DOI: 10.15253/2175-6783.2016000100005
www.revistarene.ufc.br

Original Article

Knowledge and meaning of cardiac catheterization from the perspective of cardiac patients

Conhecimento e significado do cateterismo cardíaco para pacientes cardiopatas

Yana Thalita Barros de Oliveira Castro[1], Isaura Letícia Tavares Palmeira Rolim[1], Andréa Cristina Oliveira Silva[1], Líscia Divana Carvalho Silva[1]

Objective: to describe the knowledge and significance of cardiac catheterization from cardiac patients' perspective. **Methods:** descriptive and qualitative study of patients undergoing cardiac catheterization. Five categories were identified through content analysis. **Results:** knowledge of patients on cardiac catheterization proved to be limited; the subject was surrounded by lack of knowledge. Cardiac catheterization means a treatment for unblocking coronary arteries and it is confused with therapeutic purposes. There were reports of symptoms related to heart disease such as fatigue and chest pain and related to the exams such as worry, anxiety, depression, fear and restlessness generated, mainly, by expectations of the unknown. The majority of the respondents proved to be satisfied with the results of the exam, due to the discovery and treatment of heart diseases. **Conclusion:** cardiac catheterization means treatment and clearance of coronary arteries and it is confused with therapeutic purposes. Feelings such as worry, anxiety, fear and restlessness are described when patients are subjected to examination, generated mainly by expectations of the unknown.
Descriptors: Cardiac Catheterization; Knowledge; Nursing.

Objetivo: descrever o conhecimento e significado do cateterismo cardíaco para pacientes cardiopatas. **Métodos:** estudo descritivo e qualitativo com pacientes submetidos ao cateterismo cardíaco. Mediante análise de conteúdo, foram identificadas cinco categorias. **Resultados:** o conhecimento dos pacientes sobre o cateterismo cardíaco mostra-se limitado, o tema era provido de certo desconhecimento. O cateterismo cardíaco significa tratamento, desobstrução das artérias coronárias e confundem com finalidade terapêutica. Houve relatos de sintomas relacionados à doença cardíaca como o cansaço e a precordialgia e relacionados aos exames como preocupação, ansiedade, desânimo, medo e nervosismo gerados principalmente pelas expectativas diante do desconhecido. A maioria dos entrevistados demonstrou estar satisfeitos com os resultados do exame em função da descoberta e tratamento dos problemas cardíacos. **Conclusão:** o cateterismo cardíaco significa tratamento e desobstrução das coronárias e confundem com finalidade terapêutica. Descrevem sentimentos como preocupação, ansiedade, medo e nervosismo quando submetidos ao exame, gerados principalmente pelas expectativas diante do desconhecido.
Descritores: Cateterismo Cardíaco; Conhecimento; Enfermagem.

[1]Universidade Federal do Maranhão. São Luís, MA, Brazil.

Corresponding author: Líscia Divana Carvalho Silva
Rua Parnaíba, 1 Apt. 700 - Casa do Morro, Torre Marcos Regadas. CEP: 65075-839. São Luís, MA, Brazil. E-mail: liscia@elo.com.br

Received: July 16th 2015; Accepted: Jan. 7th 2016.

Introduction

Cardiovascular diseases have had the highest morbidity and mortality rates in the world since the 1960s, representing a major cause of prolonged hospital stay and public expenses with hospitalizations, an economic burden that has gone through exponential growth in recent decades[1]. In Brazil, cardiovascular diseases account for approximately 70.0% of expenses with health care and, according to the projections for 2020, they will remain as the leading cause of mortality and disability. Despite high investments to control these diseases, morbidity and mortality rates have not changed much in recent decades. The best results are related to targeted programs to reduce risk factors[2].

Cardiovascular diseases compromise the functionality of the circulatory system and heart, what is the case of coronary artery disease, cerebrovascular disease and peripheral vascular disease. Coronary artery disease is considered a multifactorial disease. Its incidence is generally dependent on the prevalence of risk factors and, thus, the more frenquent are risk factors for atherosclerosis, the greater is the morbidity and mortality due to this disease[3].

The diagnosis of a disease is based on clinical history associated with the identification of signs and symptoms. Cardiac catheterization is the gold standard examination used for diagnosis of coronary artery disease. The catheterization is considered the method of choice to examine coronary anatomy and to investigate heart disease[4], Which can provide additional information for decision making[5]. From this perspective, the importance of the benefits of an assertive diagnosis stands out, for conducting the appropriate treatment and to improve the quality of life of the cardiac patient.

The quality of life of a person is a very broad concept that incorporates, in a complex manner, physical health, psychological state, level of dependence, social relationships, beliefs and values and the relationship with outstanding features in the environment. The health status of individuals is influenced by their biological conditions as well as by the environment where they live, by their experiences, feelings, perceptions, sensations, for all their social relations, including also socioeconomic and cultural conditions.

There is the symbolism that the heart is the motor organ of life, which may raise significant and unpleasant experiences of threat to human survival, besides contributing to the exacerbation of various feelings such as fear, anxiety, fear and worry. The person with heart disease presents general impairment of his/her health status due to decreased physical and heart strength, causing suffering and insecurity[6].

It is known that when a person undergoes cardiac catheterization, he/she gets in contact with a new situation, which causes feelings and interpretations endowed with value and meaning. A high quality health service is essential in order to reduce morbidity and mortality. The present study had the objective to describe the knowledge and meaning of cardiac catheterization for cardiac patients.

Methods

This is a descriptive and qualitative study performed to identify the knowledge and meaning of cardiac catheterization for cardiac patients. The study was held at the Cardiology Clinic of the University Hospital Presidente Dutra-Unit of the Federal University of Maranhão, the main sector responsible for systematic monitoring of patients with several cardiovascular disorders. This has a weekly average demand of 340 calls, among consultations and exams.

The population consisted of cardiac patients of both sexes who underwent cardiac catheterization exam. Patients who underwent cardiac catheterization for the first time, and that had cognitive and verbalization abilities preserved, were included in the research. Ten (10) patients were excluded because they had previously undergone cardiac

catheterization or heart surgery. Thirty (30) patients were individually interviewed by the researcher. The determination of this number was given by data saturation criterion and satisfactory compliance with the proposed objective.

Interviews were recorded and held in a private room where privacy was provided to respondents, with an average time length of twenty-five (25) minutes, and were held between the months of October and November 2014 at the Cardiology Clinic of the hospital locus of the study while they were waiting for medical consultation. Interviews were guided by strategically relevant questions related to cardiac catheterization: Have you heard about cardiac catheterization? What do you know about cardiac catheterization? What was the meaning for you of having undergone cardiac catheterization? How did you feel before and after cardiac catheterization? Describe for me how was your experience.

The researcher sought to carefuly listen and observe throughout the course of the interview not just the verbally expressed content but also attitudes, expressions of feelings and nonverbal behaviors necessary to enrich the analysis.

The technique of content analysis was used for the treatment of data[7]. The different stages of content analysis were organized around three chronological poles: pre-analysis, exploration of material, treatment of results, inference and interpretation. The pre-analysis include the first activity called "floating" reading. In this phase, contact with the content expressed by the interviewees was established and answers were learned allowing space for impressions and guidelines. UThematic analysis was used as the mode of analysis. "Core meanings" were identified; these compose communication and whose presence or apparition frequency can mean something for the chosen analytical object. The clipping, aggregation and enumeration, which led to a representation of the content, allowed to clarify the evidence or categories. The inference reflected a comparison between what emerged from respondents and what is relevant in the scientific literature, and it is, therefore, grounded in readings referring mainly to the themes of heart disease and cardiac catheterization. Results were treated so that they would be significant (speakers) and valid for the purpose of advancing interpretations concerning the expected objective.

Confirmation of the need for permission to record the interview and ethical aspects linked to it were expressed, and the invited subjects were asked to describe the understanding they had regarding the cardiac catheterization. All were willing to be interviewed by the researcher. With respect to anonymity, subjects were identified with the letter "R" to assign the meaning of "respondent" accompanied by a number that identifies him/her in the research. Example: R1 (Respondent 1).

The study complied with the formal requirements contained in the national and international regulatory standards for research involving human beings.

Results

Sociodemographic and economic characteristics of participants showed that the majority of respondents were male (16 respondents, 51.7%), the mean age was 55.3 years, they were coming from the capital (Maranhão) (22 respondents, 73.0%), with stable union (16 respondents, 51.7%), mulatto skin colour (22 respondents, 73.0%), low education level (15 respondents, 50.0%) and excercised the occupation of fisherman (4 respondents, 13.3%).

Category 1: Exam to clear heart arteries

Although the catheterization constitutes a frequently demanded examination, it is clear that knowledge on this procedure is still limited. It was observed that the majority of respondents 21 (70.0%) approach the subject with a certain lack of knowledge. When questioned about the meaning of cardiac catheterization, most respondents referred to the

clearance of coronary arteries, according to reports: *I do not know ... I just did the exam, but I'm not knowledgeable. I saw all through the screen* (R6). *Which is a procedure to unblock the vein of the heart to clear the artery of the heart* (R3).

It was observed that the cardiac catheterization means treatment, clearance of coronary arteries and it is confused with angioplasty which has therapeutic purpose, what can be explained by the completion of angioplasty soon after the examination when lesions are diagnosed in coronary arteries and are likely to be resolved with the use a "balloon" or "*stent*". However, some respondents understand the catheterization as a procedure to detect modifications in the heart, an exam to investigate the disease, according to these reports: *Ah! It's good because I got to know what I have* (R5). *An improvement, because it actually accomplished (identified) that I did not know what I had* (R4).

Category 2: The catheterization discovered the problem of my heart

The experience of how each person sees the catheterization often depends on how he/she understands the disease. In this research, when respondents were asked about the benefits that they think the catheterization may bring, almost all respondents (29, or 97.0%) proved to be satisfied with the results of the examination because there was discovery and treatment of heart problems: *It was good because we discovered that I had a problem* (R2) *...If I had not made it, I would be likely dead. For me, it was good* (R3).

Category 3: Physical complaints: fatigue, chest pain, shortness of breath and palpitations

Patients report typical symptoms of low myocardial perfusion such as chest pain, fatigue, shortness of breath and palpitations. *Because of the heart that was enlarged, I was feeling very tired, I was not able to do anything. I still have fatigue. A little slope, and I'm not a person. I am worth for nothing* (R10). *A lot of pain in the chest ... I had a heart attack* (R3). *I had a problem was in my heart, it would beat, the rhythm of my heart was very slow, I was like very slow. There were moments when my voice would sound slurred* (R9).

Although chest pain is associated with other pathologies, a differential and early diagnosis is important. Coping with the changes arising from the discovery of heart disease makes them unable to perform everyday activities. When asked by the activities they used to perform previously to the discovery of the disease and the resulting changes thereafter, it is evident that the heart disease changed their lives: *As I got to know that I can not carry any weight, I cannot sweep home. These are things I cannot do* (R6). *I had a lot of losses. I can not run, carry out heavy tasks, I cannot lift any weight. Tiredness, from time to time I feel* (R22).

Category 4: Emotional complaints: worry, anxiety, depression, fear and restlessness

It was observed that respondents described discouraging feelings when undergoing catheterization, feelings such as worry, anxiety, depression, fear and restlessness generated mainly by expectations of the unknown: *Worried, we do not know the direction of the wire ... we feel anxiety, the scheduled time is not fulfilled because you're fasting and going to 9 hours, but that time will never be. It will be from 11:30 h onwards, never at the same time* (R25). *Scared, frightened. I did not know what was coming, I was apprehensive* (R10) *I was nervous, I was afraid. It was very bad* (R16).

Category 5: Change in lifestyle

Some respondents reported information about changes in behavior or lifestyle habits such as physical activity, smoking and alcohol consumption, related to the manifestation of cardiovascular risk or confirmed presence of coronary artery disease, as follows: *I cannot make effort anymore, I cannot work. I'm trying to get this clinical report, rightly so. I cannot make exercise anymore* (R1). *I know he told me to quit smoking and drinking (laughs). And medicine, he prescribed medicines for me to take* (R2).

Discussion

Cardiac catheterization provides detailed information on coronary anatomy, allowing to outline prognosis and plot the best therapeutic strategy which may be a coronary artery bypass grafting or angioplasty[8]. The therapeutic approach for coronary artery disease may be clinical or surgical, and cardiac catheterization is the diagnostic-interventionist hemodynamic technique most frequently performed in the world[9].

The symptomatology of coronary artery disease is related to platelet progression in coronary arteries, the development of atheroma, the rupture with or without thrombosis and the vasoespasm. Patients report typical symptoms of low myocardial perfusion such as chest pain, oppression or burning, dyspnea and fatigue. Although chest pain is associated with many other pathologies, it is important to make a differential diagnosis as early as posible[10].

Patients who acquire a greater degree of knowledge about their health problem tend to be more confident for self-care and adopt better adherence to treatment[11]. The individual who undergoes an invasive cardiac procedure faces multiple challenges in the fight for survival. Such challenges include changes in routine, in lifestyle, the absence of the family, becoming reflective on experiences, especially when surrounded by uncertainty, reflecting mixed feelings such as fears and anxieties in contrast to hopes and expectations. Care actions should be planned and systematic, respecting the potential for an active and productive life and, especially, avoiding that the changes in lifestyle that come with heart disease become so traumatic[11-12].

An invasive exam or surgery is understood often by patients as one event related to disability and/or alteration of body image because it is an unusual and stressful situation that requires from patients pre and postoperative changes in lifestyle. Human beings become vulnerable when stricken by a serious illness, threatened by disability or imminent death, a reality that brings feelings of insecurity, fear and helplessness. Such situation makes them to seek affection in those more present in their lives[13-14].

Any new situation or an unexpected procedure in the health-disease may generate a lot of expectations, feelings and concerns, all of what makes the individual emotionally more susceptible[15]. Conducting an invasive cardiac procedure such as cardiac catheterization precedes a moment of emotional sensations such as anxiety and stress, aggravated often by the waiting time, fear of the procedure, uncertainty of the result, fear of death. All of this causes the patient to have difficulty in assimilating the guidance provided by the health team[9]. The coping with the changes arising from the discovery of the disease transforms the lives of people and make them unable to perform daily activities.

There are few studies on strategies to reduce emotional stressors in patients undergoing procedures, exams or surgery. Regarding cardiac catheterization, published studies are notably scarce. With respect to evaluation of anxiety in patients in the period preceding heart catheterization, anxiety was identified (65.0%) in the majority of experimental studies in publications from the United States (41.1%), Brazil (23.5%) and others (35.3%). Anguish (30.0%) was the second stressor reported by respondents, followed by depression or fear (15.0%). Health professionals tend to dedicate more attention to the period after catheterization, mainly influenced by the emphasis on providing care for common complications posterior to the examination. A different look from the health team given to the period preceding the exam could help to reduce emotional stressors[9].

Anxiety is the main feeling contributing to restlessness and fear in patients waiting for any medical procedure. It is, therefore, necessary that the multidisciplinary team informs the patient about the procedures to be performed, including the risks and benefits[16]. Anxiety worsens when there is lack of information and/or when guidance is not provided satisfactorily. It becomes even more distressing when

the waiting time is higher than what was scheduled, undermining the understanding and knowledge of any information related to catheterization. All this can trigger transient and somatic manifestations, such as tachycardia, sweating, hyperventilation, changes in the state of sleep-wake, among others[15,17]. The lack of information and/or guidance not satisfactorily provided becomes distressing.

Care actions should be planned and systematized so that expectations of patients before and after the procedures, exams, surgeries and so forth can be met. This serves the purpose of a good prospect for hospital discharge, respecting the potential and the patient's own efforts to regain a normal position in the community and to lead an active and productive life, so that the changes in lifestyle arising with the disease may not be so traumatic. The interdisciplinary approach facilitates health actions directed toward risk groups, a proposal of intervention with more quality, which could ensure better results. Educational practices carried out in a systematic and interdisciplinary way by conscientious, responsible and trained health professionals have a positive impact on patient care[11,18].

The individual will need to change behaviors or lifestyle habits in order effectively recover. For example, smoking cessation, changes in diet, stress management, practice of physical exercise, among others, are some of these changes. It is essential that patients and families understand the health-disease process [14]. It is necessary, therefore, to value the subjectivity of persons, rescuing their personal history, their values, their expectations and wishes, and, thus, contributing to security, emotional balance and adherence to treatment[19].

There is an evident significant demand for cardiac catheterization. This stresses the need to develop educational activities, such as qualified listening, sharing of experiences, opportunities for expression of feelings and for building the knowledge that leads to understanding and conscious participation. It is crucial that health professionals welcome patients, gicing space for them to express their doubts and concerns. It is, therefore, necessary to reflect on strategies of prevention and care. The team should feel responsible for the care provided and effective communication can make these situations less threatening and conflicting.

Conclusion

It is noticed that the knowledge regarding cardiac catheterization is limited and the subject is surrounded by a certain kind of lack of knowledge. Cardiac catheterization means a treatment for clearing coronary arteries and it is confused with therapeutic purposes. About the benefits attached to the examination, the subjects demonstrated to be satisfied with the results because it made posible to discover and treat their heart problems.

It was observed that the coping with the changes arising from the symptoms of coronary artery disease, such as chest pain, fatigue, shortness of breath and palpitations, makes patients unable to perform activities of daily living. In addition, subjects reported discouraging feelings when subjected to the examination, feelings such as worry, anxiety, fear and restlessness generated mainly by expectations of the unknown.

These findings invite a reflection on the importance of health strategies with emphasis on the health education programs, and investments by public authorities to properly structure cardiovascular care services are essential. Constant professional and community training in face of the factors involved becomes essential for us to meet the challenge of reducing cardiovascular morbidity and mortality.

Acknowledgement

The Fundação de Amparo à Pesquisa e ao Desenvolvimento Científico e Tecnológico do Maranhão, Process: 013/2015.

Collaborations

Castro YTBO contributed to the collection, organization, interpretation of data. Rolim ILTP and Silva ACO contributed to the writing and critical analysis of the article. Silva LDC contributed to the design, interpretation of data, writing and final approval of the version to be published.

References

1. Lima FET, Araújo TL, Moreira TMM, Medeiros AM, Custódio IL, Melo EM. Consulta de enfermagem: espaço para criação e utilização de protocolo para pacientes após revascularização miocárdica. Rev Gaúcha Enferm. 2010; 31(3):458-66.
2. Coelho CF, Burini RCS. Atividade física para prevenção e tratamento das doenças crônicas não transmissíveis e da incapacidade funcional. Rev Nutr. 2009; 22(6):937-46.
3. Girotto E, Andrade SM, Cabrera MAS, Ridão EG. Prevalência de fatores de risco para doenças cardiovasculares em hipertensos cadastrados em unidade de saúde da família. Acta Scient Health Sci. 2009; 31(1):77-82.
4. Miranda-Chávez I, Ilarraza-Lomelí H, Rius MD, Solano JF, Micheli A, Buendía-Hernández A. Rehabilitación cardiaca en cardiopatías congénitas. Arch Cardiol Mex. 2012; 82(2):153-9.
5. Tarasoutchi F, Montera MW, Grinberg M, Barbosa MR, Piñeiro DJ, Sánchez CRM, et al. Diretriz Brasileira de Valvopatias - SBC 2011/I Diretriz Interamericana de Valvopatias - SIAC 2011. Arq Bras Cardiol. 2011; 97(5 supl. 1):1-67.
6. Ponte KMA, Silva LFS, Aragão AEA, Guedes MVC, Zagonel IPS. Contribuição do cuidado clínico de enfermagem para o conforto psicoespiritual de mulheres com infarto agudo do miocárdio. Esc Anna Nery. 2012; 16(4):666-73.
7. Bardin L. Análise de conteúdo. Lisboa: Edições 70; 2011.
8. Vieira GFM, Farrapo Júnior CL, Schuhmacher Neto R, Trevisol DJ, Trevisol FS. Avaliação clínica dos pacientes submetidos à cineangiocoronariografia no Hospital Nossa Senhora da Conceição, da cidade de Tubarão, SC. Rev AMRIGS. 2010; 54(4):427-31.
9. Buzzatto L, Zanei SSV. Ansiedade em pacientes no período pré cateterismo cardíaco. Einstein. 2010; 8(4):483-7.
10. Dessote CAM, Dantas RAS, Schmidt A. Patients' symptoms before a first a hospitalization due to acute coronary syndrome. Rev Esc Enferm USP. 2011; 45(5):1097-104.
11. Costa GR, Cardoso SB, Sousa LL, Soares TR, Ferreira AKA, Lima FF. Atuação do enfermeiro no serviço de hemodinâmica: uma revisão integrativa. Rev Interd. 2014; 7(3):157-64.
12. Bezerra ASM, Lopes JL, Barros, ALBL. Adesão de pacientes hipertensos ao tratamento. Rev Bras Enferm. 2014; 67(4):550-5.
13. Perrando M, Beuter M, Brondani CM, Roso CC, Santos TM, Predebon GR. O preparo pré-operatório na ótica do paciente cirúrgico. Rev Enferm UFSM. 2011; 1(1):61-70.
14. Galter C, Rodrigues GC, Galvão ECF. A percepção do paciente cardiopata para vida após recuperação de cirurgia cardíaca. J Health Sci Inst. 2010; 28(3):255-8.
15. Torrano SK, Veiga V B, Goldmeier S, Azzolin K. Explanatory digital video disc with patients undergoing diagnostic cardiac catheterization. Rev Latino-Am Enfermagem. 2011; 19(4):888-93.
16. Parcianello MK, Fonseca GGP, Zamberlan C. Necessidades vivenciadas pelos pacientes pós-cirurgia cardíaca: percepções de enfermagem. Rev Enferm Cent O Min. 2011; 3(1):305-12.
17. Garbossa A, Maldaner E, Mortari DM, Biasi J, Leguisamo CP. Efeitos de orientações fisioterapêuticas sobre ansiedade de pacientes submetidos à cirurgia de revascularização miocárdica. Rev Bras Cir Cardiovasc. 2009; 24(3):359-66.
18. Malta DC, Merhy EE. O percurso da linha do cuidado sob a perspectiva das doenças crônicas não transmissíveis. Interface Comun Saúde Educ. 2010; 14(34):593-605.
19. Roecker S, Budó MLD, Marcon SS. The educational work of nurses in the Family Health Strategy: difficulties and perspectives on change. Rev Esc Enferm USP. 2011; 46(3):641-9.