

IMPLEMENTATION OF A NURSING ORIENTATION FOR PRE-OPERATIVE CARDIAC SURGERY PATIENTS USING A DIGITAL MEDIUM

Implementação de orientações de enfermagem aos pacientes pré-operatórios de cirurgia cardíaca em meio digital

Implementación de orientaciones de enfermería a los pacientes en preoperatorio de cirugía cardíaca en los medios digitales

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ABSTRACT: Objective: Analyze the implementation of nursing orientation for preoperative patients of myocardial revascularization surgery using a digital medium. **Method:** An intervention study performed in a hospital in Porto Alegre, Rio Grande do Sul, using a management process method, which has characteristics that include planning, doing, checking, and acting. From August to September of 2015, the patients received presurgical guidance by means of a tablet. **Results:** After guidance was offered, patients and nurses evaluated the use of the strategy, and the data were analyzed by descriptive statistics. Twenty-seven patients were included, and they had an average age of 63.14 ± 10.87 years. All the persons who attended the orientation, reported that they had learned more with regard to the surgery and the required preparation. Four nurses were also included in the study, and all of them affirmed that the use of the audiovisual resource standardized the information transmitted to the patients. **Conclusion:** The use of the tablet facilitated the understanding of preoperative patients of myocardial revascularization surgery and standardized the preoperative orientation given by the nurses. **Keywords:** Nursing care. Video-Audio media. Perioperative care. Myocardial revascularization.

RESUMO: Objetivo: Analisar a implementação das orientações de enfermagem aos pacientes pré-operatórios de cirurgia de revascularização do miocárdio em meio digital. **Método:** Estudo de intervenção realizado em hospital de Porto Alegre, Rio Grande do Sul, utilizando método gerencial de processos, que tem como características: planejar, executar, verificar e avaliar. De agosto a setembro de 2015, os pacientes receberam orientações pré-cirúrgicas por meio de um tablet. **Resultados:** Após orientações fornecidas, pacientes e enfermeiros avaliaram o uso da estratégia. Os dados foram analisados por estatística descritiva. Foram incluídos 27 pacientes, com idade média de $63,14 \pm 10,87$ anos. Todos afirmaram ter aprendido mais a respeito da cirurgia e sobre o seu preparo. Também foram inseridas quatro enfermeiras, e todas afirmaram que a utilização do recurso audiovisual padronizou as informações transmitidas aos pacientes. **Conclusão:** A utilização do tablet favoreceu o entendimento dos pacientes pré-cirúrgicos de cirurgia de revascularização do miocárdio e padronizou as orientações pré-operatórias de enfermagem.

Palavras-chave: Cuidados de enfermagem. Mídia audiovisual. Assistência perioperatória. Revascularização miocárdica.

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RESUMEN: **Objetivo:** Analizar la implementación de las orientaciones de enfermería a los pacientes pre-operatorios de cirugía de revascularización del miocardio en medio digital. **Método:** Estudio de intervención realizado en hospital de Porto Alegre, Rio Grande do Sul, utilizando método gerencial de procesos, que tiene como características: planificar, ejecutar, verificar y evaluar. De agosto a septiembre de 2015, los pacientes recibieron orientaciones pre-quirúrgicas por medio de un *tablet*. **Resultados:** Tras orientaciones suministradas, pacientes y enfermeros evaluaron el uso de la estrategia. Los datos fueron analizados por estadística descriptiva. Fueron incluidos 27 pacientes, con edad promedio de $63,14 \pm 10,87$ años. Todos afirmaron haber aprendido más al respecto de la cirugía y sobre su preparación. También fueron insertadas cuatro enfermeras, y todas afirmaron que la utilización del recurso audiovisual estandarizó las informaciones transmitidas a los pacientes. **Conclusión:** La utilización del *tablet* favoreció el entendimiento de los pacientes pre-quirúrgicos de cirugía de revascularización del miocardio y estandarizó las orientaciones pre-operatorias de enfermería.

Palabras clave: Atención de enfermeira. Medios audiovisuales. Atención perioperativa. Revascularización miocárdica.

INTRODUCTION

The technological and therapeutic advances in cardiology have been allowing the survival of individuals who are victims of the ischemic heart disease. Myocardial revascularization surgery (MRS) is an intervention that helps to alleviate symptoms, allows for the reestablishment of a patient's physical condition, increasing their survival and promoting a better quality of life for the individual. Considering that it is a complex procedure, it requires appropriate treatment in all of its operative phases. This type of surgery has repercussions in the life of the patient, because it demands that the patient adapts to a new way of life as a result of which they have to face physical restrictions and make changes in their lifestyle.^{1,2}

Under these circumstances, the higher the level of understanding of the patient about the procedure which he or she will undergo, the lower the level of his or her anxiety will be for the surgical intervention and, thus, the better his or her recovery will be. In addition, the manner in which the patient handles the surgical experience may lead to complications that can negatively interfere in their recovery. This may intensify morbidity in the postoperative period.³ Additionally, since 2004, the National Sanitary Surveillance Agency (ANVISA) incorporated into its scope of action, the planned actions in the World Alliance for Patient Safety of the World Health Organization (WHO), of which Brazil is a member. The National Program of Patient Safety (PNSP), established in Brazil by MS Ordinance No. 529, of April 2013, advocates for the implantation of a culture of safety in health institutions, stimulating the participation of patients for their own safety.⁴

Thus, it is the responsibility of nurses to transmit the information to the surgical patient with respect to their health problem, their surgical intervention, and about the

manner in which they can actively contribute to their post-operative recovery.⁵ The orientation from nurses provided systematically enhances the knowledge of the patient with respect to their disease and concerning the essential procedures necessary for their recovery, in addition to qualifying and contributing toward the actions in all levels of health assistance, which collaborates with the work of the team.⁶

Diverse resources used in preoperative orientation, such as the use of images, audio and video, and visits to the surgical center or to the area where the patient will stay during the immediate postoperative period were observed.⁷

A study performed with the objective of verifying the effect of audiovisual resources in the preoperative orientation and about the knowledge of the patients undergoing cardiac surgery compared with the usual orientation from the nursing team, showed that patients who received audiovisual orientation by means of an explanatory video and a PowerPoint presentation were more prepared for the procedure that was going to be performed on them. In addition, the patients demonstrated more knowledge about the perioperative period, when compared with patients who received routine verbal guidance from the unit.⁸

With regard to the effectiveness of the audiovisual resources used in the preoperative orientation, evidenced in the cited study⁸, through which the patients had a better understanding of the process which they would be undergoing and, consequently through which they would be able to deal better with their anxieties and doubts, justifies the implementation of an intervention in service which includes the use of such resources. In this context, this study aimed at analyzing the implementation of the nursing orientation for the preoperative patients of MRS with a digital medium, using a management process method which has the following characteristics: plan, do, check, and act.⁹

METHODS

This is an intervention study in a hospital, performed in two inpatient medical-surgical units that assist patients through the Brazilian public health system (SUS) and through health supplement insurance, considered cardiology reference center in south of Brazil. The period of intervention was from August to September 2015.

The mentioned hospital develops teaching and research in cardiology and cardiovascular diseases of various levels, and as a teaching hospital, it offers curricular internships to other teaching institutions in the most diverse areas of health. This same institution was the location of the previous study⁸ that proved, by a randomized clinical trial, the effectiveness of the use of audiovisual resources in the preoperative orientation for patients who would be undergoing MRS.

The population of the study was composed of nurses and patients of two medical-surgical units of this hospital. The sample was chosen for convenience according to the period of the intervention.

Those who were included were preoperative hospitalized MRS patients in the two units during the period of the intervention, with an age over 18 years and presenting favorable cognitive and physical conditions for receiving orientation by audiovisual resource and this was followed by an evaluation.

Four nurses who work in these units were included. They give orientation to the patients in the MRS preoperative period and they accepted participating in the study.

The orientation about the perioperative MRS provided by the nurses from the institution are verbal and occur on the day before the surgery, prior to the beginning of the preoperative preparation. There is no checklist of information to be provided, only the preoperative preparation items that should contain due dates and should be verified and checked off by the nurse on duty when the patient is ready to be transferred to the surgical wing.

On the basis of the management method plan, do, check, act (PDCA), this study was developed. The stages are presented as follows:

1st stage: Plan

A first meeting with some of the nurses from the sectors involved was conducted with the support of the head of nursing services, to present the problem as well as the proposal for intervention. The information was presented in a PowerPoint, and elaborated by the researcher. It contained

some items such as a brief explanation about the surgery, the preparation of the patient for the surgery, and intraoperative and postoperative periods. A video containing images and animations with narration in Portuguese, in accessible language, explaining the surgical procedure, was presented. This video has a duration about 4 minutes, and belongs to the American company Nucleus Medical Media. It was acquired with a financial support from the Institutional Research Support Fund for prior study.⁸ The material was finalized to be presented in a second meeting of the nurses of the medical-surgical units, where the intervention was performed, so that they could familiarize themselves with the tablet and its content.

2nd Stage: Do

The patients were identified from a list of surgeries provided daily to the inpatient medical-surgical units, where the researcher showed up from Monday to Friday during the morning and performed the approach for the preoperative MRS patients at their bedside. Patients who were familiar with this type of device were able to handle it themselves. The participating nurses only accompanied the researcher in the implementation of the orientation.

3rd Stage: Check

After each orientation provided to the patients using the tablet, a questionnaire evaluating the use of this tool for the preoperative guidance of MRS was administered. To verify the applicability of this tool in guidance for surgical patients as a routine, a questionnaire was administered to the nurses who accompanied the researcher. The data obtained through this stage are described in the Results section.

4th Stage: Act

From the opinion of the patients and the nurses and some adjustments made to optimize the use of this strategy, considering the time and technique used by the nurses, the results were presented to the nursing service, which will then evaluate, with their team, the best moment to implement this tool as part of a routine assistance.

A descriptive study was performed and the data were transcribed into a table in Excel. The categorical variables were classified in absolute numbers (n) and percentages (%). The continuous variables were described as means and

standard deviation, in accordance with the characteristics of the data collected.

This study was approved by the Research Ethics Committee (REC) of the hospital with a CAAE 38680114.5.0000.5333 and under number 893.946, having followed the ethical recommendations set forth in the present resolution.

RESULTS

Of the researched sample of 27 patients, the majority of whom were of the masculine sex, the average age was 63.14 ± 10.87 years. Other data are demonstrated in Table 1. The sample totaled 27 patients.

Among the patients of the sample, 17 (62.96%) were hospitalized by SUS. The orientation by means of the tablet had an average duration of 25 minutes. Eighteen (66.67%) patients who were being guided were accompanied by relatives and of these relatives, 14 (77.78%) also wanted to watch the orientation instructions by means of the presentation and explanatory video. Fourteen (51.85%) patients did not need help from the researcher or nurse to maneuver the tablet or read the instructions; and 13 (48.15%) needed some type of help. Nevertheless, an important fact to be mentioned is that the patients were primarily elderly, so in the majority

Table 1. Socio-demographic characteristics of patients undergoing myocardial revascularization surgery (n=27). Porto Alegre, RS, Brazil, 2015.

Variable	n (%)
Sex	
Male	22 (81.48)
Female	5 (18.52)
Age range (years)	
30-39	1 (3.70)
40-49	3 (11.11)
50-59	5 (18.52)
60-69	9 (33.33)
70-79	9 (33.33)
Schooling	
Illiterate	1 (3.70)
Elementary school	15 (55.56)
High school	6 (22.22)
Higher education	5 (18.52)

of cases, the researcher had to maneuver the audiovisual device in order to pass through the slides on the screen. As was observed, many patients avoided holding onto the tablet, affirming that they did not know how to use it correctly or that it could fall, and then asked the researcher to hold. In one of the cases, a relative of the patient said that it was better to explain the orientation in words, because the patient would understand it better because of his/her low-level of education.

Figure 1 shows the opinions of the patients about the use of the tablet for the orientation on the surgery and the perioperative.

When asked about their opinion with respect to the presentation on PowerPoint, with the orientation of the MRS perioperative, 26 patients who responded, affirmed that they liked it.

The third question on the questionnaire sought to know the opinion of the patients about the explanatory video on MRS, and obtained a unanimous response from the 27 patients (100%) of having liked it.

The 25 patients who responded to the fourth question, affirmed that they learned more about the surgery and about its preparation, with the presentation and with the explanatory video.

Figure 2 presents the feelings checked off by the patients after receiving the instructions for the MRS by means of the tablet. In this question, the patients could check off any number of feelings that they wanted.

With regard to the doubts raised, a large part of the patients wanted to know if they would return to perform

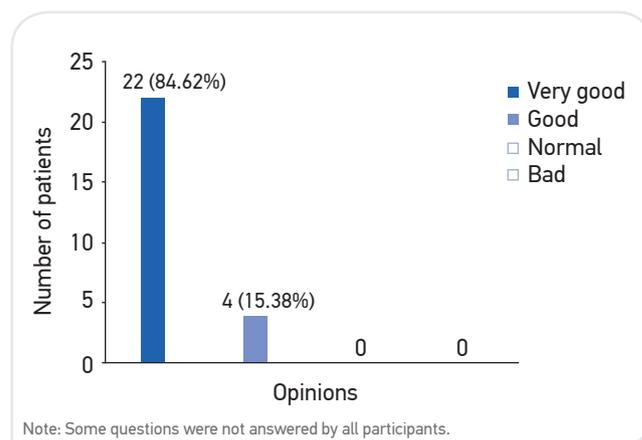


Figure 1. Patients' opinions (n = 26) about receiving the orientation through a tablet. Porto Alegre. RS. 2015.

the activities that they did before the surgical procedure. Other patients reported that they were able to clarify their doubts and understand some processes with the orientation provided – for example, one patient, upon seeing a slide of the presentation that illustrated the intubation, mentioned that they had a very different idea in their mind than what was being presented.

Despite the limitations and difficulties encountered, the bedside instructions were beneficial to the patients, optimism was evident in most of them, many said that everything would go well in surgery and they were confident. Most of the patients seemed to be calm during the use and handling of the tablet. They showed no visible reactions of anxiety or nervousness. They showed curiosity to see the orientation. They got up quickly or arranged themselves to better see what was contained in the device, and most of their companions had an interest in seeing the orientation as well.

Only two female patients demonstrated apparent nervousness, they stayed quiet upon seeing the orientation and showed a semblance of sadness. On the other hand, one patient commented that he was nervous before the orientation, thinking that he would be shown photos of the act of the surgery itself, but by the end of the presentation, he was quite calm.

The four nurses who participated in this study, all of them of the feminine sex, were of an average age of 28.75 ± 3.34 years, and had a minimum time since graduation of 3 years, and a maximum of 10 years. The shorter

employee tenure at the institution was eight months and the highest was three years.

Table 2 shows the questions given to the nurses and their respective responses about the use of the tablet for transmitting the orientation to the surgical patients.

With respect to the opinion of the nurses about the use of the tablet in the orientation of the patients undergoing MRS, two of them (50%) responded that the instructions contained in this device were fundamental for giving orientation to the patients and the other 2 (50%) affirmed that the information existing in the tablet helped to transmit the orientation to the patients. None of them responded that the material provided little or no support to transmit the orientation to the MRS patients.

When asked about the implementation of the resources in the routine of the unit in order to give orientation to the surgical patients, two nurses (50%) affirmed that the use of the tablet, in addition to standardizing the information transmitted to the patients, also reduced the time of the orientation; and two (50%) considered that the use of this device standardizes the information passed on and increases the time spent on giving the orientation to the patients.

In the question that sought to know whether the nurses would use the tablet while giving the orientation to the patients routinely, for those who responded that they would use it sometimes or never, they were asked to justify their responses. As such, two nurses who responded “sometimes” justified as follows:

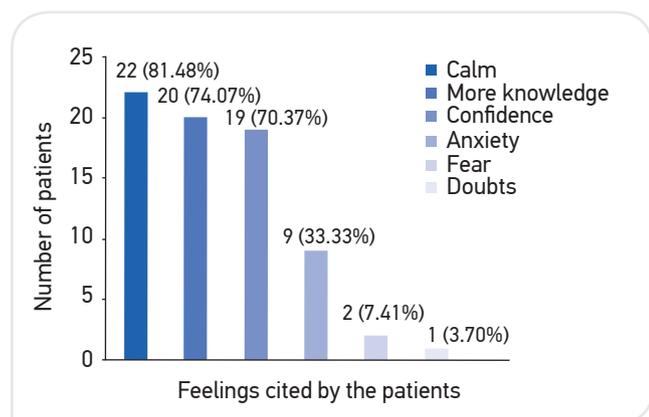


Figure 2. Feelings presented by the patients after receiving the orientation about the myocardial revascularization surgery through the tablet. Porto Alegre. RS. 2015.

Table 2. Questions about the use of a tablet in the orientation. Porto Alegre. RS. Brazil. 2015.

Questions	Answers n (%)
What is your opinion about handling the tablet?	
Very easy	3 (75)
Easy	1 (25)
What is your opinion about the content in the orientation?	
Very good	3 (75)
Good	1 (25)
What is your opinion about inserting the tool in your everyday routine?	
I would always use it	2 (50)
I would use it sometimes	2 (50)
Did the content contribute to improve the surgical patients comprehension?	
Yes	4 (100)

I would use it sometimes, because I do not have time. (E2)

Because of time, in some moments it is difficult because of the number of surgical patients there are. (E3)

At the end of the questionnaire destined for the nurses, there was an open space for suggestions, where all of the participating nurses left comments or suggestions, and are presented as follows:

The resource is adequate and provides clarity in the information. (E1)

Slides with an automatic presentation, so that the patient does not have to touch the screen. (E2)

Increase the size of the font as a way of highlighting the information and the reading of the patients. (E3)

Depending on the patient, ideally only the video would be used. (E4)

In general, the utilization of the audiovisual resource to give orientation to the MRS patients was well accepted by the nurses who participated in this study. Their approval for the proposal of this implementation was observed; however, they clearly had little time available for it.

DISCUSSION

On the basis of the data of the previous study performed in the institution, which demonstrated significant results for the perioperative orientation given by nurses with the use of a digital medium, when compared with the normal orientation, this study aimed at analyzing the implementation of this orientation for the preoperative MRS patients by means of a tablet and evaluate the feasibility of this intervention. Even though some limitations were found with respect to the incorporation of this new tool as a routine, the evaluation on behalf of the nurses was positive.

In relation to the profile of surgical patients, the results found in this study were found to be similar to those

demonstrated in the literature,^{10,11} which characterize the patients in preoperative cardiac surgery to be mostly male, aged 60 years or older and having a low level of education.

More and more, patients undergoing MRS are elderly and have diverse associated comorbidities such as, for example, systemic arterial hypertension and diabetes. When they are hospitalized for a large surgical procedure, the presence of close relatives is necessary. The majority of patients included in this study were with their companions or relatives, and a large part demonstrated interest in receiving the orientation together with the patient. As it was presented in the study, a majority of the families lived through the sickness with the patient, and gave their opinions many times about the treatment. Thus, both the patient and their relatives should receive clear and concise instructions. The relatives should act as part of the team, giving guidance and supporting the hospitalized person.¹²

With regard to the sentiments manifested by the patients after receiving the instructions, tranquility, anxiety, and fear were mentioned, which agrees with what was stated in a study concerning the ambiguity of feelings that the patients experience in the preoperative cardiac surgery. The subjects of this study verbalized contradictorily, tranquility and anguish, fear, and anxiety in their testimonies.¹³ In this context, it is highlighted that the nursing professional should give instructions to the identified patients about their necessities, with the intention of avoiding increasing their anxiety with a large quantity of information.

The nursing diagnostics of Anxiety and Fear are common in the preoperative period in patients undergoing cardiac surgery.¹⁴ In a low or high scale, anxiety is present in most patients in immediate preoperative, which is expected with regard to the magnitude of the procedure.¹⁵ Therefore, the use of the audiovisual resources during the approach of the patient in perioperative can enhance their knowledge on the procedure and the recovery, in addition to clarifying doubts, which calms the patients down.

The reduced number of nurses who participated in the intervention is a limiting aspect of the study. One of the factors that were attributed for a low participation in the intervention, was a lack of time due to the assistance and managerial demands in the units of hospitalization. Nevertheless, the activities of giving orientation and education to the patient are considered essential for the nurse. Those who participated, characterize themselves as young women. Similar data referencing the profile of nurses of

inpatients units are found in Brazilian literature studies.^{16,17} These studies showed that among the principal characteristics, the nurses were in the age group of 32–37 years, and the large majority of them were of female.

When asked about the use of the tablet in the daily routine as a tool to strengthen the orientation, half of the nurses said that the resource would not be used every time the orientation was given, because there would not be enough time in relation to the number of surgical patients. As stated in the literature, many times the nurses do not give an orientation to preoperative patients, due to the difficulty that the nurses face in communicating to them, such as, for example, because of their administrative and care assistance work. This leads to the orientation not being given at all due to lack of time, shortage of human resources, excess of routines in the units, lack of planning, and lack of prioritizing the visit among other situations¹³.

In general, the nurses' routine assistance requires many tasks that must be completed in a short amount of time and with reduced human resources. Under these circumstances, strategies that bring quality to the care, and at the same time allow for the agility of the processes are necessary. One study, with the use of an audiovisual resource for transplant patients, showed a good cost–benefit relationship and a decrease in the time needed to inform the patients about the surgical procedure that they would undergo.¹⁸

Nevertheless, the nurses mentioned that the use of the tablet aided in the transmission of the orientation to the patients by standardizing the information. The use of audiovisual resources is a means of complementing their work and seeks to facilitate the comprehension of information in addition to standardizing and aiding the work of the team.¹⁸

The nurses agreed that the orientation with audiovisual resources was important for improving the comprehension of the surgical patients with respect to the procedure that they would undergo. A study that used an explanatory video about the cardiac catheterization examination directed toward the patients who were to undergo the examination, showed a better understanding among the patients after watching the video.⁶ It is believed that the more the patient has knowledge about their future possibilities, the better he or she will adapt to the hospitalization, and consequently, will have a better recovery.^{12,13}

The nurses who mentioned lack of time and many tasks to perform demonstrated some resistance to participate in the study. Change processes are known to cause uncertainties

and to affect individuals psychologically, provoking fear and, as a result, generating resistance, because everything that is outside their comfort zone and unknown, causes a natural tendency for resistance.¹⁹

There are numerous strategies indicated to handle this type of situation, and one among them is communication, because it involves meetings, discussions, presentations to groups and essays that help the person understand the logic and the necessity of the change.²⁰

Among the limitations of the study, there was no meeting with a larger number of nurses to discuss the proposal of the intervention. Regarding the economic situation of the government, who is responsible for transferring SUS resources to public health institutions, many procedures and hospitalizations were suspended because of the shortage of financial resources, which also reflected the availability of human resources. Additionally, the fact that researcher herself applied the evaluation questionnaire to the patient, directly after the orientation, can be characterized as a bias.

With the intent of making this audiovisual resource available in these inpatient units, on the basis of what was mentioned by the patients and the nurses, adjustments were made to improve the use of this strategy, considering the time and technique used by the nurse. In order to complete the fourth stage of the PDCA cycle, the head of nursing service will decide with their team, the most appropriate moment for the implementation of this tool in routine assistance. Additionally, financial planning is necessary to pay for the purchase of the tablets.

FINAL CONSIDERATIONS

The importance of the orientation provided to patients who would undergo surgical interventions, is noteworthy. New techniques are used in patient care, which aim at improving the quality of information provided to them. In the face of the diverse evidence, which notes the effectiveness of the use of audiovisual resources in increasing knowledge and reducing anxiety in preoperative patients, it becomes important for new instruction strategies to be implemented in hospital institutions.

The use of these technologies is intended to complement the work of the professionals, who would provide the orientation, but also to insure that there is quality in giving the orientation. Institutions also need to have sufficient staff to

work, as the workload is ever more present in Brazilian hospitals, affecting the physical and mental well-being of nurses, which directly influences the care provided to the patient.

Thus, the strategy of audiovisual instructions using a tablet showed to be feasible in the scenario studied. However, to

adjust the size of the nursing staff is necessary (in this case, the nurses), as well as their involvement in the implementation of a new routine in the care given to the patient, and it is recommended (among the care actions) the clear orientations for patients and their families.

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