Journal of Nursing

Revista de Enfermagem

UFPE On Line

ISSN: 1981-8963

INTEGRATIVE REVIEW ARTICLE

POST-CORONARY TRANSLUMINARY ANGIOPLASTY PATIENT'S NURSING CARE CUIDADOS DE ENFERMAGEM AO CLIENTE PÓS-ANGIOPLASTIA TRANSLUMINAL CORONARIANA

CUIDADOS DE ENFERMERÍA AL CLIENTE POST-ANGIOPLASTIA TRANSLUMINAL CORONARIANA

Vivian Cristina Gama Souza Lima¹, Gisella de Carvalho Queluci², Euzeli da Silva Brandão³

ABSTRACT

Objective: to identify in the literature studies on basic care after the hemodynamic procedure. **Method:** this is a descriptive, descriptive, integrative review, of publications between 2005 and 2017, and the search was performed in the MEDLINE, SCOPUS and CINAHL databases. 13 review articles were selected and three categories emerged from the critical analysis. **Results:** the following categories were identified: Nursing Care for the prevention and correction of post-angioplasty complications; Care related to comfort and Guidance and health education. There is also little appreciation of basic care, and a strong concern about care that is considered more complex. Despite this, hemodynamic changes that show signs of alertness and frequency of assessments still do not seem to be well defined. **Conclusion:** it is important to highlight the basic Nursing care to the client, given the complexity of the situational context experienced, in order to promote a better quality of care in the daily practice of professional practice. **Descriptors:** Nursing Care; Nursing; Angioplasty; Angioplasty, Balloon, Coronary; Cardiovascular Nursing; Review.

RESUMO

Objetivo: identificar na literatura estudos sobre os cuidados básicos após o procedimento hemodinâmico. **Método:** trata-se de estudo bibliográfico, descritivo, tipo revisão integrativa, de publicações entre 2005 e 2017 e, a busca foi realizada nas bases de dados MEDLINE, SCOPUS e CINAHL. Selecionaram-se 13 artigos revisão e da análise crítica emergiram três categorias. **Resultados:** identificou-se as seguintes categorias: Cuidados de Enfermagem para a prevenção e correção das complicações pós-angioplastia; Cuidados relacionados ao conforto e Orientações e educação em saúde. Observa-se, ainda, pouca valorização sobre os cuidados básicos, e forte preocupação com cuidados tidos como mais complexos. Apesar disso, alterações hemodinâmicas que mostram sinais de alerta e frequência das avaliações parecem ainda não estar bem definidas. **Conclusão:** torna-se importante destacar os cuidados básicos de Enfermagem ao cliente, diante da complexidade do contexto situacional vivenciado, a fim de promover uma melhor qualidade da assistência no cotidiano da prática profissional. **Descritores:** Cuidados de Enfermagem; Enfermagem; Angioplastia; Angioplastia Coronária com Balão; Enfermagem Cardiovascular; Revisão.

RESUMEN

Objetivo: identificar en la literatura estudios sobre los cuidados básicos después del procedimiento hemodinámico. **Método:** se trata de estudio bibliográfico, descriptivo, tipo revisión integrativa, de publicaciones entre 2005 y 2017 y, la búsqueda fue realizada en las bases de datos MEDLINE, SCOPUS y CINAHL. Se seleccionaron 13 artículos revisión y del análisis crítico emergieron tres categorías. **Resultados:** se identificaron las siguientes categorías: Cuidados de Enfermería para la prevención y corrección de las complicaciones post-angioplastia; Cuidados relacionados al bienestar y orientaciones y educación en salud. Se observa, además, poca valoración sobre los cuidados básicos, y una fuerte preocupación por los cuidados que se consideraron más complejos. A pesar de ello, las alteraciones hemodinámicas que muestran señales de alerta y frecuencia de las evaluaciones parecen todavía no estar bien definidas. **Conclusión:** es importante destacar los cuidados básicos de Enfermería al cliente, ante la complejidad del contexto situacional vivido, a fin de promover una mejor calidad de la asistencia en el cotidiano de la práctica profesional. **Descriptores:** Atención de enfermeira; Enfermería; Angioplastia; Angioplastia Coronaria con balón; Enfermería Cardiovascular; Revisión.

¹Master, National Cancer Institute / INCA. Rio de Janeiro (RJ), Brazil. Email: vcgslima@gmail.com ORCID iD: <https://orcid.org/0000-0001-7249-7683>; ^{2,3}PhD, Federal Fluminense University / UFF. City (UF), Brazil. Email: gisellaqueluci@yahoo.com.br ORCID iD: <https://orcid.org/0000-0003-0496-8513>; Email: euzeli@terra.com.br ORCID iD: <https://orcid.org/0000-0001-8988-8103>

INTRODUCTION

Coronary transluminal angioplasty (CTA) is the non-surgical treatment of coronary artery obstructions by means of a balloon catheter, in order to unclog the artery and, consequently, increase blood flow to the heart. It is known that this procedure is necessary to treat coronary artery disease, also known as atherosclerosis, caused by the narrowing of the lumen of the affected coronary arteries, culminating in the reduction of blood flow and generating episodes of precordial pain known as angina. Acute myocardial infarction is established when there is a total obstruction of vessel lumen, requiring specialized and prompt specialized care.¹⁻²

According to the World Health Organization (WHO), cardiovascular diseases (CVD) are responsible for approximately 30% of the world's deaths, accounting for 29.4% of all deaths recorded in Brazil in one year. It is added that this means that more than 308 thousand people died, mainly of infarction and cerebrovascular accident (CVA), and the high frequency of the problem makes Brazil one of the ten countries with the highest number of deaths due to cardiovascular diseases in the world.³⁻⁴

The CTA arose as a strategy for myocardial revascularization surgery, but despite the development of this technology, there is a risk of complications. CTA is performed through a vascular (arterial) access and obtaining arterial access is the initial and fundamental step for performing this procedure, which may be: femoral, radial, brachial or other, these being the three most used.⁵

The vascular complications of CTA are related essentially to this vascular access. Important vascular complications include hematoma at the puncture site, retroperitoneal hematoma, pseudoaneurysm, arteriovenous fistula, and arterial dissection and / or occlusion. Local bruising may occur due to technical problems, such as a small perforation or inexperience at the time of local mechanical compression.

Puncture access after closure of the procedure should be occluded with manual compression followed by a compressive dressing or with the use of various vascular occlusion devices. It is noted that the use of these vascular occlusion devices does not clearly demonstrate the reduction in hemorrhagic complications, but is considered reasonable for the purpose of obtaining faster hemostasis and earlier ambulation compared to the use of manual compression.⁶

Nursing must be held responsible in this context for the care given to this client, as well as for comfort, regarding possible complications, since Nursing's role is the care related to promoting health and well-being, rest and comfort, both to the mind, as to the body. Nursing care is related to the basic needs of the client, which would be, for example, bathing, checking vital signs, offering diet and mobilizing in the bed. However, the basic care in the scope of care practice is devalued.⁷⁻⁹

In the area of Cardiovascular Nursing, an important technological advance is observed, however, the technology does not exclude the need for basic nursing care to the client, because, often, the nurse's technical profile makes this care devalued. Nurses should, however, reflect on their role and appropriate the delivery of basic care, which are the basis of their work and will provide humanized and quality care. This is corroborated when Florence Nightingale states that Nursing care goes far beyond medication administration, that is, there is much more to be done by the client than technologies, and Nursing care directly influences the client's recovery.⁹⁻¹⁰

OBJECTIVE

- Identify studies on basic care after the hemodynamic procedure.

METHOD

It is a bibliographical, descriptive study, type integrative literature review (ILR), which consists of the construction of a broad literature review, contributing to discussions about the results of researches, as well as reflections on future studies on the researched subject.¹¹

It becomes this broader methodological approach with regard to revisions, since it allows the inclusion of experimental and non-experimental studies for a better understanding of the phenomenon to be analyzed. ILR has six phases: elaboration of the guiding question; search or sampling in the literature; data collection; critical analysis of included studies; discussion of the results and presentation of the results.¹²

Thus, the following research question was formulated: "Which basic Nursing care, recommended in the literature, to be implemented in the client after the hemodynamic procedure (CTA)?"

It was established as a temporal delimitation, publications between the years 2005 and 2017, period that is justified due to the advance in public policies of

cardiovascular health between the years 2004 and 2005. For this search, the descriptors "angioplasty "AND" nursing care", according to the Bank of Descriptors in Health Sciences (Decs). The association between the descriptors with the Boolean operator "AND" was necessary because of the purpose of identifying only articles that correlated the two terms in the same study. As a data source, the databases Medical Literature Analysis and Retrieval System Online (MEDLINE), SciVerse Scopus (SCOPUS) and Cumulative Index to Nursing and Allied Health Literature (CINAHL) were used. The search was done by two different reviewers.

In this way, inclusion criteria were defined: articles on the subject, with emphasis on studies directed to hospitalized adult clients,

published in English, Portuguese or Spanish; related article formats available in full online. Studies with clients younger than 18 years were excluded. The search was carried out in August 2017.

After searching the databases, 73 articles were found in MEDLINE, 22 articles in CINAHL and 51 articles in SCOPUS, totaling 146 articles. After evaluating the titles and abstracts of the 146 articles found, 133 were excluded because they were not related to the theme and / or by repetition in the databases, totaling 13 articles, five MEDLINE, five CINAHL and three SCOPUS articles. The productions that met the criteria previously established for this study were selected, reading them in full.

Figure 1. Selection of articles for the study.

An instrument that included information related to the identification of the articles was elaborated for data collection, these being: title, authors, authors' profession, method, journal, year of publication, place of origin of the study, main objective and classification by level of evidence.

Therefore, for the classification of the level of evidence of the selected articles, the following design was used:¹³⁻⁴ Level 1 -

Evidence resulting from the meta-analysis of multiple controlled and randomized clinical trials; Level 2 - evidences obtained in individual studies with experimental design; Level 3 - evidence from quasi-experimental studies; Level 4 - Evidence from descriptive (non-experimental) studies or qualitative approach; Level 5 - evidence from case or experience reports; Level 6 - evidence based on expert opinions.

RESULTS

The selected articles were organized in the following table.

Identificatio n	Title	Authors	Yea r	Journal	Type study	of	Answer to the research question	Level of eviden ce
A1	Percutaneous coronary intervention: recommendations for good practice and training	Dawkins, Gershlick, Belder, Chauhan, Venn, Schofield, et al. ¹⁵	2005	Heart British Cardiac Society (Supl. V)	- Review article		Vascular and hemodynamic access point observation, ECG monitoring, treatment of vasovagal episodes, observation of recognized complications.	4
A2	Management of patients after percutaneous coronary interventions	Shoulders ¹⁶	2008	Critical Care Nursing	Review article		ICU monitoring, assessment, recognition and effective care in complications, client comfort and safety, client and family education.	4
A3	Care of the post percutaneous coronary intervention patient	Mills, Wright, Newell ¹⁷	2012	Australian Nursing journal	Review article		Patient position in bed, ambulation after sheath withdrawal, hemostasis.	4
A4	Blood pressure and risks of vascular complications after percutaneous coronary intervention	Dumond ¹⁸	2007	Dimensions of Critical Care Nursing	Case-control study		Nursing care is related to hemostasis and prevention of complications.	2
A5	Reducing Acute Kidney Injury Due to Contrast Material: How Nurses Can Improve Patient Safety	Lambert, Chaisson, Horton, Petrin, Marshall, Bowden, et al. ¹⁹	2017	Critical Care Nursing	Experiment al study		Care for the prevention of contrast-induced nephropathy, such as hydration and laboratory tests.	2
A6	Acute Coronary Syndrome: Focus on Antiplatelet Therapy	Rodel ²⁰	2016	Critical Care Nursing	Case Series		Nursing performance in bleeding monitoring, promotion of comfort and guidance on post-discharge medication use.	3
A7	Transparent film dressing vs pressure dressing after percutaneous transluminal coronary angiography	Mcle, Petite, Pride, Leeper ²¹	2009	American Journal of Critical Care	Experiment al study		Observation of the puncture site for bleeding and bruising; evaluation of discomfort related to the type of dressing.	2

A8	Ambulation after femoral sheath removal in percutaneous coronary intervention: a prospective comparison of early vs. late ambulation	Schicks, Schoonhoven, Aengevaeren, Nogaredo-Hoekstra, Va Achterberg, Verheugt ²²	2009	Journal of Clinical Nursing	Non-randomized comparative study	Femoral puncture site care (hemostasis).	3
A9	Early sheath removal and ambulation in patients submitted to percutaneous coronary intervention: a randomised clinical trial	Augustin, Quadris, Sarmento-Leite ²³	2010	International Journal of Nursing Studies	Randomized comparative study between intervention group and control group	Early ambulation (after removal of the sheath).	3
A10	Comparison of Complications in percutaneous coronary intervention patients mobilized at 3, 4, and 6 hours after femoral arterialsheath removal	Waker, Jen, McCosker, Cleary ²⁴	2008	The Journal of Cardiovascular Nursing	Experimental study	Care related to site of insertion and customer mobilization.	2
A11	Nursing Care Practices following a Percutaneous coronary intervention - Results of a Survey of Australian and New Zealand Cardiovascular nurses	Rolley, Salamonson, Dennison, Davidson ²⁵	2010	The Journal of Cardiovascular Nursing	Integrative literature review	Care related to Pain management, bedside positioning, hemostasis and ambulation.	4
A12	Review of nursing care for patients undergoing percutaneous coronary intervention: a patient journey approach	Rolley, Davidson, Salamonson, Fernandez, Dennison ²⁶	2009	Journal of Clinical Nursing	Integrative literature review	Customer education and post-discharge care.	4
A13	Perceived learning needs according to patients who have undergone major coronary interventions and their nurses	Mosleh, Nidal, Mona ²⁷	2016	Journal of Clinical Nursing	Experimental study	Health education, customer orientation.	2

Figure 2. Distribution of the selected articles in the MEDLINE, SCOPUS and CINAHL databases, according to the theme of Nursing Care after CTA. Niterói (RJ), Brazil, 2017.

The level of evidence in the studies is characterized by five levels of evidence 4, because they are qualitative approaches; four by level of evidence 3 and four articles as level of evidence 2, because they are studies with an experimental design. It is observed that only four articles were published in the last five years, which corresponds to 30% of the sample. It should be noted that all authors

of the identified articles are nurses and all selected publications are international, being an article in the United Kingdom; eight, Americans; three, Australians and one from Jordan, all published in English.

In the sample found by a British group of studies in percutaneous coronary intervention, the essential care in the post-procedure, when the client is usually transferred from the

cardiac catheterization laboratory to a recovery area, and in some cases, for a highly complex care facility. It is perceived that there is a tendency for shorter hospitalization, and the team should be familiar with the care of the client, including observation of the vascular access point and the care of sealing devices, hemodynamics and electrocardiogram (ECG) monitoring, in treatment with vasovagal episodes (A1).

This idea is corroborated by study A2, which addresses the management of post-CTA care by the nurse, citing, for example, the acquisition of 12-lead ECG or cardiac monitoring, which reflects the revascularized artery for the immediate recognition of possible acute occlusions in post-CTA and its use whenever the client has new signs or heart symptoms. It also addresses the recognition of complications by the nurse, such as vascular, cardiac, allergic and infection, careful radial approach and evaluation of the radial and ulnar pulses. The concern with the insertion site and related complications, such as bruising and active bleeding, and the reduction of resting time in order to favor early ambulation are observed, although this evidence has not shown a difference in outcome for complications.

It is stated in the same study that client and family education should begin immediately after admission due to the shorter stay, and teaching methods should be tailored to each client, involve the family and use the most diverse resources. Topics such as assessment of puncture site for complications, activity limitations, follow-up care, when to seek medical care, use of medications, and modification of risk factors should be included in discharge counseling. It is further argued that nurses are in a unique position to educate clients on the importance of eliminating modifiable risk factors: stopping smoking, drug therapy, diet and regular exercise are key issues to be addressed with clients and their families.

In order to prevent complications, three main post-CTA nursing care were investigated in order to prevent complications: maintenance of position in the dorsal position, time to ambulation after removal of the introducer sheath, and use of arterial occlusion devices. Care was taken, such as the measurement of vital signs and the administration of anticoagulant drugs, to the risk of developing complications in a case-control study (A4), where the findings were comparative, but did not show preventive care in relation to complications, only the risk factors for them to develop, pointing, for

example, that clients with heparin administration were at increased risk for bleeding and bruising.

As regards the occurrence of possible complications, several patients under care were studied in order to prevent contrast-induced nephropathy (CIN), in the A5 study, describing the importance of nurses in this situation. Care after the procedure, for example, to maintain oral and venous hydration, taking into account water restrictions and the monitoring of serum creatinine levels after 48 to 72 hours, basis of comparison the values before the procedure.

It is also a question of the early identification of post-procedure bleeding in study A6, which is cited as an important role of the nurse, since bleeding is the most common non-cardiac complication in patients submitted to CTA the antiplatelet and anticoagulant therapies they receive. Regular monitoring of puncture sites, pain, peripheral pulses, vital signs, heart rhythm, and fluid ingestion and outflow should be included in the monitoring. It is also highlighted in the research: the interpretation of vital signs, the results of laboratory tests and electrocardiographic tracings and the speech of the importance of the nurse being updated on the guidelines and treatment for these clients, which guarantees the care based on evidence and reduces treatment time.

In this same article, we discuss the responsibility of the nurse in client management, that is, the planning of post-hospital care, mainly related to guidance on the use of antiplatelet agents. In its series of case studies, the importance of Nursing is explained in activities such as: explaining to clients and the family what is happening to them and assisting in the risk stratification of clients, acting as an information channel between different members of the health care team, assisting in decision-making.

The A7 study compared three different types of dressing: elastic bandage, compressive dressing and transparent bandage on the puncture site. In addition, the path of choice was not mentioned, whether femoral or radial, and the variables were client comfort, nurse assessment and complications. It was concluded that the compressive dressing presented higher rates of complications and discomfort and lower rates of easy evaluation of the puncture site. The puncture site was evaluated by the nurses every four hours and transparent dressings and elastic bandage were examined. The issue of pain is also highlighted in the study, and this is not its main approach. However, the

importance of the topic is emphasized, since pain is a nursing diagnosis, according to the North American Nursing Diagnosis Association - NANDA, 28 and their relief is an expected result.

In order to analyze the minimum time for its implementation, articles A8 and A9 were carried out in view of early ambulation, and the occurrence of complications was one of the variables of these studies. It was concluded that the time of walking after sheath withdrawal can be reduced to three to four hours safely, although this did not show any relevant difference between complication rates. It is also approached in the study on comfort, having this as a variable when analyzing early ambulation. For these results, the discussion on the reduction of the minimum time for walking, which can be reduced in institutions that still maintain rest for approximately six hours, is favored, and this minimizes the discomfort caused by the client's situation at the moment, promotes well-being, besides providing venous return and reducing embolic complications.

Monitoring in Intensive Care Unit (ICU) was described as "traditional" in study A10. It was also discussed the nurses' ability to evaluate, recognize and act effectively in the case of complications, collaborating with the other studies cited. Cardiac monitoring and pulse oximetry, blood pressure, temperature, respiratory and cardiac frequency are also recommended in the article, as well as the importance of promoting the comfort and health of the client.

In a review of the literature, important information about the best practices, norms and priorities of nursing specialists in the cardiovascular area (A11) was presented. In the research, it is suggested that there is heterogeneity in the practice standards and norms related to Nursing care for individuals undergoing CTA, and the main differences would be related to the time to ambulation, client positioning and management methods discomfort over the removal of the femoral sheath. Pain management was described as the main Nursing care for the moment of withdrawal of the femoral sheath.

In this context, article A12 demonstrated the deficiency of studies in the area through a review, which had the objective of evaluating the management of Nursing care to clients submitted to the CTA. It is alleged that, despite the frequency of the procedure, there is limited data to inform nursing care for people undergoing the procedure. The authors state in this research that there are no broadly accessible nursing practice guidelines,

focusing on the management of this specific care and its results, and that the client's education was the most identified topic related to Nursing activities. These results were based on reports of experience and retrospective studies.

According to the authors, it is believed that the reduced time of hospital stay, common in most post-CTA admissions, is a challenge for the effective delivery of secondary prevention strategies. In this sense, the client and the family should be oriented in order to reach higher levels of perception of the nature of the disease, education on complication prevention and outpatient follow-up. It remains controversial, despite the need for effective information and education, the ability to provide quality customer education during post-CTA recovery.

Customer orientation is mentioned in article A13, which made an approach to the client and the professional, highlighting which orientation needs the client wants and what the professional deems necessary. In the context of health education, the client's demand should be evaluated, and in this case, the participants were concerned about drug therapy; however, care should be taken to keep the client and the family well-oriented in terms of returning to physical activity, food, sleep and rest, and other basic care.

DISCUSSION

From the subjects predominantly addressed in the articles, three categories were organized to better discuss and understand the themes identified: Nursing Care for the prevention and correction of post-CTA complications; Care related to comfort and Guidance and health education.

♦ Nursing Care for the prevention and correction of post-CTA complications

It was evidenced in this review that ten studies addressed questions about procedure complications and related care (A1 to A10), and the most common post-procedure complications are vascular complications, which are related to the insertion site, and include bruising and bleeding. Other complications may occur, such as: vasovagal episodes; allergies; infections; pain; contrast-induced nephropathy (CIN) and acute arterial occlusion.^{16,18,20} It should be noted that in order to avoid such occurrences, the client must have a qualified team to recognize the complications and necessary interventions, as well as adequate facilities for their immediate recovery, which include: cardiac monitoring,

pulse oximetry, ECG and arterial occlusion devices.^{15,17,24}

In this sense, the role of the nurse is highlighted, in which the authors seem unanimous in affirming their importance, mainly in the recognition of possible complications.^{16,20,24,19} In addition, nurses need to be updated on the guidelines for the treatment of this clientele and must be able to identify the associated risk factors, such as the use of anticoagulants and antiplatelet agents associated with the risk of bleeding after the procedure.^{18,20}

In the context of basic human needs, the elimination of body waste as a concern was addressed in addressing the prevention of CIN in an experimental study.²² It should be noted that, in this case, the concern was to guide the clients participating in the research regarding the importance of oral hydration for the prevention of CIN and nurses regarding the importance of venous hydration. The results on elimination using laboratory markers that showed the reduction of CIN in the patients who were submitted to this preparation with hydration were verified.

It is noted that only one study showed concern about the injuries that could be caused by the presence of the dressing, contemplating the basic need to maintain hygiene and skin protection. Three different types of dressing were tested in this study, one of which was the compressive, and it was evidenced that the highest indices of cutaneous complications are of the latter.²¹ For this reason, we encourage reflection on the practice and the creation of strategies to prevent and reduce skin lesions, also promoting comfort. In this way, several nursing actions were identified in post-CTA client care to reduce the risk of complications: observation of the vascular site (including care with dressings and sealing devices); cardiac monitoring (including ECG acquisition); treatment of vasovagal episodes; maintenance of minimum bed rest; stimulation of early ambulation after removal of the introducer sheath; vital signs measurement; administration of high-risk medications (anticoagulants); maintenance of venous and oral hydration; follow-up of laboratory test results; evaluation of peripheral pulses and evaluation of pain.

♦ Care related to comfort

Studies of A7 to A11 were included in this category, since they addressed issues related to the promotion of comfortable care, although the discussion in these studies is mostly related to physical comfort.

It is inferred that, as already discussed in the previous category, pain is a signal that must be monitored by the nurse during the recovery period.²⁰ When considering the known complications, the client may experience precordial pain, headache and pain in the affected limb, either by the puncture trauma or by the pressure of the compressive dressing. It is, in this case, the physical comfort observed by several authors during the research that focused on the observation of the site/member addressed.²¹⁻³

It is added, also on the comfort related to the physical aspect, that only two authors used the "comfort" as variables to be observed in the research subject client.²⁴⁻⁵ Other aspects are related to comfort in the psychic and spiritual dimensions, which were not addressed, being observed the focus on the biological aspect. Comfort should be offered according to the limitations of the home and of the needs of the customer, and all customer's needs must be met.

Nursing comfort is defined as the satisfaction of the basic human needs of relief, ease or transcendence that arise from stressful health situations.²⁹ The comfort needs are evaluated in four experience contexts - physical, psycho-spiritual, social and environmental. Comfort is related to the holistic view of the client, taking into consideration the whole and the parts in which the whole is reflected, avoiding fragmentation through the inter and transdisciplinarity of the sciences, arts, philosophies and spiritual traditions, that is, one must take care of the client as a whole.³⁰

It was pointed out, therefore, as Nursing care, in this category: the management of pain related to the use of dressings and occlusion devices; the evaluation of physical comfort during walking; the promotion of comfort according to the limitations of bed rest and the management of discomfort during the removal of the introducer sheath.

♦ Health orientations and education

The aspects related to client orientation and health education in articles A2, A6, A12 and A13 were identified. Advice should be given to clients with their family during the recovery period, aiming not only at immediate (in-hospital) recommendations but also those related to their return home. Questions about medication use, physical activity and return to work before discharge should be addressed in order to foster better understanding of the client and prevent late complications. The nurse's challenge, in this case, is related to the client's short stay in the unit, which

requires, from the professional, health education strategies that are adapted to the client and with the use of the various resources available for this.^{16,30}

The complications related to the use of antiplatelet agents and anticoagulants as a target of the nurse's concern are well discussed, especially the orientation to the client regarding the use of these drugs.²⁰ The risk of complication to which the client is submitted is considered, and the communication favors to the client the clarification about his/her health situation, besides being also related to the emotional comfort for them and their family.

Health education is related to the need to learn, to discover or satisfy the curiosity that leads to normal development and health, using the means available; ³¹ thus, customer orientation can also be considered a means available to lead the client to development normal and health and satisfy their curiosity. It is believed that, empirically, the client wants information about his/her state of health and how he/she will recover after the procedure, besides being a right of the same to access this information. Also discussed in one of the studies on health education, post-discharge care, including guidance on the use of medication.²⁶⁻⁷

CONCLUSION

It is found that, in the identified publications, there is a deficiency in the description of basic care, observing, in this context, only the care for the promotion of physical comfort, even more specialized care, such as the demarcation of an area with hematoma or ecchymosis and assessment of site changes that show warning signs, and the assessments and their frequency are still not well defined. It was also observed that there were no articles that addressed care related to fasting time, blood glucose monitoring and diet, but there was a greater concern with complications and most of the studies reported self-care procedure performed.

It is understood, therefore, that the complexity of basic care may not be observed by the nurse or even devalued due to the fragility in the theoretical knowledge or even by the high demand for the daily routine of professional practice. It is justified the valuation of basic Nursing care, as these are part of the concept of Fundamental Nursing, which represents the basis of the profession and is linked to the notion of the simplest knowledge, being applied according to the basic needs of the client.

This devaluation can be caused by the technician's profile of the nurse and the demand for tasks under his responsibility, which makes him prioritize the care taken as more "complex". In this context, it should be pointed out that this devaluation is a risk to the assistance, as it may generate error or negligence in the provision of care, causing harm to the client.

In addition, three studies emphasize the importance of standardization of actions and the implementation of good practices and norms, affirming this need in services due to the heterogeneity of actions in the most diverse health scenarios, and this contributes to the idea of use of care protocols, which reinforces this need nowadays.

Thus, it is a challenge for the practice of care to address all the dimensions of customer care, since it is a paradigm shift; therefore, it is up to nurses and researchers to deepen the subject in order to favor the holistic care that involves the individual as a whole, valuing the being and everything that involves them in the situation in question.

It should be emphasized that care, however simple it may seem, can become complex, since it is linked to the situation in which the client is inserted, making essential care indispensable in the most diverse settings of nurses. It is therefore suggested that these results be applied in the publication of guides to good practices or care protocols, since the set of interventions identified in this study favors this construction and will help nurses to make decisions in their daily practice.

REFERENCES

1. Chaves SCS, Brusamarello T, Huernemann RR. Health education within the hemodynamic service: an integrative review. *Saúde Pesqui* [Internet]. 2018 Jan/Apr [cited 2018 June 15]; 11(1):171-8. Doi: <http://dx.doi.org/10.177651/1983-1870.2018v11n1p171-178>
2. Costa GR, Cardoso SB, Sousa LL, Soares TR, Ferreira AKA, Lima FF. Practice nurses in service hemodynamic: an integrative review. *R Interd* [Internet]. 2014 July/Sept [cited 2018 June 15];7(3):157-64. Available from: https://revistainterdisciplinar.uninovafapi.edu.br/index.php/revinter/article/view/468/pdf_149
3. Hilário TS, Santos SM, Kruger J, Goes MG, Casco MF, Rabelo-Silva ER. Pain assessment and management in patients undergoing endovascular procedures in the catheterization laboratory. *Rev Esc Enferm USP*. 2017;51:e03229. Doi:

<http://dx.doi.org/10.1590/S1980-220X2016018003229>

4. Mansur AP, Favarato D. Trends in Mortality Rate from Cardiovascular Disease in Brazil, 1980-2012. *Arq Bras Cardiol*. 2016. Doi: [10.5935/abc.20160077](https://doi.org/10.5935/abc.20160077)

5. Abizaid A. Manual de Cardiologia Intervencionista do Instituto Dante Pazzanese. Rio de Janeiro: Elsevier; 2013.

6. 2015 ACC/AHA/SCAI Focused Update on Primary Percutaneous Coronary Intervention for Patients With ST-Elevation Myocardial Infarction: An Update of the 2011 ACCF/AHA/SCAI Guideline for Percutaneous Coronary Intervention and the 2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Society for Cardiovascular Angiography and Interventions. *Circulation*. 2016 Mar; 1135-47. Doi: [10.1161/CIR.0000000000000336](https://doi.org/10.1161/CIR.0000000000000336)

7. Dotto JI, Backes DS, Dalcin CB, Lunardi Filho WD, Siqueira HCH, Zamberlan C. Systematization of nursing assistance: order, disorder or (re) organization? *J Nurs UFPE on line*. 2017 Oct; 11(10):3821-9. Doi: [10.5205/revol.12834-30982-1-SM.1110201716](https://doi.org/10.5205/revol.12834-30982-1-SM.1110201716)

8. Ferreira EB, Pereira MS, Souza ACS, Almeida CCOF, Taleb AC. Systematization of nursing care in the perspective of professional autonomy. *Rev Rene*. 2016 Jan/Feb; 17(1):86-92. Doi: [10.15253/2175-6783.2016000100012](https://doi.org/10.15253/2175-6783.2016000100012).

9. Silva C, Sena L, Rolim I, Sousa S, Sardinha A. Nursing care for patients with chronic health conditions: an integrative review. *J res fudam care*. 2017 Apr 9(2):599-605. Doi: <http://dx.doi.org/10.9789/2175-5361.2017.v9i2.599-605>

10. Rodriguez GC, Tristão FS, Oliveira SG, Sartor SF, Velleda KL. The discourse of “being Nurse”. *Ver Uruguay Enferm [Internet]*. 2017 Nov [cited 2018 June 15];12(2):76-91. Available from: <http://rue.fenf.edu.uy/index.php/rue/article/view/232/224>

11. Ercole FF, Melo LS, Alcoforado CLGC. Revisão integrativa versus revisão sistemática. *REME rev min enferm [Internet]*. 2014 Jan/Mar [cited 2018 June 15];18(1). Doi: <http://www.dx.doi.org/10.5935/1415-2762.20140001>

12. Soares CB, Hoga LAK, Peduzzi M, Sangaleti C, Yonekura T, Silva DRAD. Integrative Review: concepts and methods used in nursing. *Rev Esc Enferm USP*. 2014 Apr; 48(2):335-45. Doi:

<http://dx.doi.org/10.1590/S0080-6234201400002000020>

13. Souza MT, Silva MD, Carvalho R. Integrative review: what is it? How to do it?. *Einstein [Internet]* 2010 [cited 2018 June 15]; 8(1Pt1):102-6. Available from: http://www.scielo.br/pdf/eins/v8n1/pt_1679-4508-eins-8-1-0102.pdf

14. Medeiros HP, Teixeira E. Research methodology for nursing and health: a book review. *Rev Bras Enferm [Internet]*. 2016 [cited 2018 June 18];69(5):943-4. Doi: <http://dx.doi.org/10.1590/0034-7167-2015-0135>

15. Dawkins KD, Gershlick T, Belder M, Chauhan A, Venn G, Schofield P, et al. Percutaneous coronary intervention: recommendations for good practice and training. *Heart*. 2005; 91(Suppl 6):S1-27. Doi: [10.1136/hrt.2005.061457](https://doi.org/10.1136/hrt.2005.061457).

16. Shoulders OB. Management of patients after percutaneous coronary interventions. *Crit Care Nurse [Internet]*. 2008 Oct [cited 2018 Aug 12]; 28(5):26-40. Available from: <http://ccn.aacnjournals.org/content/28/5/26.long>

17. Mills C, Wright C, Newell C. Care of the post percutaneous coronary intervention patient. *Aust Nurs J*. 2012 Feb; 19(7):26-7. PMID: [22390011](https://pubmed.ncbi.nlm.nih.gov/22390011/)

18. Dumond CJ. Blood pressure and risks of vascular complications after percutaneous coronary intervention. *Dimens Crit Care Nurs*. 2007 May/June; 26(3): 121-7. Doi: [10.1097/01.DCC.0000267807.95228.2e](https://doi.org/10.1097/01.DCC.0000267807.95228.2e)

19. Lambert P, Chaisson K, Horton S, Petrin C, Marshall E, Bowden S, et al. Reducing Acute Kidney Injury Due to Contrast Material: How Nurses Can Improve Patient Safety. *Crit Care Nurse*. 2017 Feb;37(1):13-26. Doi: [10.4037/ccn2017178](https://doi.org/10.4037/ccn2017178)

20. Rodel VB. Acute Coronary Syndrome: Focus on Antiplatelet Therapy. *Crit Care Nurse*. 2016;36 15-27. Doi: [10.4037/ccn2016497](https://doi.org/10.4037/ccn2016497)

21. Mcle S, Petite T, Pride L, Leeper D. Transparent film dressing vs pressure dressing after percutaneous transluminal coronary angiography. *Am J of Crit Care*. 2009 Jan; 18(1):14-9. Doi: [10.4037/ajcc2009949](https://doi.org/10.4037/ajcc2009949)

22. Schicks IE, Schoonhoven L, Aengevaeren WR, Nogaredo-Hoekstra C, Va Achterberg T, Verheugt FW. Ambulation after femoral sheath removal in percutaneous coronary intervention: a prospective comparison of early vs. late ambulation. *J Clin Nurs*. 2009 July [cited 2018 Feb 15];18(13):1862-70. Doi: [10.1111/j.1365-2702.2008.02587.x](https://doi.org/10.1111/j.1365-2702.2008.02587.x)

23. Augustin AC, Quadris AS, Sarmento-Leite RE. Early sheath removal and ambulation in patients submitted to percutaneous coronary intervention: a randomised clinical trial. *Int J Nurs Stud*. 2010 Aug; 47(8):939-45. Doi: [10.1016/j.ijnurstu.2010.01.004](https://doi.org/10.1016/j.ijnurstu.2010.01.004)
24. Waker S, Jen C, McCosker F, Cleary S. Comparison of Complications in percutaneous coronary intervention patients mobilized at 3, 4, and 6 hours after femoral arterial sheath removal. *J Cardiovasc Nurs*. 2008 Sept/Oct; 23(5):407-13. Doi: [10.1097/01.JCN.0000317452.72402.7c](https://doi.org/10.1097/01.JCN.0000317452.72402.7c)
25. Rolley JX, Salamonson Y, Dennison CR, Davidson PM. Nursing Care Practices following a Percutaneous coronary intervention: results of a Survey of Australian and New Zealand Cardiovascular nurses. *J Cardiovasc Nurs* [Internet]. 2010 Jan/Feb [cited 2017 Aug 15];25(1):75-84. Doi: [10.1097/JCN.0b013e3181bb419d](https://doi.org/10.1097/JCN.0b013e3181bb419d)
26. Rolley JX, Davidson PM, Salamonson Y, Fernandez R, Dennison CR. Review of nursing care for patients undergoing percutaneous coronary intervention: a patient journey approach. *J Clin Nurs* [Internet]. 2008 [cited 2018 Feb 12];18:2394-405. Available from: <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2702.2008.02768.x>
27. Mosleh SM, Nidal FE, Mona MAA. Perceived learning needs according to patients who have undergone major coronary interventions and their nurses. *J Clin Nurs* [Internet] 2017 Feb [cited 2018 Feb 12]; 26(3-4):418-26. Doi: [10.1111/jocn.13417](https://doi.org/10.1111/jocn.13417).
28. Diagnósticos de Enfermagem da NANDA: definições e classificação 2012-2014. Porto Alegre: Artmed; 2013.
29. Kolkaba KY. The Art of Comfort Care. *J Nurs Scholar* [Internet]. 1995 [cited 2018 Jan 16];27(4):287-9.
30. Lemos RCA, Jorge LLR, Almeida LS, Castro AC. Nurses' vision about holistic welfare to hospitalized cliente. *Rev eletrônica enferm*. 2010 Apr/June;12(2):354-9. Doi: <http://dx.doi.org/10.5216/ree.v12i2.5544>
31. Ferrari RFR, Rodrigues DMMR, Baldissera VDA, Pelloso SM, Carreira L. Applicability of the virginia henderson theory for foundations in nursing: weaknesses and potential. *Arq Ciênc Saúde Unipar* [Internet]. 2014 Jan/Apr [cited 2018 Aug 15];18(1):51-6. Available from: <http://www.revistas.unipar.br/index.php/sau/article/viewFile/5158/2984>

Submission: 2018/05/30

Accepted: 2019/01/14

Publishing: 2019/03/01

Corresponding Address

Vivian Cristina Gama Souza Lima
Rua Odilon Araújo, 249 b2/304
Bairro Cachambi
CEP: 20775-160 – Rio de Janeiro (RJ), Brazil