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NURSES' ROLE IN ACUTE HEART ATTACK CARE MYOCARDIAL (AMI) IN IN-HOSPITAL EMERGENCY SERVICES AND EMERGENCY IN BRAZIL

NURSES' ROLE IN ACUTE MYOCARDIAL INFARCTION (AMI) CARE IN IN-HOSPITAL URGENCY AND EMERGENCY SERVICES IN BRAZIL

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SUMMARY

Acute myocardial infarction (AMI) is one of the leading causes of mortality worldwide. Nurses play a strategic role in initial care, often being the first professional to perform a clinical assessment of the patient. This research is an integrative review of published studies investigating the role of nurses in AMI care in in-hospital emergency services in Brazil. Critical analysis and qualitative synthesis of the studies were performed descriptively. Although nurses have a general understanding of acute myocardial infarction, gaps in recognizing signs and symptoms and in providing initial care are still observed. The lack of clear protocols, specific training, and professional autonomy contributes to these limitations. Investing in ongoing training and strengthening the role of nurses is essential to improve outcomes in the care of patients with AMI.

Keywords: Acute Myocardial Infarction. Nursing. Urgency and Emergency.

ABSTRACT

Acute myocardial infarction (AMI) is one of the leading causes of mortality worldwide. Nurses play a strategic role in initial care, often being the first professional to perform a clinical assessment of the patient. This research is an integrative review of published studies investigating the role of nurses in AMI care in in-hospital emergency services in Brazil. Critical analysis and qualitative synthesis of the studies were performed descriptively. Although nurses have a general understanding of acute myocardial infarction, gaps in recognizing signs and symptoms and in providing initial care are still observed. The lack of clear protocols, specific training, and professional autonomy contributes to these limitations. Investing in ongoing training and strengthening the role of nurses is essential to improve outcomes in the care of patients with AMI.

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1. INTRODUCTION

AMI is characterized by an acute injury to the heart muscle, accompanied by clinical signs indicating myocardial ischemia (Thygesen et al., 2018). In most In these cases, this condition is caused by the rupture or wear of an atherosclerotic plaque in a coronary artery, which leads to the formation of a clot (thrombus) that completely blocks or partially blocking the flow of blood to a certain area of the heart, causing death of cardiac cells (Bentzon et al., 2014; Falk et al., 2013).

According to the World Health Organization (WHO), diseases Heart disease has been the leading cause of death worldwide for the past 20 consecutive years (WHO, 2020). In 2019, Cardiovascular Diseases (CVD) were responsible for approximately 17.9 million deaths, which corresponds to about 32% of all deaths global. Of this total, 85% of deaths are attributed to myocardial infarction and accidents Cerebrovascular Accident (CVA) (WHO, 2021). In Brazil, it is estimated that between 300,000 and 400 thousand episodes of heart attack per year, with one death recorded in 5 to 7 cases, evidencing the high lethality of this condition (Timóteo, 2021).

The nurse plays a strategic role in initial patient care with acute myocardial infarction, often being the first professional to perform the clinical evaluation (Oliveira et al. 2017). Its role involves the early identification of signs and symptoms, the delegation of conduct and the coordination of the nursing team based on established protocols. Such actions are essential for risk stratification, risk reduction, door-to-needle or door-to-balloon time and the timely initiation of therapeutic interventions (Vargas et al. 2017). In addition, among its main responsibilities, the promotion of continuing education, guidance for patients and families, adaptation of interventions to individual needs and the effective implementation of the Systematization of Health Care Nursing (SAE) (Costa et al. 2023).

Rare studies carried out in Brazil have specifically addressed the role of nurses in the care of AMI in hospital emergency and urgent care services. This gap reinforces the importance of understanding how this professional contributes to early identification, clinical management and patient outcomes. Therefore, this study aimed to review national scientific production on the role of nurses in AMI care in this care context.

2. THEORETICAL FRAMEWORK

2.1 Clinical Action of the Nurse in the Face of Acute Myocardial Infarction

AMI represents a cardiovascular emergency with high morbidity and mortality in Brazil, demanding fast and qualified care to minimize harm to the patient (BRAZIL, 2021). The high mortality associated with AMI results from both the clinical severity as well as deficiencies in timely access and in the structuring of care networks. Therefore, it is essential to discuss strategies that favor early diagnosis and adequate management, especially in emergency services. In this scenario, the nurse plays a fundamental role, acting from screening to continuous monitoring, applying clinical protocols, administering medications and providing comprehensive support. Their work directly contributes for the effectiveness of protocols and for the reduction of complications (Almeida et al., 2024; Santos et al., 2022).

Effective nursing performance in AMI requires technical mastery, especially in interpretation of the ECG and correct administration of therapies, directly impacting the reduction of care times and patient survival (Almeida et al., 2024; Ferreira; Oliveira; Olivo, 2020). In addition to immediate care, the importance of prevention and education is highlighted. in health. In Brazil, strengthening nurses' autonomy, combined with the use of protocols and technologies, has expanded its responsibility in emergencies. Skills such as decision-making fast, communication and teamwork are essential for qualified and safe. Therefore, its performance is strategic in reducing mortality from AMI.

3. METHODOLOGY

This work consists of an integrative review of studies published in the last decade, which evaluated the role of nurses in AMI care in intra-services. emergency hospitals in Brazil. The review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al. 2009). The studies were identified in several electronic databases: PUBMED, Scientific Electronic Library Online (SciELO), Latin American and Caribbean Literature Caribbean Health Sciences Information System (LILACS). The search strategy is described in Table 1.

Table 1. Search terms by database and number of articles found.

Database	Search terms	Number of articles found
Pubmed	"Myocardial Infarction"[MeSH] OR "acute myocardial infarction" OR "heart attack" OR "AMI" AND "Nursing"[MeSH] OR "Nurses"[MeSH] OR "nursing care" OR "nursing role" OR "nursing intervention" OR "critical care nursing" AND "Emergency Nursing"[MeSH] OR "Emergency Service, Hospital"[MeSH] OR "emergency care" OR "critical care" OR "emergency setting"	60 articles
Scielo	"myocardial infarction" OR "acute coronary syndrome" AND nursing OR "nursing care" OR "role of the nursing professional" AND "hospital emergency service" OR emergency OR "urgent care"	7 articles
Lilacs	"Myocardial Infarction" OR "Coronary Syndrome" Acute" AND "Nursing" OR "Health Care" Nursing" OR "Role of the Nursing Professional" Nursing"	115 articles

3.1 Inclusion and exclusion criteria

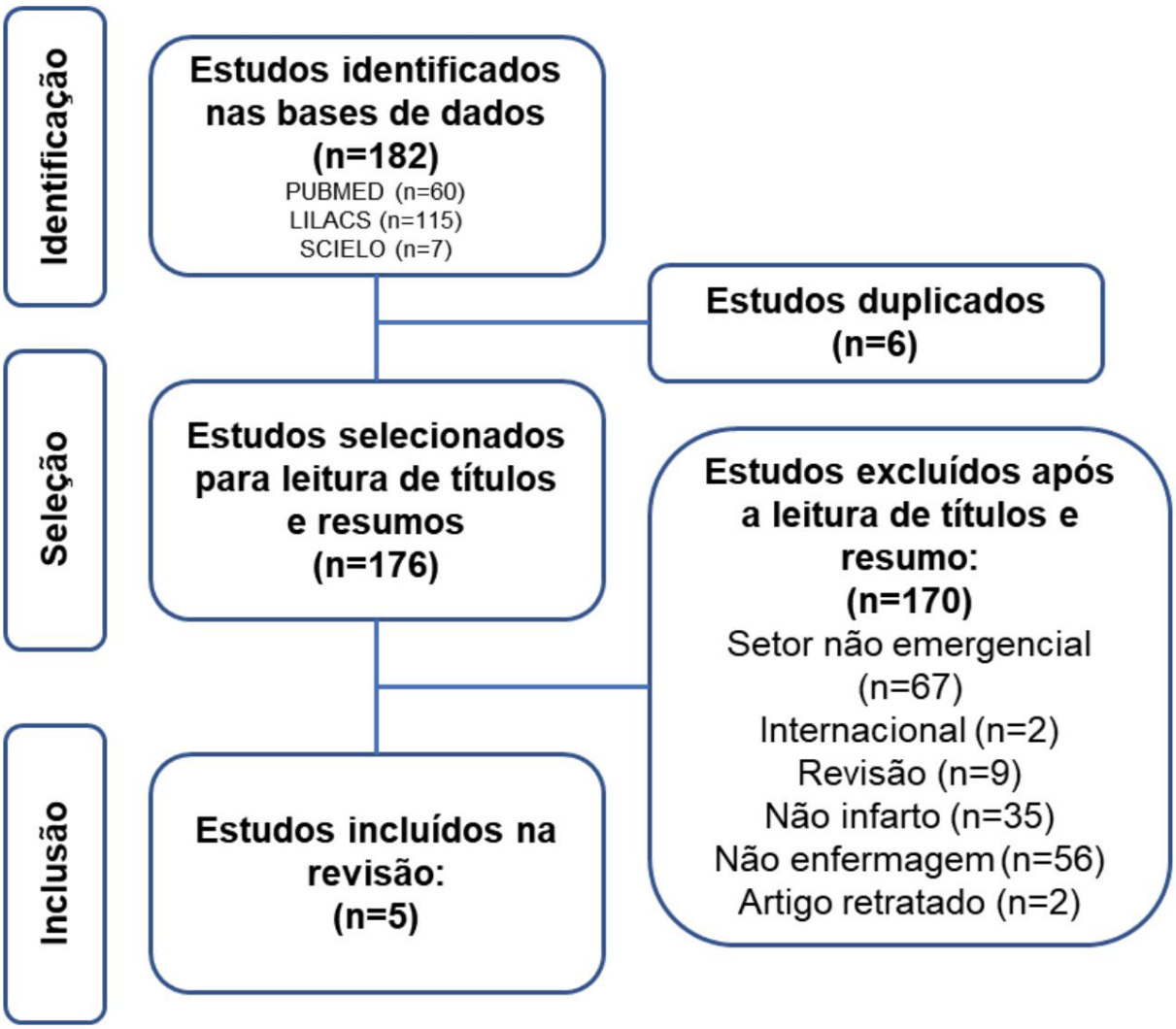
Studies published between 2014 and 2024, available in full, were included in the languages Portuguese, English or Spanish, which addressed the role of nurses in the face of AMI or that discuss the use of clinical protocols and humanization strategies in cardiological care. Publications that did not directly involve the performance of nursing professionals, those carried out outside the intra-hospital context of emergency, studies that did not deal with AMI, research carried out outside Brazil, articles portrayed and literature reviews.

The articles identified through the search strategies were exported to the Rayyan® software, where duplicate records were removed. Study selection was carried out independently by two reviewers (GRBO and NAS), with any disagreements resolved by consensus. Titles, abstracts and full texts were evaluated based on the previously defined eligibility criteria.

4. RESULTS

The survey of 186 records was identified through electronic searches in the databases. After removing 6 duplicates, 176 articles were selected for reading in the full text. Of these, 170 were excluded because they did not meet the study's eligibility criteria. At the end of the screening, 6 studies met the inclusion criteria and were selected for data extraction (Figure 1).

Figure 1. Flowchart of the selection process of studies included in the analysis.



Source: Authors themselves.

In this review, five articles were selected. Of these, 80% were published in nursing journals and 20% in interdisciplinary health journals. All included studies were written in Portuguese. Regarding the authors' training, all the articles were prepared exclusively by nursing professionals. In relation to the

methodological design, 3 studies (60%) presented a qualitative approach, 2 (40%) were cross-sectional and descriptive.

The critical analysis and qualitative synthesis of the selected studies were conducted in descriptive form, with the extraction of essential information that made up the summary of articles, including database, title, authors, objective, and outcome. This systematization allowed a clearer and more organized visualization of the relevant data, presented in the Table 1.

Table 1. Summary of the review articles. Manaus, AM, Brazil, 2025.

Title	**Authors/** Year	**Objective**	**Outcomes**
Pain Protocol Thoracic: Perceptions of Nurses of the Emergency Room		To describe the knowledge of nursing professionals working in emergency medical services regarding the chest pain protocol.	The nursing team's knowledge of the chest pain protocol was average, with flaws associated with lack of training. This reinforced the importance of regular training to improve recognition of AMI and the quality of care.
Nursing care for acute coronary syndrome in an emergency care unit	2022.	Verify the nurse's conduct in caring for patients with acute coronary syndrome and identify what nursing care is provided to patients in emergency care units.	The results showed that the conduct of nurses caring for patients with suspected or established acute coronary syndrome did not follow a pattern, with variations in approach, which made it difficult providing excellent service.
Nurses' skills in the therapeutic use of alteplase in the unit	Ferreira, Lucio da Silva, Oliveira, Jefferson Carlos de,	To assess nurses' skills in the therapeutic use of	The results demonstrated that nurses had the ability to

of ready service.	Olivo, Vania Claudia. 2020.	Alteplase, as fibrinolytic therapy, in patients diagnosed with acute myocardial infarction.	administer Alteplase and evaluate symptoms and contraindications in patients with acute myocardial infarction, although some had difficulty performing in the activities. of these
Emergency nurses' of perception of in the the use of a chest pain assessment protocol	2016.	To identify the of nurses in the perceptions the emergency department of a hospital in southern Brazil regarding the use of a nursing protocol for classifying chest the pain, implemented in a private hospital in southeastern Brazil.	The study concluded that nurses positively evaluated the chest pain protocol, the highlighting its usefulness for safer and more efficient risk classification. Despite this, they pointed out limitations node in the printed format and in the length of the protocol, suggesting the need for adjustments according to the reality of the service.
Chest pain: nurses' performance in an emergency room at a teaching hospital	Identify the role of the patient with chest pain in an emergency unit. 2014.	Caveião, Cristiano, Santos, Renata Bassos dos, Montezeli, Juliana Helena, Visentin, Angelita, Brey, Christiane, Oliveira, Vanessa Bertoglio Comasseto Antunes de	The study concluded that, although nurses recognized chest pain as a priority care, there was a need to implement a standardized node protocol or routine to guide and support their actions in dealing with it. these cases.

5. DISCUSSION

5.1 Clinical management of care for patients with AMI

Chest pain is widely recognized as the main warning sign for Acute Coronary Syndrome (ACS), being the symptom most valued by nurses in

time of screening and initiation of care (Santos et al., 2022). However, its nature subjective and diverse etiology make its characterization and classification a clinical challenge, which can lead to errors or delays in decision-making (Santos et al., 2022).

The study (Almeida et al., 2024) highlighted that early identification of chest pain, combined with a rapid response, is directly associated with a reduction in mortality, being essential to minimize the interval between the onset of symptoms and medical intervention. In However, this effectiveness can be compromised, as the study points out (Vieira et al. 2016) given the lack of mastery and preparation of nurses in classifying severity, which contributes significantly to the delay in therapy.

Although chest pain is widely recognized by professionals as a common complaint priority, gaps remain in the definition of its location. While most of the professionals correctly identified retrosternal and epigastric pain as typical (Almeida et al., 2024), a significant portion still mistakenly reported pain in the hemithorax right and shoulder as common manifestations of AMI, a finding directly related to lack of specific training on the chest pain protocol (Almeida et al., 2024; Caveião et al., 2014).

In addition to chest pain, other symptoms frequently recognized by nurses, such as dyspnea, nausea, tachycardia and mental confusion (Almeida et al., 2024). However, there is variation in the emphasis of these signs depending on the study. According to (Caveião et al., 2014), symptoms such as precordialgia, irradiation to the jaw and epigastralgia are highlighted, while (Ferreira; Oliveira; Olivo, 2020) revealed that 58% of professionals recognize pain radiating to the left arm, and 50% report epigastric pain radiating to the region dorsal.

Despite a reasonable knowledge of clinical signs, there is a deficit in systematization of the evaluation, with reports that not all nurses performed the collection of brief history and directed anamnesis (Caveião et al., 2014). This directly compromises risk stratification and appropriate patient referral.

Recognition of the main risk factors for AMI also presents discrepancies. The study (Almeida et al., 2024) revealed that most professionals identify correctly high blood pressure, smoking, family history and cardiovascular surgeries

previous. However, equally relevant pathologies such as diabetes mellitus and dyslipidemia are still underestimated, with only 67.1% of positive responses.

These findings demonstrate that although professionals have general knowledge regarding the risk profile, there is a need for continuous training reinforcement to increase the accuracy of the screening and guiding conduct in a more assertive manner.

Regarding initial interventions, studies (Caveião et al., 2014; Santos et al., 2022) agreed that cardiac monitoring, installation of oxygen, collection of cardiac enzymes, ECG, large-caliber venipuncture, and capillary blood glucose testing are commonly performed. the electrocardiogram (ECG), in particular, is highlighted as the first step after arrival of the patient with chest pain (Caveião et al., 2014). This examination is considered essential for diagnostic confirmation and treatment direction. However, the study (Ferreira; Oliveira; Olivo, 2020) pointed out that only 80% of professionals recognize the ST-segment elevation as a typical ECG change. In addition, 12.5% reported a lack of knowledge about what changes the exam may present, which shows technical deficiencies.

It is important to highlight that, although the ECG is widely recognized, its request still faces institutional barriers. While (Vieira et al., 2016) reported that, in some services, the nurse does not have the autonomy to request the exam. The same study demonstrates that, in these contexts, the average time between the patient's arrival and the ECG is eight minutes (Vieira et al., 2016), within the recommended limit of 10 minutes (Ferreira; Oliveira; Olivo, 2020).

Another critical point identified is the lack of standardization of conduct and the absence of clear referral flows. The study by (Santos et al., 2022) revealed that although the initial procedures are similar, there is a perception of variations among professionals. In addition, Furthermore, most of the interviewees pointed out difficulties in transferring the patient to reference hospitals, with reports of the absence of specific protocols for this process.

This disorganization in the care flow can compromise the continuity of the care and negatively impact the patient's prognosis, reinforcing the need for implementation of standardized and well-disseminated care routines.

5.2 Convergence on the importance of screening and use of clinical protocols

Although nurses recognize that the use of clinical protocols improves conducting therapy and care for patients with chest pain (Vieira et al. 2016), still there is evidence of weaknesses in its application. The study (Almeida et al., 2024) showed that most of the nursing staff have only average knowledge of the protocol of chest pain, which is directly related to the lack of specific training. This limitation contributes to errors in identifying typical signs and symptoms of AMI, which compromises the correct screening.

This difficulty is corroborated by (Santos et al., 2022), who pointed out the absence of a institutional protocol that guides the nurse's conduct after risk classification. Still that professionals adopt measures they consider appropriate, such as referral priority and the beginning of care, these procedures are not standardized and vary between professionals, making uniformity and excellence of service difficult.

The issue of screening is also addressed in (Almeida et al., 2024), when highlighting the use inadequate Manchester Classification. Although some professionals have classified correctly identified symptoms suggestive of ACS as high risk, many assigned a classification incorrect, which demonstrated limited knowledge of the tool and could lead to errors in prioritizing care.

On the other hand, (Santos et al., 2022) recognized advances by showing that some nurses pointed out the need for standardization of conduct and defend autonomy for initiate important measures, such as immediate ECG. This suggests a movement towards qualifying the service, even if not in a homogeneous way.

Therefore, although there is consensus among studies, (Almeida et al., 2024; Santos et al., 2022) regarding the importance of protocols to qualify screening and initial pain management thoracic, there is a gap between the recognition of its relevance and its application practice, which is still marked by insufficient knowledge, lack of training and lack of institutional standardization.

6. CONCLUSION

The role of nurses in caring for patients with suspected acute myocardial infarction myocardium is crucial for early detection and appropriate initial management.

Although these professionals demonstrate general knowledge on the subject, there still persist important weaknesses, such as the difficulty in identifying typical symptoms, in the application correct Manchester Classification and in the interpretation of the electrocardiogram. Such limitations are often associated with the absence of well-defined institutional protocols, lack of specific training and limited autonomy of nursing to act in a resolutive.

In view of this, it becomes essential to invest in continuous training, in implementation of objective assistance flows and strengthening legal support for action of the nurse. These measures contribute to the standardization of care, agility in interventions and improvement of clinical outcomes in the care of acute myocardial infarction.

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