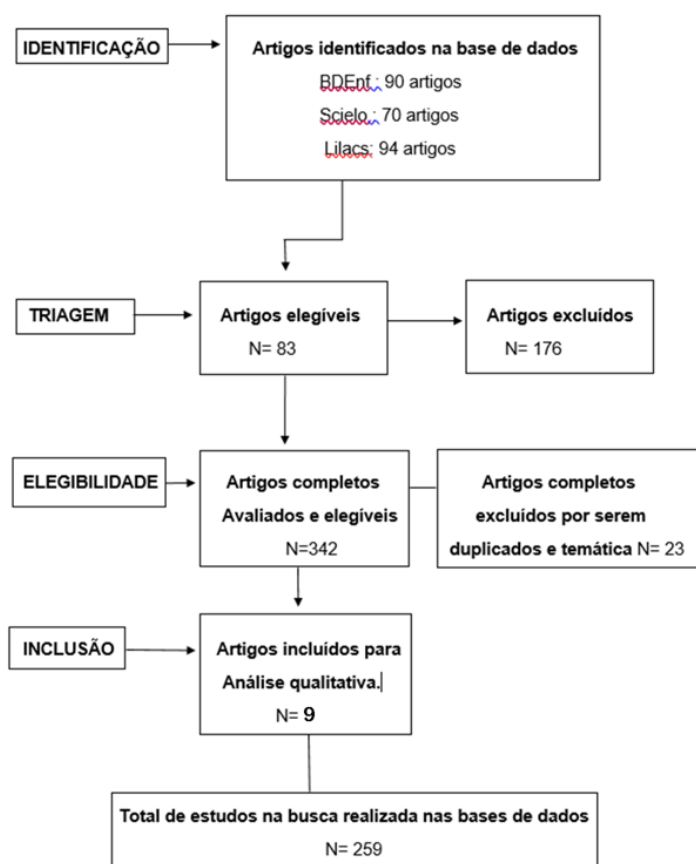
qualitative design and theoretical studies, full-text articles, and articles developed by health professionals.

The exclusion criteria used were: incomplete articles, integrative and systematic reviews, articles and publications not connected to the guiding question of this research, editorials and letters to the editor.

The search was conducted online, on the aforementioned platforms and databases, applying the inclusion criteria. The collection period was from August to September 2024.

To organize the search, an electronic spreadsheet was used, in which the numbers of articles found, included, published and excluded, and the final selection from each search source, were cataloged.

Figure 1 – Flowchart: selection of the articles included in the review. Fortaleza, CE, 2024



Source: Prepared by the authors.

In the third step, a detailed reading of the articles comprising this study was carried out in order to collect information using a collection instrument (Appendix A).

It covered aspects related to year of publication, authors, title, objectives, methodology (type of study and setting), results (the impacts of nursing care on patients in the postoperative period of myocardial revascularization) and conclusion of the study (Chart 1).

Chart 1 – Identification of the categories of the works found

Categories	Articles
To identify nursing care for patients in the postoperative period of myocardial revascularization	A3, A6, A7, A9

Categories	Articles
To report which complications are most inherent to patients in the postoperative period of myocardial revascularization	A1, A2, A4, A5, A8

Source: Prepared by the authors.

Following this, the items selected for recording will be:

Item 1: Identification of the work (article title, journal, year, volume and issue number, place of publication, objectives, population studied, results, conclusion);

Item 2: The source of the article;

Item 3: The study design (quantitative, qualitative, quali-quantitative, case study);

Item 4: Data collection methods (interview, experimental study, questionnaire).

In the fourth step, the evaluation of the studies included in the integrative review was observed, equivalent to data analysis in conventional research, in which appropriate tools were employed. The analysis was carried out critically, seeking explanations for different or conflicting results across the studies (MENDES; SILVEIRA; GALVÃO, 2008).

In the fifth step, the results were interpreted, corresponding to the discussion of the main results in conventional research. Based on the results of the critical evaluation of the included studies, a comparison with theoretical knowledge was made, along with the identification of conclusions and implications resulting from the integrative review. Owing to the broad review conducted, it was possible to identify factors that affect nursing policy and care (MENDES; SILVEIRA; GALVÃO, 2008).

Finally, the last step focused on preparing the document that described the steps taken during the integrative review and the main results evidenced from the analysis of the included articles (MENDES; SILVEIRA; GALVÃO, 2008).

4 Results and discussion of the research

The descriptive characteristics and outcomes of interest of the studies are presented in Chart 2, according to the PICO strategy. The included studies were published between 2015 and 2022, and the intervention methods proposed in the articles addressed the impacts of nursing care in the postoperative period of myocardial revascularization.

Knowing that cardiovascular diseases are one of the main causes of death in Brazil, are chronic in nature and, in the great majority, require surgical treatment, recovery after the surgical act involves a series of complex and well-elaborated care, which the nursing team is qualified to provide, since these professionals are in direct contact with the patient, often from the beginning of treatment until the surgery itself, and know this patient in his or her plurality.

Thus, they will be able to detect early any complications the patient suffers and will be able to intervene as quickly as possible, ensuring greater success during the postoperative period. The studies included in this review show the beneficial impact of nursing care right after the postoperative period. Two articles from 2012, one from 2015, one from 2018 and one from 2021 were included. The journals of the included articles were Portal de Revistas de Enfermagem (1), Revista Brasileira de Enfermagem (1), Pesquisa Escola de Enfermagem Anna Nery (1), ACTA Paulista de Enfermagem (1) and Texto e Contexto da Enfermagem (1). As for the types of studies, the following were included: retrospective descriptive (1), exploratory with a qualitative approach (1), exploratory descriptive (1), quantitative, descriptive and correlational (1) and semi-structured interview (1).

Chart 2 – General information extracted from the selected studies for the composition of the integrative review

N ^o	Author, year	Title	Type of study	Population (P)	Intervention (I)	Outcome (O)
1	Morelato et al. (2022)	Risk of mediastinitis in the postoperative period of coronary artery bypass surgery	Observational, cross-sectional	Consecutive, non-probabilistic sample consisting of adult patients undergoing myocardial revascularization	A non-probabilistic, consecutive sample was composed of patients who met the inclusion criteria: over 18 years of age, who underwent coronary artery bypass surgery. During the data collection period, from January 2017 to July 2019, 373 cardiac surgeries were performed, of which 207 (55.5%) were surgeries to correct valve diseases (repair/replacement), 111 (29.7%) were myocardial revascularization surgeries, 34 (9.2%) were surgeries to correct aortic diseases (dissection/aneurysm) and 21 (5.6%) were surgeries to correct heart defects.	It is believed that the implementation of a mediastinitis prevention protocol may support a better assessment of the risk of developing mediastinitis and help summarize data that may support new research with more robust methods, comparing the prevalence and incidence of mediastinitis before and after the implementation of the protocols
2	Covalski et al. (2021)	Postoperative period of cardiac surgeries: prevalent complications within 72 hours	Cross-sectional, analytical study with a quantitative approach.	Analysis of the medical records of patients who underwent cardiac surgery at the institution and were referred to the intensive care unit (ICU) after the procedure.	The types of surgeries found were grouped according to similarity in order to allow a more consistent analysis of the data. Thus, the groupings were: aortic corrections, corrections of cardiac septal malformations, Coronary Artery Bypass Grafting (CABG), CABG + correction of Ventricular Septal Defect (VSD), CABG + valve replacements, CABG + valvuloplasties, CABG + correction of aortic dissection, double valve replacement, pericardiectomy,	Complications within the first 72 hours of the postoperative period were observed in 75.8% of patients, a rate higher than that identified in other studies, 4,2,6 in which complications affected around 58%, 52% and 21% of patients. Deaths within 72 hours of the postoperative period represented 4.4% of the study population, with a mortality rate throughout the entire hospital stay of 9.5%. Considering the 72-hour interval, no data were found in the literature for comparison of results.

N ^o	Author, year	Title	Type of study	Population (P)	Intervention (I)	Outcome (O)
					resection of intracardiac tumor, mechanical aortic valve replacement + mechanical mitral valve replacement + correction of Patent Foramen Ovale (PFO), single valve replacements, biological aortic valve replacement + mitral valvuloplasty, straight aortic tube + aortic valvuloplasty, mitral valvuloplasty + correction of Atrial Septal Defect (ASD) and valvuloplasties. To characterize the sample, descriptive statistics were used, such as mean, median and standard deviation of the numerical variable, in addition to minimum and maximum values. Percentages were also used to analyze categorical variables in terms of frequency. Data normality was analyzed by the Kolmogorov-Smirnov test. Numerical variables were compared using the Mann-Whitney test and categorical variables were analyzed by the Chi-square test, both considering $p < 0.05$ for significant results. Statistical analyses were performed using the BioEstat 5.0 program.	The results found in the present study pointed to a high prevalence of complications in the first 72 hours of the postoperative period of cardiac surgeries, in some cases even associated with more severe aspects, such as the need for operative reintervention and mortality. The most prevalent categories of complications were cardiac (among which arrhythmias, hypertension and arterial hypotension stood out), followed by renal, hydroelectrolytic, pulmonary, hematological and neurological. In terms of frequency, the complications identified here were similar to those in other studies in the literature. Understanding these aspects allows the nursing team to anticipate possible changes that may affect patients in this period, and their early identification is a determining factor in ensuring appropriate and satisfactory treatment. In a moment of great instability such as the postoperative period of cardiac surgeries, knowledge about the aspects that prevail in this scenario allows professionals to improve the care provided, planning and developing

The impacts of nursing care on patients in the postoperative period of myocardial revitalization

N ^o	Author, year	Title	Type of study	Population (P)	Intervention (I)	Outcome (O)
						appropriate actions in order to ensure an adequate and prompt recovery.
3	Reisdorfer et al. (2021)	Nursing care for patients in the postoperative period of cardiac surgery in the intensive care unit	Exploratory study with a qualitative approach	27 members of the nursing team working in the intensive care unit	Data collection was carried out by the principal researcher (a nurse, a master's student in a graduate program, with experience in intensive care) through semi-structured interviews, in March and April 2016, which were audio-recorded with authorization and subsequently transcribed in full.	The study identified critical nodes related to nursing care for patients in the postoperative period of cardiac surgery, which are associated with weaknesses in professional qualification, limited skill and technical knowledge to provide the specific care required by this patient, and the (dis)organization of work in the ICU, which may negatively affect patient safety.
4	Liberato et al. (2020)	Factors that contribute to the readmission of patients who underwent cardiac surgery	Exploratory and descriptive research	Twenty-two patients readmitted after cardiac surgery were invited to participate in the study.	Collection took place from March to July 2019 and the instrument developed to collect information provided precise data on the patient's disease history	Readmission was also related to new hospitalization after surgery and the existence of some illness in the postoperative period. It was also found that most patients showed reluctance to talk about this subject, leading to the perception that they understood that their lifestyle habits had led them to that situation.
5	Andrade et al. (2019)	Complications in the immediate postoperative period of myocardial revascularization	Retrospective cohort	Convenience sample composed of 50 medical records of patients over 18 years of age who underwent coronary artery bypass surgery and survived	Data collection was carried out by one of the researchers by means of an instrument containing sociodemographic identification data, personal clinical and surgical history, continuous-use medications, vital signs, invasive devices used in the pre- and postoperative	In the present study, the main complications identified in the IPO were of cardiac or hematological origin, and only the non-modifiable risk factor family history of heart disease showed a statistical correlation with cardiac complication, and the modifiable risk factor dyslipidemia, with the nursing diagnosis

N ^o	Author, year	Title	Type of study	Population (P)	Intervention (I)	Outcome (O)
				the first 72 hours of the postoperative period.	periods, duration of surgery, cardiopulmonary bypass time, length of stay in the intensive care unit (ICU), surgical complications, nursing diagnoses and number	impaired skin integrity. The present study also identified as main complications those of hematological origin, represented by bleeding and hemodynamic instability, followed by those of cardiological origin, such as arrhythmias, hypotension, atrial fibrillation and low cardiac output syndrome.
6	Silva et al. (2018)	Nursing care in complications in the postoperative period of myocardial revascularization surgery	Descriptive-retrospective study with a quantitative approach	Analysis of 80 medical records of individuals who underwent myocardial revascularization surgery	For data collection, a form prepared by the researchers was used, containing sociodemographic variables – sex, age, race, origin and marital status – and clinical variables – which identify whether the patient has a history of systemic arterial hypertension, diabetes mellitus, dyslipidemia, chronic obstructive pulmonary disease, kidney disease, previous acute myocardial infarction, cerebrovascular disease, smoking and body mass index. The form also presents a list of complications and possible related nursing care, which were identified in the national literature	The study allows the conclusion that monitoring of vital signs, recognition of changes in blood pressure, monitoring of fluid balance and of respiratory patterns for bradypnea, tachypnea and hyperventilation were the nursing care measures most often provided to patients in the postoperative period of CABG.
7	Silva et al. (2017)	Nursing interventions in patients in the cardiac intensive care unit of a university	Descriptive, retrospective, cross-sectional	The sample consisted of 65 medical records of patients who underwent myocardial	The sample consisted of 65 medical records of patients who underwent myocardial revascularization surgery. An instrument prepared	The correlation of the activities prescribed by nurses in the cardiac ICU with the activities proposed by the NIC points to feasible qualified care, with a

The impacts of nursing care on patients in the postoperative period of myocardial revitalization

N ^o	Author, year	Title	Type of study	Population (P)	Intervention (I)	Outcome (O)
		hospital who underwent myocardial revascularization surgery.		revascularization surgery.	by the author was used to identify and compare the activities and interventions of the Nursing Interventions Classification with the activities prescribed by nurses of the cardiac unit.	standardization of language and classification, which constitutes a source of planning, grounding and improvement, contributing to nursing practice.
8	Koerich et al. (2016)	Factors associated with mortality of patients who underwent myocardial revascularization surgery	Quantitative, exploratory, descriptive and retrospective.	The sample used was the medical records of 1,447 patients between 2005 and 2013.	The study had a quantitative, exploratory, descriptive and retrospective focus, set in a public hospital institution that is a cardiovascular reference center for Santa Catarina. Documents, records and statistical data from the institution itself related to patients who underwent CABG over the last nine years, that is, from 2005 to 2013, were used.	The results show that the mortality rate of the institution studied (5.3%) is slightly above the national average of 4.8%(3). Regarding the profile of the patient who undergoes CABG, in a study conducted in southern Brazil, age ranged from 32 to 86 years and the age group with the highest incidence was between 51 and 70 years, in which 688 individuals (68.5%) were male(9). This information confirms the findings of the present study and the tendency of CABG to be indicated for a male and older population
9	Lanzoni et al. (2015)	Factors that influence the process of experiencing cardiac revascularization	Qualitative, exploratory and descriptive	33 participants from a reference hospital	The intervening factors identified, of a personal and institutional nature, were: waiting for surgery, fear of death, use of drains and orotracheal tube in the postoperative period, pain management, access to medication, religiosity, presence of scars, support from family and health professionals.	Data analysis resulted in two categories, named: contrasting feelings experienced during hospitalization and unveiling the perception in the postoperative period.

With CABG considered one of the most frequent surgeries performed in the SUS, over the years many studies have been carried out and new techniques have been used and improved to advance this type of surgery and consequently increase its success rates.

According to Koerich et al. (2016), in the health field, nursing is the only profession that includes in its training theory combined with practice in relation to health management or administration. The potential of the nursing professional to contribute to changing the reality of chronic diseases, especially CVDs, is highlighted, through the identification of risk factors and the prevention of potential events that complicate the health status of individuals affected by CVD, with the aim of ensuring the quality of the care provided.

The articles characterized in this topic highlight the importance of the nurse and of nursing team care in the cardiac postoperative period, evidencing the action and rapid response to risk factors.

After surgery, many patients, especially older adults, show a decrease in quality of life, given the challenges of maintaining their lifestyle. Therefore, the success of the surgery also depends on the nursing care provided in the postoperative period, such as the use of the scientific tool Nursing Care Systematization (SAE). (Enferm. Foco, 2020)

It is necessary to reinforce that there are non-pharmacological therapies used by nursing professionals for pain relief. Examples of methods include the application of heat and ice, the use of cushions, attention and even dialogue. In this way, patients' fear is reduced and a better recovery is favored. (Enferm. Foco, 2020)

Thus, the nurse's role in providing the necessary care is related to the prior identification of risk factors and to practice based on the systematization of nursing care, with the identification of nursing diagnoses. Koerich et al. (2016) conclude in their study that their results provide support for nursing to act with preventive measures for the occurrence of CVDs, as well as in the prevention and early identification of complications related to CABG.

4.1 To identify nursing care for patients in the postoperative period of myocardial revascularization

4.2 To report which complications are most inherent to patients in the postoperative period of myocardial revascularization

Given the nature of surgical complications and the importance of the nursing team in identifying risk factors for this situation, the nursing team's difficulties in preventing harm are related to the challenges professionals face in perceiving and treating these risk factors. The articles included in this topic relate to the strategies raised by nurses and/or researchers to reduce these difficulties.

In the study by Rafaela et al. (2022), which aimed to classify patients according to the risk of developing mediastinitis in the postoperative period of myocardial revascularization surgery, it was shown that arterial hypertension was the most frequent comorbidity, ranging from 82.8% to 89.9%, data that corroborate the study conducted in a capital of the Brazilian Northeast, in which all patients (100%) who underwent myocardial revascularization surgery had systemic arterial hypertension (Rafaela et al., 2022).

In one of the highlighted articles, another aspect worth noting in the postoperative period of cardiac surgery is the fact that patients remain with impaired physical mobility for prolonged periods, hindering the action of the calf muscles and, consequently, impairing venous return. (Sobecc, 2019)

In this sense, the prospective study analyzed the medical records of 72 patients undergoing CABG and identified that the largest number of complications was linked to hydroelectrolytic disturbance (61%), acid-base disturbance (35%), glycemic disturbance (32%), cardiac (13%) and pulmonary (10%). The other complications were of renal (7%), neurological (6%), infectious (3%) and hepatic (1%) origin. Another analysis of 145 adult patients undergoing cardiac surgery (45% CABG, 26% valve surgery, 18% combined surgery and 11% other types of cardiac operation) showed that the main postoperative complications in the first 24 hours included blood loss (58%), pulmonary dysfunction (34%), arrhythmias (6%) and need for reintubation (3%). (Sobecc, 2019)

In the study by Danieli Covalski et al. (2021), the presence of comorbidities and/or risk factors showed a significant association with the occurrence of postoperative complications. This aspect was prevalent in 92.9% of patients, among which SAH, former smoking, diabetes mellitus, heart failure and dyslipidemia stood out. Directly associated with this fact, most patients used continuous-use medications, with more than one third being polymedicated, according to the World Health Organization classification. (Covalski et al., 2021)

Ângela Maria et al. (2020) point out that it was possible to observe that the patients who had readmissions were hypertensive, smokers, diabetic and alcohol users, in addition to evidencing a relationship between lifestyle and habits and hospital readmission. (Enferm. Foco, 2020)

Furthermore, Ângela Maria et al. (2020), in light of the above, evidenced the predominance of antihypertensives, which are medications used for Systemic Arterial Hypertension (SAH), this being an important risk factor for the development of CVD.

However, it is believed that knowing the potential risk factors and preventing them from the preoperative period onward may favor the postoperative evolution of these patients, in view of preventive measures and early detection of possible complications.

According to a study published by Liliane et al. (2018), the most common complications during the postoperative period are those related to the circulatory system, which occur in 30 percent of patients. The following chart, prepared by the authors, details well the most common complications and the percentage with which they occur.

5 Final considerations

The present study aimed to analyze the scientific evidence on nursing care in the postoperative period of myocardial revascularization. Thus, two topics were systematized, one focused on identifying nursing care for patients in the postoperative period of myocardial revascularization, and the second focused on reporting which complications are most inherent to patients in the postoperative period of myocardial revascularization.

The articles indicate that the role of the nurse, and nursing care, are fundamental to signal and avoid complications inherent to cardiac surgery. Knowing that nursing is the professional category responsible for comprehensive care during the pre-, intra- and postoperative periods of patients, the importance of the profession is highlighted for the prevention and identification of risk factors and for professional practice based on the systematization of nursing care, evidencing the action and rapid response for the continuity of care in patients' recovery.

References

- ALMEIDA, P. S.; PELLANDA, L. C.; CAREGNATO, R. C. A.; SOUZA, E. N. Implementação de orientações de enfermagem aos pacientes pré-operatórios de cirurgia cardíaca em meio digital. **Revista SOBECC**, v. 22, n. 2, p. 68-75, 2017.
- AMORIM, T. V.; OLIVEIRA, S. A. M. Processo cirúrgico cardíaco e suas implicações no cuidado de enfermagem: reflexão. **HU Revista**, v. 41, n. 3-4, 2015.
- ANDRADE, A. Y. T. D.; TANAKA, P. S. D. L.; POVEDA, V. D. B.; TURRINI, R. N. T. Complicações no pós-operatório imediato de revascularização do miocárdio. **Revista SOBECC**, v. 24, n. 4, p. 224-230, 2019.
- BARRETA, J. C.; AUDA, J. M.; ANTONIOLLI, D.; BARANCELLI, M. D. C. Pós-operatório em cirurgia cardíaca: refletindo sobre o cuidado de enfermagem. **Revista de Pesquisa Cuidado é Fundamental Online**, v. 9, n. 1, p. 259-264, 2017.
- BRANCO, C. S. P. C.; PEREIRA, H. O. Cuidados de enfermagem ao paciente em pós-operatório imediato de cirurgia de revascularização do miocárdio. **Enfermagem Revista**, v. 19, n. 1, 2016. Disponível em: <https://periodicos.pucminas.br/index.php/enfermagemrevista/article/view/11639/10314>. Acesso em: 11 abr. 2024.
- BRASIL. Ministério da Saúde. **Portaria GM n. 2.994, de 2022**: Protocolo de Síndrome Coronariana Aguda (SCA). Brasília, DF: Ministério da Saúde, 2022. Disponível em: <https://www.gov.br/saude/pt-br/assuntos/pcdt/arquivos/2022/portal-portaria-gm-2-994-lciam-e-protocolo-de-sca-1.pdf>. Acesso em: 13 mar. 2024.
- BRIZOLA, J.; FANTIN, N. Revisão da literatura e revisão sistemática da literatura. **Revista de Educação do Vale do Arinos - RELVA**, v. 3, n. 2, 2016.
- CABRAL, J. V. B.; CASTRO, C. J. S. Cuidado de enfermagem no pós-operatório de cirurgia cardíaca pediátrica: revisão integrativa. **Revista Enfermagem Contemporânea**, v. 9, n. 1, p. 118-126, 2020.
- CAMPONOGARA, S.; SOARES, S. G. A.; SILVEIRA, M.; VIERO, C. M.; BARROS, C. S. D.; CIELO, C. Percepção de pacientes sobre o período pré-operatório de cirurgia cardíaca. **Revista Mineira de Enfermagem**, v. 16, n. 3, p. 382-390, 2012.
- CANI, K. C.; ARAUJO, C. L. P.; KARLOH, M.; ALEXANDRINO, D. F. H.; PALÚ, M.; ROJAS, D. B.; BONORINO, K. C. Características clínicas de pacientes submetidos à cirurgia de revascularização do miocárdio. **ASSOBRAFIR Ciência**, v. 6, n. 3, p. 43-54, dez. 2015.
- COPPETTI, L. D. C.; STUMM, E. M. F.; BENETTI, E. R. R. Considerações de pacientes no perioperatório de cirurgia cardíaca referentes às orientações recebidas do enfermeiro. **Revista Mineira de Enfermagem**, v. 19, n. 1, p. 113-126, 2015.
- COSTA, T. R. M.; FLORÊNCIO, P. C. M.; CASTRO, C. A. L.; RUIZ, B. A.; SOUZA, C. S.; BARBOSA, K. K. S.; BARROS, M. A. L. Complicações dos métodos de revascularização cardíaca em pacientes que sofreram infarto agudo do miocárdio. **Revista Eletrônica Acervo Saúde**, v. 12, n. 11, e4834, 2020.

- CUNHA, L. M.; SOUSA, P. M.; LIMA, A. V. M.; CUNHA, A. N. A. Prevalência e distribuição de fatores de risco cardiovascular em portadores de doença arterial coronariana no Norte do Brasil. **Revista da Faculdade de Ciências Médicas de Sorocaba**, v. 20, n. 3, p. 167-173, 2018.
- DÖRFER, A. P. R.; LEAL, S. M. C.; MANCIA, J. R. Cuidados de enfermagem ao paciente no pós-operatório de cirurgia cardíaca, na Unidade de Terapia Intensiva. 2020. Disponível em: <https://docs.google.com/document/d/1JDYsMjMwGXSAoIui6AxtPqxydr1CKDlj19ey3dJxFaA/edit>. Acesso em: 15 abr. 2024.
- DUARTE, S. C. M. *et al.* O cuidado de enfermagem no pós-operatório de cirurgia cardíaca: um estudo de caso. **Escola Anna Nery Revista de Enfermagem**, 2012.
- GALVÃO, M. C. B.; PLUYE, P.; RICARTE, I. L. M. Métodos de pesquisa mistos e revisões de literatura mistas: conceitos, construção e critérios de avaliação. **InCID: Revista de Ciência da Informação e Documentação**, v. 8, n. 2, p. 4-24, 2017.
- GARCIA, R. P.; BUDÓ, M. D. L. D.; SCHWARTZ, E.; SIMON, B. S.; SILVA, F. M. D. Apoio social frente à necessidade de cuidado após infarto do miocárdio. **Revista Brasileira de Enfermagem**, v. 68, p. 649-655, 2015.
- GOMES, E. T.; SILVA, J. I. D.; BEZERRA, S. M. M. S. Elaboração da escala de avaliação do conhecimento de pacientes acerca da cirurgia cardíaca. **Revista SOBECC**, v. 25, n. 4, p. 227-233, 2020.
- KAHL, E. R. P. Y.; BRIÃO, R. C.; COSTA, L. M. D.; SILVEIRA, L. R.; MORAES, M. A. P. D. Cenário ambulatorial de pacientes com sítio cirúrgico infectado após intervenção cardíaca. **Revista Gaúcha de Enfermagem**, v. 40, 2019.
- KOERICH, C.; LANZONI, G. M. M.; HIGASSI, G. D. C.; ERDMANN, A. L.; MEIRELLES, B. H. S.; BAGGIO, M. A. Cirurgia de revascularização do miocárdio: características da internação e alterações relacionadas ao tempo de internação. **Revista Eletrônica de Enfermagem**, v. 19, a45, 2017. Disponível em: <http://doi.org/10.5216/ree.v19.42870>. Acesso em: 21 abr. 2024.
- LIMA, C. A.; RICHTRMOC, M. K.; LEITE, W. S.; SILVA, D. A. R. G.; LIMA, W. A.; CAMPOS, S. L.; ANDRADE, A. D. D. Impacto do fast track em cirurgia cardíaca de adultos: desfechos clínicos e hospitalares. **Revista Brasileira de Terapia Intensiva**, v. 31, p. 361-367, 2019.
- LIMA, M. D. F.; AGUIAR, L. A.; MELO E OLIVERIA, M. A.; ALMEIDA NETO, O. P.; FIGUEIREDO, V. N.; MAGNABOSCO, P. Impacto da cirurgia de revascularização miocárdica na qualidade de vida. **Revista de Enfermagem UFPE on line**, v. 14, e243994, 2020. Disponível em: <https://doi.org/10.5205/1981-8963.2020.243994>. Acesso em: 25 abr. 2024.
- LIMA, V. R. D.; LEAL, C. C. G.; FLÁVIO, A. G. C. Complicações pós-operatórias em idosos submetidos à revascularização do miocárdio. **CuidArte, Enfermagem**, p. 48-54, 2014.
- LINS, R. A. *et al.* Boas práticas executadas pela enfermagem ao paciente submetido a revascularização miocárdica. **Research, Society and Development**, v. 11, n. 2, e43611225920, 2022. DOI: <http://dx.doi.org/10.33448/rsd-v11i2.25920>.
- LOPES, R. O. P.; CASTRO, J.; NOGUEIRA, C. S. C.; BRAGA, D. V.; GOMES, J. R.; SILVA, R. C.; BRANDÃO, M. A. G. Complicações do pós-operatório imediato de cirurgia cardíaca eletiva: estudo transversal. **Revista de Enfermagem Referência**, v. 4, n. 22, p. 23-32, 2019.
- MANTOVANI, M. F.; MERCÊS, N. N. A.; SILVA, Â. T. M.; SOUZA, P. B. Sistemas de cuidados à saúde de pessoas com infarto do miocárdio: revisão da literatura. **Cogitare Enfermagem**, v. 24, 2019.

MATIOLI, K. B. B.; MORAES FILHO, I. M.; SOUSA, T. V.; PEREIRA, M. C.; SILVA, R. M.; SÁ, E. S.; OLIVEIRA, M. L. C. Delirium: prevalência e fatores associados ao pós-operatório de cirurgia cardiovascular em idosos. **Revista Baiana de Enfermagem**, v. 35, 2021.

MENDES, K. S.; SILVEIRA, R. C. C. P.; GALVÃO, C. M. Revisão integrativa: método de pesquisa para a incorporação de evidências na saúde e na enfermagem. **Texto & Contexto - Enfermagem**, v. 17, n. 4, p. 758-764, 2008.

MENEZES, T. C. D.; BASSI, D.; CAVALCANTI, R. C.; BARROS, J. E. S. L.; GRANJA, K. S. B.; CALLES, A. C. D. N.; EXEL, A. L. Comparações e correlações da intensidade da dor e da força muscular periférica e respiratória no pré e pós-operatório de cirurgia cardíaca. **Revista Brasileira de Terapia Intensiva**, v. 30, p. 479-486, 2018.

NEVES, M. **Título do Trabalho/Monografia**. Brasília: UNICEPLAC, 2016. Disponível em: https://dspace.uniceplac.edu.br/bitstream/123456789/87/1/Monique%20Neves_1320164057.pdf. Acesso em: 18 abr. 2024.

OLIVEIRA, J. D. C.; FANTINATI, M. S. Perfil de pacientes submetidos à cirurgia cardíaca e preditores das complicações pós-operatórias. **Revista JRG de Estudos Acadêmicos**, v. 5, n. 10, 2022. Disponível em: <http://www.revistajrg.com/index.php/jrg/article/view/355/432>. Acesso em: 19 abr. 2024.

PAIVA, A. C. R.; ARAÚJO, B. S.; CARVALHO, B. R.; ARANTES, D. C.; MARINHO, L. M.; SILVA, M. S.; MOREIRA, L. R. Checklist de cirurgia segura: análise do preenchimento da ficha de verificação no pré, trans e pós-operatório. **Enfermagem Revista**, v. 18, n. 2, p. 62-80, 2015.

PASSINHO, R. S.; SIPOLATTI, W. G. R.; FIORESI, M.; PRIMO, C. C. Sinais, sintomas e complicações do infarto agudo do miocárdio. **Revista de Enfermagem UFPE on line**, v. 12, p. 247-264, 2018.

PEREIRA, K. S. M.; OLIVEIRA, J. C. P. D.; CARVALHO, F. C. D.; VAN BELLEN, B. Complicações cardíacas em cirurgia vascular. **Jornal Vascular Brasileiro**, v. 15, p. 16-20, 2016.

RABELO, A. C. S.; SOUZA, F. V. F. S.; SILVA, L. D. F. D. Contribuição do cuidado transpessoal ao ser-cardiopata no pós-operatório de cirurgia cardíaca. **Revista Gaúcha de Enfermagem**, v. 38, 2018.

REIS, M. M. R.; LIMA, E. D. F. A.; CASAGRANDE, R. I.; FIORESI, M.; LEITE, F. M. C.; PRIMO, C. C. Perfil epidemiológico de pacientes submetidos a cirurgia cardíaca. **Revista de Enfermagem UFPE on line**, p. 1015-1022, 2019.

RIBEIRO, C. P.; SILVEIRA, C. D. O.; BENETTI, E. R. R.; GOMES, J. S.; STUMM, E. M. F. Diagnósticos de enfermagem em pacientes no pós-operatório de cirurgia cardíaca. **Revista de Enfermagem UFPE on line**, v. 9, n. 2, p. 230-233, 2015.

ROSA, R. S.; MACEDO, D. A.; OLIVEIRA, B. G.; SANTOS, B. E.; CASOTTI, C. A.; PRADO, I. F. Evidências para o cuidado de enfermagem na avaliação do risco coronariano em pacientes hospitalizados. **Revista de Pesquisa Cuidado é Fundamental Online**, v. 8, n. 2, p. 4460-4471, 2016.

SANTOS, J. D.; MEIRA, K. C.; CAMACHO, A. R.; SALVADOR, P. T. C. O.; GUIMARÃES, R. M.; PIERIN, Â. M. G.; FREIRE, F. H. M. A. Mortalidade por infarto agudo do miocárdio no Brasil e suas regiões

geográficas: análise do efeito da idade-período-coorte. **Ciência & Saúde Coletiva**, v. 23, p. 1621-1634, 2018.

SILVA, C. J. B.; SANTOS, S. M. E.; REIS, F. F.; MIRANDA, G. C. O.; SANTOS, L.; LIMA, D. V. M. Banho no leito de infartados: crossover do controle hidrotérmico 40°C versus 42,5°C. **Online Brazilian Journal of Nursing**, v. 15, n. 3, p. 341-350, 2016.

SILVA, L. D. C.; MELO, M. V. P.; ROLIM, I. L. T. P.; DIAS, R. S. Intervenções de enfermagem em pacientes de unidade de terapia intensiva cardiológica de um hospital universitário submetidos à cirurgia de revascularização do miocárdio. **Journal of Management & Primary Health Care**, v. 9, 2018.

SILVA, L. L. T.; MATA, L. R. F.; SILVA, A. F.; DANIEL, J. C.; ANDRADE, A. F. L.; SANTOS, E. T. M. Cuidados de enfermagem nas complicações no pós-operatório de cirurgia de revascularização do miocárdio. **Revista Baiana de Enfermagem**, v. 31, n. 3, p. 453-458, 2017.

SILVA, M. T.; PALU, L. A.; BRUSAMARELLO, T. **[Cuidado de Enfermagem ao Paciente Cardíaco]**. 2018.

SMELTZER, S. C.; BARE, B. G. **Brunner & Suddarth: tratado de enfermagem médico-cirúrgica**. Rio de Janeiro: Guanabara Koogan, 2014.

TAURINO, I. J. M. Cirurgia cardíaca: refletindo sobre o cuidado de enfermagem no período pós-operatório. **PubSaúde**, 2019.

Editorial

Editor-in-chief:

Vicente de Paulo Augusto de Oliveira Júnior
Centro Universitário Fanor Wyden
vicente.augusto@wyden.edu.br

Managing editor:

Ozângela de Arruda Silva
Centro Universitário Fanor Wyden
ozangela.arruda@wyden.edu.br

Author(s):

Maria Eduarda de Souza Ferreira
Faculdade Rodolfo Teófilo
Contribuição: *Investigação, escrita e desenvolvimento do texto.*

Rebeca Almeida Xavier
Faculdade Rodolfo Teófilo
Contribuição: *Investigação, escrita e desenvolvimento do texto.*

Rithianne Frota Carneiro
Centro Universitário Fanor Wyden
rithiannefrota01@hotmail.com
Contribuição: *Investigação, orientação, escrita e desenvolvimento do texto.*

Lua Maria Rodrigues de Freitas
Centro Universitário Fanor Wyden
Contribuição: *Investigação, escrita e desenvolvimento do texto.*

Submitted on: 04.07.2025

Approved on: 11.10.2026

Published on: 12.10.2026

DOI: 10.5281/zenodo.23339589

Funding:

How to cite this work:

FERREIRA, Maria Eduarda de Souza; XAVIER, Rebeca Almeida; CARNEIRO, Rithianne Frota; FREITAS, Lua Maria Rodrigues de. The impacts of nursing care on patients in the postoperative period of myocardial revitalization. **Duna: Revista Multidisciplinar de Inovação e Práticas de Ensino**, Fortaleza, v. 2, n. 2, p. 118–136, abr./jun. 2026. DOI: 10.5281/zenodo.23339589. (ABNT)

Ferreira, M. E. de S., Xavier, R. A., Carneiro, R. F., & Freitas, L. M. R. de (2026). The impacts of nursing care on patients in the postoperative period of myocardial revitalization. *Duna: Revista Multidisciplinar de Inovação e Práticas de Ensino*, 2(2), 118–136. <https://doi.org/10.5281/zenodo.23339589> (APA)



© 2026 Duna – Revista Multidisciplinar de Inovação e Práticas de Ensino. Centro Universitário Fanor Wyden – UniFanor Wyden. This work is licensed under a *Creative Commons* Attribution - NonCommercial - ShareAlike 4.0 International CC-BY NC 4.0 International).