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Profile of patients undergoing cardiac catheterization at a university hospital: cross-sectional study

Perfil de pacientes submetidos a cateterismo cardíaco em um hospital universitário: estudo transversal

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ABSTRACT

This study aims to describe the profile of patients undergoing cardiac catheterization in a university hospital. This cross-sectional study involved patients undergoing cardiac catheterization, with data collection taking place between June and August 2023 at the Hemodynamics outpatient clinic in southeastern Brazil. Participants were selected by simple random sampling, with a 5% margin of error and a 95% confidence level, establishing a sample size of 174 patients. The patient profile was female (63.2%), 41 to 61 years or older and 61 to 75 years old (both 39.7%), and with elementary school (43.7%). The patients are typically non-alcoholics (71%) and non-smokers (79%), with systemic arterial hypertension (78%), and/or diabetes mellitus (29%), confirming the risk factors for coronary disease. The data presented show the importance of nursing professionals working in health education for patients undergoing cardiac catheterization, aiming at quality of life within the expected parameters for self-care related to cardiovascular diseases, in relation to diet, exercise, blood pressure control, regular attendance at consultations with the multidisciplinary team and adherence to the health program offered.

Keywords: Nursing care. Cardiac catheterization. Health education. Health.

RESUMO

Este estudo tem como objetivo descrever o perfil dos pacientes submetidos a cateterismo cardíaco em um hospital universitário. Trata-se de um estudo transversal envolvendo pacientes submetidos a cateterismo cardíaco, com coleta de dados entre junho e agosto de 2023 no ambulatório de Hemodinâmica do sudeste do Brasil. Os participantes foram selecionados por amostragem aleatória simples, com margem de erro de 5% e nível de confiança de 95%, estabelecendo um tamanho amostral de 174 pacientes. O perfil dos pacientes foi do sexo feminino (63,2%), com idades entre 41 e 61 anos ou mais e 61 a 75 anos (ambos 39,7%) e com ensino fundamental (43,7%). Os pacientes são não etilistas (71%) e não fumantes (79%), com hipertensão arterial sistêmica (78%) e/ou diabetes mellitus (29%), confirmando os fatores de risco para doença coronariana. Os dados apresentados demonstram a importância da atuação dos profissionais de enfermagem na educação em saúde dos pacientes submetidos ao cateterismo cardíaco, visando à qualidade de vida dentro dos parâmetros esperados para o autocuidado relacionado às doenças cardiovasculares, em relação à alimentação, à prática de exercícios físicos, ao controle da pressão arterial, à frequência regular às consultas com a equipe multiprofissional e à adesão ao programa de saúde oferecido.

Palavras-chave: Cuidados de enfermagem. Cateterismo cardíaco. Educação em saúde. Saúde.

1. INTRODUCTION

Cardiovascular diseases are the leading cause of death worldwide, with an estimated 17.7 million people dying from cardiovascular disease in 2015, representing 31% of all deaths worldwide. Of these deaths, an estimated 7.4 million are due to cardiovascular disease and 6.7 million are due to stroke. Of the 17 million premature deaths (people under 70) from chronic noncommunicable diseases, 82% occur in low- and middle-income countries, and 37% are caused by cardiovascular disease.[1]

Cardiovascular disease has significant morbidity and mortality in the elderly population, considering that the term "elderly" refers to an individual reaching the age of 60 in developing countries and 65 in developed countries.[1]

In the United States, the elderly constitute 13% of the population, yet they account for 65% of hospitalizations due to heart disease. Approximately 85% of deaths from acute myocardial infarction occur in the elderly population. Up to the age of 65, cardiovascular disease is much more prevalent in men, but from the age of 80 onwards, its prevalence is equivalent in both sexes.[2]

Cardiac catheterization is an invasive diagnostic procedure performed in the hospital (in the hemodynamics department). This procedure facilitates the selection of appropriate and effective therapy for cardiovascular disease by visualizing the condition of the coronary arteries, assessing pressures in the cardiac chambers, and assessing coronary artery patency through flexible catheters inserted into the femoral, brachial, or radial arteries.[3]

Despite being a widely performed diagnostic test and information being readily available through media such as the internet, television, and magazines, patients often present the procedure with fear, anxiety, and many questions about the procedure. This condition can affect them to such an extent that the exam may be hampered, and in some cases, lead to its cancellation.[4]

Nurses, as part of the multidisciplinary healthcare team, must be attentive to the assessment and care of clients undergoing cardiac catheterization. It is essential that nurses seek training, updating, revitalization, and recognition of the skills necessary for nursing practice, in order to contribute to a more attentive focus on the needs and challenges of caring for these clients.

Recognizing nurses as professionals who provide care in all life circumstances, their work is expected to encompass not only the specific care of the examination to be

performed, but also care that involves promoting the health of clients with chronic noncommunicable diseases, contributing to the implementation of public policies focused on this area of care.[5]

As health educators, nurses assume the important role of guiding their care toward health promotion and encouraging self-care. This requires understanding the clients' realities and utilizing strategies that promote their inclusion and active participation in the process of promoting their care and promoting quality of life.[6]

In this context, it is crucial to situate this research proposal within the context of Brazilian public policies and global and national guidelines. The 2030 Agenda for Sustainable Development, proposed by the United Nations (UN), defines global goals and actions that should guide public, academic, and social policies toward sustainability, equity, and inclusion. Specifically, Sustainable Development Goal (SDG) 3 – "Good Health and Well-being" – is directly aligned with this study.[7]

When discussing Health Education, it is important to emphasize that all efforts must be focused on preventing, promoting, and restoring health. Within nursing competencies, health education becomes a field of paramount importance for social development, contributing, along with educational practices, to the expansion of knowledge. It also allows for an interdisciplinary approach, integrating care through the close relationship between the user and the professional, thus creating and ensuring humanization in care.[8]

In 2016, the Pan American Health Organization released the document "Health, Resilience, and Human Security: Toward Health for All," which aimed to explain to professionals and technicians in the fields of development and health what a human security approach is and demonstrate how it can be applied to guide individuals and communities toward achieving a virtuous cycle of good health and well-being. It ensures that interventions are integrated to build and maintain resilience in individual, community, and institutional health, for the health of all.[9]

In this context, the culture of patient safety has demonstrated the value of communicating in an integrated and methodical manner, which is reflected in contemporary nursing, where problems related to this practice are encountered, such as the omission of important data and the lack of accuracy or consistency of information. Thus, standardized ways of presenting patient information are effective ways to overcome barriers to ineffective communication, and thus to health education.[10]

When referring to educational practice, it must be taken into account that the professional will be committed to encouraging the client to take shared responsibility for their own health care and health production. It is necessary, first and foremost, to consider the differences between social groups and to interact with existing practical knowledge, in this case, clients undergoing cardiac catheterization.[11]

Therefore, this study aims to describe the profile of patients undergoing cardiac catheterization in a university hospital.

2. MATERIALS AND METHODS

Study design and participants

This is a cross-sectional study conducted with patients undergoing cardiac catheterization, with data collection occurring between June and August 2023 in the Hemodynamics outpatient clinic of a university hospital located in southeastern Brazil. This study adhered to the Standards for Quality Improvement Reporting Excellence (SQUIRE) guide from Enhancing the QUALity and Transparency of Health Research (EQUATOR). The methodological strategy was developed by Strengthening the Reporting of Observational Studies in Epidemiology (STROBE).[12]

Study participants were selected by simple random sampling with a 5% margin of error and a 95% confidence level, establishing a sample size of 174 patients.

The inclusion criteria were elderly adult clients (men and women) aged 60 and older who were seen in the hemodynamics service for cardiac catheterization, were hospitalized or attended outpatient appointments, and agreed to participate in the study by signing the informed consent form. Adults with cognitive or psychiatric disorders and participants undergoing the examination for the second or third time were excluded.

Data collection and analysis

For data collection, an instrument was used to identify and characterize the study participants with the following analysis variables: sex, age, education, marital status, type of residence, people living in the house, children, religion; lifestyle habits (smoking and alcohol consumption), comorbidities, and the occupational status of patients undergoing cardiac catheterization.

A simple descriptive statistical analysis was performed, with data imported into the Statistical Package for the Social Sciences (SPSS®) for Windows version 29.0. The descriptive analysis was based on tables, absolute and relative frequency distributions (%), and statistical calculations. The primary objective of this procedure was to summarize and characterize the behavior of the variables, thus outlining the patient profile.

Ethical Aspects

This study was approved by the Research Ethics Committee with number 5.135.926, in accordance with Resolution No.466 of 2012 of the National Health Council, which provides guidelines for procedures in research involving human subjects in Brazil. The study seeks to protect the interests of research participants in their integrity and dignity and to contribute to the development of research within ethical standards.[13] The autonomy of research participants was respected, guaranteeing the right to free and informed consent, confidentiality of information, and privacy. This study was not funded by any organization or funding agency.

3. RESULTS

By applying the data collection instrument to patients undergoing cardiac catheterization, we obtained a sample of 174 patients. Prior knowledge of the patient's situation is considered a crucial factor, so we sought to obtain this information in the data collection instrument, using the identification form proposed for this research.

Table 1 displays the frequency distribution of the variables that characterize the patients undergoing cardiac catheterization in this research. Considering the main frequencies, the data show that the typical patient profile is: female (63.2%), aged 41 to 61 years or older and 61 to 75 years old (both 39.7%), with secondary school (43.7%), marital status (mostly married) (52.9%), owning a home (81.6%), living in a household with two (39.1%) or three people (26.4%), with approximately one or two children; and Catholic (43.7%). The median age of patients is 57.2 years; the median number of people living in the household is 2 and the median number of children is 2.

Table 1. Frequency distribution of sociodemographic variables characterizing patients undergoing cardiac catheterization.

Variable	(n=174)	
	n	%
Sex		
Feminine	**110**	**63,2%**
Masculine	64	36,8%
Age		
18 |– 41	31	17,8%
41 |– 61	**69**	**39,7%**
61 |– 75	**69**	**39,7%**
> 75	5	2,9%
Education		
Illiterate	3	1,7%
Elementary School I	49	28,2%
Elementary School II	26	14,9%
Secondary School	**76**	**43,7%**
University	20	11,5%
Marital status		
Single	39	22,4%
Married	**92**	**52,9%**
Divorced/Separated	25	14,4%
In a Common-Law Relationship	3	1,7%
Widowed	15	8,6%
Type of Residence		
Rented	27	15,5%
Owned	**142**	**81,6%**
Loaned	5	2,9%
People living in the house		
1	21	12,1%
2	**68**	**39,1%**
3	**46**	**26,4%**
4	27	15,5%
5	6	3,4%
6	5	2,9%
8	1	,6%
Number of children		
0	27	15,5%
1	**50**	**28,7%**

Variable	(n=174)	
	n	%
2	**61**	**35,1%**
3	27	15,5%
4 ou mais	9	5,2%
Religion		
No religion	36	20,7%
Catholic	**76**	**43,7%**
Evangelical	52	29,9%
Spiritist	7	4,0%
Jehovah's Witness	1	0,6%
Buddhist	2	1,1%

Source: Research data.

Table 2 shows the frequency distribution of lifestyle habits (smoking and alcohol consumption) and comorbidities of patients undergoing cardiac catheterization. The data show that these patients are typically non-alcoholics (71%) and non-smokers (79%), and the only typical comorbidity with a frequency greater than 50% is systemic arterial hypertension. The comorbidities diabetes mellitus (29%) and angina (14%) are relevant, with frequencies greater than 10%.

Table 2. Frequency distribution of lifestyle habits (smoking and alcohol consumption) and comorbidities of patients undergoing cardiac catheterization.

Variable	n=174	
	n	%
Alcohol consumption		
No	**125**	**71%**
It's gone, it stopped 10 years ago	1	0,6%
Yes	48	27%
Smoking		
No	**138**	**79%**
It's gone, it stopped 7 years ago	4	2,3%

Variable	n=174	
	n	%
Yes	32	1%
Comorbidities		
Systemic Arterial Hypertension	**136**	**78%**
Diabetes Mellitus	51	29%
Angina	25	14%
Chronic Kidney Disease	13	7,5%
Asthma	6	3,4%
Bronchitis	4	2,3%
Allergy	1	0,6%
Anemia	1	0,6%
Osteoarthritis	1	0,6%
Chronic Obstructive Pulmonary Disease	1	0,6%
Hepatitis	1	0,6%
Acute Myocardial Infarction	1	0,6%
Congestive Heart Failure	1	0,6%
Chronic Renal Failure	1	0,6%
LUPUS	1	0,6%

Source: Research data.

The vast majority of users have systemic arterial hypertension (78%) and/or diabetes mellitus (29%), confirming the risk factors for coronary heart disease. Diabetes mellitus and systemic arterial hypertension are chronic diseases that are increasingly affecting a large portion of the population in Brazil.

Table 3. Frequency distribution of variables characterizing the occupational status of patients undergoing cardiac catheterization.

Variable	(n=174)	
	n	%
Occupational status		
Employed	**86**	**49,4%**
Unemployed	37	21,3%
Sick leave	13	7,5%
Retired	38	21,8%

Source: Research data.

Regarding table 3 on the occupational profile of patients undergoing cardiac catheterization, it is worth noting that 49.4% of participants continue with their work activities, 21.3% are unemployed, 7.5% are on leave due to their cardiovascular disease under treatment and 21.8% are retired.

4. DISCUSSION

In this study, it was found that the majority of the sample was female, rather than male. It was observed that a large proportion of the study participants were elderly, consistent with data from the 2022 census conducted by the Brazilian Institute of Geography and Statistics.[14]

Regarding education, progress is observed; more people are able to complete their studies, achieving a level of education that can help them better assimilate guidance. It is important to emphasize that patients with lower levels of education may have difficulty dealing with abstract information and, consequently, may not assimilate the guidance they receive. It is necessary to use popular language to promote accessibility to health education.[15]

Regarding marital status, most of the sample was married and had two or three children. The predominant religion in the sample was Catholic. It is worth noting that spirituality and religion are currently relevant aspects of care. Through religiosity, an identity is created among social groups. It also enables them to confront threats and helps them gain new energy to face the struggle for survival and joy.[16]

Most already own their own homes, and this is justified by their age. That is, at this stage of life, when factors related to central goals and interests are present, they live as long as possible, try to end their lives with dignity and without suffering, find help and protection, and prolong their social achievements and prerogatives, such as property, authority, and respect, as much as possible. Most are mature enough to recognize this need.[17]

The program of actions to combat chronic noncommunicable diseases includes a balanced diet, exercise, and appropriate medication use, as well as campaigns against smoking and alcohol. The sample confirms a group that still smokes; however, since the test is diagnostic, they have not yet been made aware of the need to give up smoking and alcohol, as well as the importance of diet.[18]

The vast majority of users have systemic arterial hypertension and/or diabetes mellitus, confirming the risk factors for coronary heart disease. Diabetes mellitus and systemic arterial hypertension are chronic diseases that are increasingly affecting a large portion of the population.

Opportunities for health guidance and education must be linked to an integrative approach that empowers patients to take responsibility for their own health and well-being.[19,20]

Lifestyle interventions can influence quality of life improvements, enabling patients with cardiovascular disease to recognize the need for changes regarding issues involving the interjection between care and health. Self-care needs to be offered with the goal of promoting patient autonomy and empowerment in their health issues.[21]

Recognizing that self-care is a regulatory function that allows patients to perform practices and actions aimed at preventing and treating health problems is an intrinsic role of nursing in enhancing the provision of autonomy and participation of patients with cardiovascular disease in the development of their own health, focusing on quality of life, combined with self-care, within each individual's reality.[22]

This is relevant given that, in the occupational profile of patients undergoing cardiac catheterization, a large proportion of participants continue their work activities, similar to those of unemployed patients. Few patients in the sample in this study are on leave due to their cardiovascular disease under treatment. To the detriment of active patients, 21.8% are retired.

Because it's not only a challenge for nursing, but the aging population is also a challenge for health education, coupled with the high rate of cardiovascular disease, which is the leading cause of illness that also affects the elderly in Brazil. There is an increased demand for hemodynamic services, thus generating a need for nursing care focused on this dynamic, which promotes guidance related to the examination and self-care to promote quality of life.[23]

To create a consistent summary aimed at uniformity in cardiac catheterization procedures and guidelines for educational materials, it is necessary to involve various professionals who deal with the health of these patients, in order to bridge the gap between what is written and what is understood.[24]

By implementing the educational approach, patient readmission can be reduced, patient autonomy and self-management can be enhanced, and the quality of healthcare can be improved, leading to a reduction in healthcare.[25]

The role of nurses in managing cardiovascular disease care is vital and multifaceted. They will work in health education, regular monitoring and follow-up of these patients, developing individualized care plans, and in some situations, also offering support and counseling. In general, nurses help improve the quality of care, problem-solving, and patient navigation within the healthcare system. These actions significantly contribute to the effectiveness of health policies focused on chronic diseases and can lead to a reduction in mortality related to these conditions.

5. CONCLUSIÓN

Nursing's professional skills, combined with scientific knowledge, can foster interaction for learning and sharing experiences, fostering deeper knowledge and enabling the acquisition of healthy lifestyle habits. The data presented demonstrates the importance of nursing professionals providing health education to patients undergoing cardiac catheterization, aiming to ensure quality of life within the expected parameters for self-care related to cardiovascular disease, including diet, exercise, blood pressure control, regular attendance at multidisciplinary team appointments, and adherence to the health program offered by the university hospital.

Within the realm of health education, strategies emerge to foster greater engagement in improving quality of life and to educate and create possible pathways for health education in patients undergoing cardiac catheterization. Enabling autonomy in the practice of acquired knowledge and offering it to clients with cardiovascular diseases, with their demands and nuances, with their implications for health, needs to be inviting and stimulating, so that the routine proposed in health issues in a differentiated way leaves the drawing board and becomes effective in the reality of each client.

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