

## ORIGINAL ARTICLE

### PATIENTS' UNDERSTANDING OF NURSING INSTRUCTIONS IN CARDIAC CATHETERISM: A QUALITATIVE STUDY\*

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#### ABSTRACT

**Objective:** To understand patients' knowledge about the cardiac catheterization procedure in order to elaborate pre-catheterization nursing instructions.

**Methods:** Qualitative study with 31 adult patients from a teaching hospital in the inland of the state of São Paulo, conducted in the first half of 2015. Data was collected through semi-structured interviews and analyzed with the use of Content Analysis.

**Results:** Three categories emerged from the statements, as follows: Understanding of the signs and symptoms that led to the need to perform cardiac catheterization; Partial assimilation of written information received by the patients, and Ignorance of the cardiac catheterization procedure performed.

**Conclusion:** The construction and implementation of adequate planning of health instructions clarifies the doubts of the individuals, so that they are more prepared to make sound decisions regarding their health, and promotes the recognition of nursing actions.

**DESCRIPTORS:** Communication; Cardiac Catheterization; Nursing care; Health education.

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## ARTIGO ORIGINAL / ARTÍCULO ORIGINAL

**COMPREENSÃO DE PACIENTES ÀS ORIENTAÇÕES DE ENFERMAGEM NO CATETERISMO CARDÍACO: UMA PESQUISA QUALITATIVA****RESUMO**

**Objetivo:** compreender o conhecimento dos pacientes sobre o procedimento do cateterismo cardíaco a fim de elaborar orientações de enfermagem no pré-exame.

**Métodos:** pesquisa qualitativa com 31 pacientes adultos de um hospital de ensino do interior do estado de São Paulo, realizada no primeiro semestre de 2015. Os dados foram coletados mediante entrevista semiestruturada e analisados pelo método de Análise de Conteúdo.

**Resultados:** dos discursos emergiram três categorias: Compreensão dos sinais e sintomas que levaram à necessidade de realização do cateterismo cardíaco, Assimilação parcial das informações recebidas na forma escrita pelos pacientes, e Desconhecimento sobre o procedimento de cateterismo cardíaco realizado. Os resultados apontam para pacientes que recebem orientações insuficientes para a compreensão de procedimento tão complexo.

**Conclusão:** o planejamento adequado de orientações em saúde, ao ser construído e colocado em prática, esclarece e fortalece os indivíduos para a promoção da saúde e promove o reconhecimento das ações de enfermagem.

**DESCRIPTORES:** Comunicação; Cateterismo Cardíaco; Cuidados de Enfermagem; Educação em Saúde.

**COMPRESIÓN DE PACIENTES DE LAS INDICACIONES DE ENFERMERÍA SOBRE CATETERISMO CARDÍACO: UNA INVESTIGACIÓN CUALITATIVA****RESUMEN:**

**Objetivo:** Comprender el conocimiento del paciente sobre el procedimiento de cateterismo cardíaco, a efectos de elaborar indicaciones de enfermería previas al estudio.

**Métodos:** Investigación cualitativa con 31 pacientes adultos de un hospital de enseñanza del interior del estado de São Paulo, realizada en el primer semestre de 2015. Datos recolectados mediante entrevista semiestructurada, estudiados según Análisis de Contenido.

**Resultados:** Surgieron tres categorías de los discursos: Comprensión de señales y síntomas que determinaron la necesidad de realizar un cateterismo cardíaco, Asimilación parcial de la información escrita recibida por los pacientes, y Desconocimiento del procedimiento de cateterismo cardíaco realizado. Los resultados demuestran que los pacientes reciben indicaciones insuficientes para comprender un proceso tan complejo.

**Conclusión:** La planificación adecuada de indicaciones de salud, al elaborarse y ponerse en práctica, brinda claridad y fortaleza a los individuos en la promoción de salud, y promueve el reconocimiento de las acciones de enfermería.

**DESCRIPTORES:** Comunicación; Cateterismo Cardíaco; Atención de Enfermería; Educación en Salud.

## INTRODUCTION

As soon as the World Health Organization reported that cardiovascular diseases were the leading causes of death in the world and responsible for high admission rates and high hospital charges<sup>(1)</sup>, investments in techniques and technologies used for diagnostic elucidation and effective treatment of these diseases were boosted. These advances contribute to the improvement of studies in hemodynamics, such as cardiac catheterization<sup>(2)</sup>.

Coronary angiography, popularly known as cardiac catheterization, is an invasive diagnostic procedure to access blood vessels and heart chambers in which catheters are inserted through a percutaneous approach and contrast infusion, to provide information necessary to guide therapeutic interventions. In some cases, the treatment can be performed immediately after the procedure, and is then called coronary angioplasty. Lack of knowledge about the procedure has usually a physiological and psychological impact on the patients, more often causing anxiety and fear<sup>(2-4)</sup>.

Patients' fears and anxiety can be eliminated when these individuals are given instructions before the procedure. A study that attempted to identify the patients' feelings during the perioperative period, verify the delivery of preoperative instructions and patients' satisfaction with the care provided revealed that preoperative instructions were not being effectively conveyed<sup>(5)</sup>.

Therefore, it is important to stress that the improvement of communication skills is essential for the development of nurses' activity, since nursing care is expressed in interpersonal relationships and involves effective forms of communication. Thus, in addition to specific care related to the procedure (fasting, suspension or maintenance of medications for daily use, among others) and post-intervention care (dressing, care of the puncture site, among others), nurses must invest in the ability to communicate, because the use of adequate tools will contribute to the delivery of effective and innovative care that will benefit both the health professional and the patient<sup>(6)</sup>.

Patients undergoing cardiac catheterization, as well as subjects who undergo surgical procedures in outpatient surgery settings, shall be assisted by nurses from the cardiovascular intervention sector (hemodynamics) in order to understand the instructions and the planning of the actions. Thus, the care provided should necessarily be based on the Systematization of Nursing care, which contributes to guide, organize and provide the foundation of nurses' knowledge, so that they can deliver appropriate care to this specific population<sup>(7)</sup>.

In view of the abovementioned, the following question is posed: What is the level of understanding patients undergoing hemodynamic assessment in the cardiovascular intervention center have about the cardiac catheterization procedure and how much information do they have about it? This investigation is necessary, since in-depth knowledge of the object of the study may support pre-cardiac catheterization instructions provided, as well as increase the availability of adequate spaces for professionals and patients of this service. Thus, this study aims to understand the patients' knowledge about the cardiac catheterization procedure in order to elaborate nursing instructions to be given before the procedure.

## METHOD

Qualitative study carried out in the cardiovascular intervention (hemodynamics) department of a teaching hospital in the inland of the State of São Paulo that assists an average of 4,500 patients per year in cardiology, vascular and interventional neurology specialties.

The service is available 24 hours a day, seven days a week, and an average of 1500

cardiac catheterizations and 400 angioplasties, as well as other procedures, are performed every year. Routine or elective exams are scheduled Mondays through Fridays at the cardiovascular intervention (hemodynamic) center. After submitting the request, the patient receives a printed sheet containing basic instructions related to the day of the procedure, including the time and date on which the procedure will be performed. The procedure can be scheduled by the patient or anyone older than 18 years.

Patients aged 18 years and over who were waiting to undergo elective cardiac catheterization procedures at the catheterization laboratory (hemodynamics) participated in the study. Thirty-five (35) patients were selected to participate and four were excluded because they had undergone previous catheterization procedures. None of the participants refused to participate. Purposeful sampling and theoretical saturation was used in this study<sup>(8)</sup>, which was obtained after analysis of the 31<sup>st</sup> interview.

Data was collected by the researcher in a private room in the cardiovascular intervention sector (hemodynamics), through a semistructured interview based on the following guiding questions: Why are you going to undergo this procedure? Tell me about it. What instructions about the catheterization procedure did you receive? What is your understanding of cardiac catheterization?

Upon admission, the patients were submitted to some tests before preparation for cardiac catheterization. Data was collected from two patients per day, usually the fifth and sixth patients, according to the order of arrival, and the inclusion criterion was patients undergoing catheterization for the first time. This selection was necessary to prevent any delay in the routine preparation of the patients, as the interviews should be conducted before the patients entered the preparation room, in order to meet the objective of the study.

Data was collected in the first half of 2015, and the interviews were recorded and later transcribed into written form. At the end of each interview, the researcher explained to the patient the procedure to be performed and the care required before and after the procedure, and also clarified any doubts that might arise at that moment. To preserve the participants' anonymity, the interviews were sequentially numbered from 01 to 31, and the patients names were replaced by a code, i.e. letter "I" followed by the interview order number (I1, I2 ....I31).

Data analysis was performed using Content Analysis<sup>(9)</sup>, for objective, systematic and quantitative description of the content of the interviews. The method can also be characterized as a set of communication analysis techniques aimed to obtain, through the use of systematic and objective procedures for describing message content, indicators (quantitative or qualitative) that allow to infer knowledge about the conditions of production and receipt of these messages.

Content analysis consists of three phases: pre-analysis, analytical description and inferential interpretation. In pre-analysis, the material was organized and the initial ideas were systematized in an analysis plan. In this phase, the recordings were transcribed in full followed by free-floating reading of the texts to get impregnated with the content. Then, in the analytical description phase, the theme was identified and content analytical units were selected and coded according to their convergence with the phenomenon.

The thematic units were then grouped under a general heading, in a categorization process. In the inferential interpretation phase, patients' knowledge about hemodynamics was assessed based on their experience of undergoing a cardiac catheterization procedure. Also, contributions to the improvement of nursing instructions were obtained.

Based on the analysis of the participants' statements, the following categories emerged, as follows: Understanding of the signs and symptoms that led to the need for cardiac catheterization; Partial assimilation of written information received by the patients; and Ignorance of the cardiac catheterization procedure performed.

The study project was approved by the Research Ethics Committee under protocol no. 855.643, in accordance with the legislation about research involving human beings<sup>(10)</sup>. The eligible individuals were informed about the survey and included in the study after their acceptance and signing of the Informed Consent form.

## RESULTS

Thirty-one patients who underwent cardiac catheterization for the first time participated in the study. Regarding age, 18 (58%) were aged 60 years or older, 12 (38.7%) were aged 41-59 years, and only one (3.3%) was a young adult aged between 30 and 40 years of age.

Regarding gender, there were 18 (58.1%) women and 13 (41.9%) men. Most respondents had a low education level: 17 (54.8%) had not completed primary school; one (3.2%) had completed primary school, three (9.7%) had completed secondary education, two (6 (3.2%) had completed a technical education program, one (3.2%) had not completed higher education, one (3.2%) had completed higher education, three (9.7%) could read and write, and two (6.5%) were illiterate (so, digital signature was used).

Based on the respondents' statements, obtained from the guiding questions, three categories emerged: Understanding of the signs and symptoms that led to the need for cardiac catheterization, partial assimilation of written information received by the patients and ignorance of the cardiac catheterization procedure performed.

### I- Understanding of the signs and symptoms that led to the need for cardiac catheterization

The participants were able to identify the physical condition that led to the need to perform cardiac catheterization, according to information provided by the health team, in outpatient care:

*I came here and took the tests because I have a lot of pain. I cannot walk on a treadmill because of my high blood pressure. Then my blood e pressure increased to a very high level, I did not realize it, and suddenly I was lying on a stretcher ... (I13)*

*I will undergo catheterization because I felt bad, I had severe chest pain. I went to see my doctor at the hospital and he requested an ECG test... after the test, I was sent to the catheterization lab for the procedure (I19)*

*I will undergo catheterization because I have high blood pressure and myocardial infarction signs, according to my doctor, you know (I17)*

### II- Partial assimilation of written information received by the patients

This category shows that all the instructions received by participants were written and although there were 14 items, the most assimilated were fasting, suspension or maintenance of daily medications and need to bring personal clothes and bedding. According to the respondents' statements the instructions were focused on the patients' physical training, and no participant reported any instruction about the procedure itself:

*I'm supposed to fast... it is ticked on the printed sheet. (I1)*

*I received a printed paper with instructions of what I should bring.. I must bring bedding, a CD, right? Fast for 10 hours, I cannot eat anything, I need to fast. (I4)*

*Bring a CD to record the procedure ... bring a companion ... bring pajamas or sweatshirt, blanket and sheet. (I7)*



The results that emerged from this category allowed us to reflect on the instructions provided by the health team. The patients receive a printed sheet with various instructions containing items related to physical preparation for the procedure, such as fasting, and medications to be taken/suspended, and general instructions, which include need for a companion, suitable clothing and some materials such as a CD for recording the procedure to be taken to the requesting physician.

The statements revealed insufficient assimilation of the written instructions provided, since the participants mentioned fasting in their reports, which is a necessary requirement for most health examinations. Regarding the other items, including clothing and materials, most patients failed to comply with these instructions, indicating that they are not aware of this need, possibly because of the low educational level of the study population.

Patients undergoing cardiac catheterization must be aware of the risks related to the procedure, of how it will be performed and all the instructions to be followed before the procedure. This will only be possible if the patient is properly advised by health professionals with good communication skills, so that a relationship of trust is established between the patient and the health professional.

### III- Ignorance of the cardiac catheterization procedure performed

Regarding the understanding of cardiac catheterization there is no clear information about the procedure, with consequent misunderstandings regarding the subject, since all users reported "not knowing anything" about the procedure:

*I don't know! The doctor said that I had to undergo catheterization, but did not explain the procedure. (I2)*

*I don't know anything, the doctor did not explain anything, and if he did, I don't remember now. (I10)*

*I know almost nothing about it. My sister said that the procedure is done on the thigh, a small spring is placed there, and it goes through the vein. (I15)*

*I know what other people have told me, that a cut will be made in my skin (arm) for inserting something. I cannot explain it right, I do not know anything. (I31)*

## DISCUSSION

The lack of information and the misunderstanding in the statements that emerged in this study, regarding a procedure of great complexity, indicate a gradual loss of the autonomy of the individuals, which may be related to the growing authoritarianism of the health teams. Patients' understanding that catheterization was a treatment may generate frustration in those who expected their problems/disorders to cease as at the end of the procedure.

Therefore, the guidance provided by nurses is crucial to explain to the patients that the procedure is safe, as well as to clarify them about future events. The instructions can be carried out verbally or through informative manuals<sup>(11)</sup>. It is important to adapt the content to the educational and cultural level of the patient, in order to avoid learning limitations associated to the educational level<sup>(12)</sup>.

Therefore, information transmitted verbally and through printed forms is not adequately understood by the patients, which may impair the true understanding of the instructions<sup>(13)</sup>, a fact observed in the participants' statements. It should be stressed that educational materials facilitate the mediation of learning contents, but cannot replace verbal information, which is given through interpersonal relations, according to the needs

of each patient.

The use of educational strategies is important for the health team, especially for the Nursing team, because, when properly planned, they contribute to the success of the treatment and awareness about the health-disease process. Through the implementation of these strategies, positive attitudes can be selected for the maintenance of individual and collective health, increasing the effectiveness of necessary personal changes, which contribute not only to the prevention and/or control of risk factors, but also to ensure a better quality of life for the patients<sup>(14)</sup>.

Regarding the content of the written information, the reports that emerged from this study showed the lack of validation of the instrument, which results in a poor and even misleading understanding of the instructions. The literature highlights the importance of elaborating and validating information manuals for patient education on complex therapeutic or diagnostic methods<sup>(4)</sup>.

In addition, there is greater focus on physical care, which is corroborated by scientific studies. The instructions of the nursing team prioritize the instrumental techniques of the profession, failing to consider the individual in a holistic way<sup>(15)</sup>, although care relationships involve attributes such as love, awareness, zeal, solidarity and ethics. Care requires awareness, knowledge and must be based on affection, active listening and affection<sup>(16)</sup>.

A study that aimed to describe the knowledge and meaning of cardiac catheterization for patients with heart disease, conducted in a University in Maranhão, showed that knowledge about cardiac catheterization was limited. The authors also highlighted the importance of health strategies, with emphasis on health education programs, and governmental investments are crucial for the adequate structuring of cardiovascular care services<sup>(14)</sup>.

The literature describes important strategies for health education. Based on their clinical experience, nurses can develop their own educational materials, facilitating the process of health education. The elaboration of an educational video as an educational strategy for cancer patients in a research project has proven to be a valuable communication strategy for the technological development of nursing care, besides providing access to various pieces of information that were organized to meet the different needs of the patients<sup>(17)</sup>.

A study on the impact of an educational activity on the life habits of patients with coronary disease showed that the patients appreciated the educational activity, emphasizing the importance of the instructions received before the procedure, because they helped reduce the fear and anxiety experienced by them and their families. Moreover, instructions on healthy habits lead to changes in eating habits, stimulate physical activity and smoking cessation<sup>(19)</sup>. Nurses must coordinate and promote risk prevention factors, involving the patients and their families in this process<sup>(20)</sup>.

The literature recommends effective communication between the nursing team and the patients undergoing cardiac catheterization. Thus, studies that validate the understanding of these instructions are needed. These knowledge gaps, combined with patients' anxiety and insecurity about their disease and diagnostic and therapeutic procedures, can lead to misperceptions and risks in pre- and post-procedure care<sup>(13,21)</sup>.

Finally, based on the results of this study, we have improved the written instructions on cardiac catheterization and the preparations for the procedure delivered to the patients when the procedure is scheduled. We also planned the production of an educational video to be run before the procedure, as a tool for communicating with patients, relatives or companions.

The video lasts approximately two minutes and 40 seconds, and is supposed to be run daily, in a television set, in the waiting room. It explains that the procedure is diagnostic and includes instructions on physical preparation, use of routine medications, the structure

of the rooms of the cardiovascular intervention center (hemodynamics) and the participation of family members/companions in this process. Thus, it is believed that these instructions are consistent with the characteristics of outpatient exams and the conditions of clients and teams in this institutional setting.

One limitation of this study is the fact that it used a non-probabilistic sampling in order to meet the requirements of qualitative research. Moreover, data cannot be generalized, since all the participants were undergoing the procedure in the same health institution, and those patients who had already performed cardiac catheterization were not included.

## CONCLUSION

In this study, the participants reported that despite receiving written instructions, they were unaware of the procedure, indicating that written instructions alone cannot provide them with a proper understanding of the procedure. It is now clear that the use of only one form of communication is not sufficient for the consolidation of learning.

In this process of providing information to the patients, effective verbal and non-verbal communication should be considered as a basic care instrument. Clear and objective instructions provide support, comfort and surely promote healthy and independent relationships between patients, health professionals and family members.

As the leaders of the health team, nurses play the role of educators, and in order to perform this role properly and efficiently, they must use communication for the development of health education programs for both patients and families and for the health team itself.

As soon as proper planning of health instructions is constructed and put into practice, it will help clarify the doubts of the individuals, so that they become independent and capable of making sound decisions regarding their health, and it will also promote the recognition of nursing actions.

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