

AUDIOVISUAL AIDS IN PREOPERATIVE CARDIAC SURGERY EDUCATION: A SCOPING REVIEW

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ABSTRACT

Objective: to map, in the scientific literature, the use of audiovisual aids as an educational strategy during the preoperative period of cardiac surgery.

Method: a scoping review following the Joanna Briggs Institute methodology. Two independent reviewers analyzed the studies, applying the exclusion and inclusion criteria in the search by the audiovisual aid, cardiac surgery and preoperative care variables, including those that answered the research question.

Results: final sample of nine studies, where the most used audiovisual aids were videos followed by apps, used because they are easily accessible and democratic. Such tools in health education optimize the team's time and promote patient education, improving the postoperative period, in addition to reducing risks and improving adherence to the treatment.

Conclusion: it was possible to map the audiovisual aids used in the health education of surgical patients, such as videos, apps and information systems. These tools facilitate Nursing guidelines in the preoperative period of cardiac surgeries, increasing the patient's knowledge about the surgery.

DESCRIPTORS: Thoracic surgery. Educational technology. Audiovisual aids. Cardiac surgical procedures. Preoperative Care.

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RECURSO AUDIOVISUAL NA EDUCAÇÃO EM PRÉ-OPERATÓRIO DE CIRURGIA CARDÍACA: REVISÃO DE ESCOPO

RESUMO

Objetivo: mapear na literatura científica a utilização de recurso audiovisual como estratégia educativa durante o pré-operatório de cirurgia cardíaca.

Método: revisão de escopo seguindo a metodologia do Instituto Joanna Briggs. Dois revisores independentes analisaram os estudos, aplicando os critérios de exclusão e inclusão na busca pelas variáveis recurso audiovisual, cirurgia cardíaca e cuidados pré-operatórios, tendo sido incluídos aqueles que respondiam à questão de pesquisa.

Resultados: amostra final de nove estudos, nos quais os recursos audiovisuais mais utilizados foram os vídeos seguidos de aplicativos, usados por serem de fácil acesso e democráticos. Essas ferramentas na educação em saúde otimizam o tempo da equipe e promovem a educação do paciente, melhorando o pós-operatório. Além de reduzir riscos e melhorar a adesão ao tratamento.

Conclusão: foi possível mapear os recursos audiovisuais utilizados na educação em saúde dos pacientes cirúrgicos, como vídeos, aplicativos e sistemas de informações. Essas ferramentas são facilitadoras das orientações de enfermagem no pré-operatório de cirurgia cardíaca, aumentando o conhecimento do paciente sobre a cirurgia.

DESCRITORES: Cirurgia torácica. Tecnologia educacional. Recursos audiovisuais. Procedimentos cirúrgicos cardíacos. Cuidados pré-operatórios.

RECURSO AUDIOVISUAL EN LA EDUCACIÓN DURANTE EL PERÍODO PREOPERATORIO DE CIRUGÍAS CARDÍACAS: REVISIÓN DE ALCANCE

RESUMEN

Objetivo: mapear en la literatura científica el uso de recursos audiovisuales como estrategia educativa durante el período preoperatorio de cirugías cardíacas.

Método: revisión de alcance que siguió la metodología del Instituto Joanna Briggs. Dos revisores independientes analizaron los estados, aplicando los criterios de exclusión e inclusión en la búsqueda por medio de las siguientes variables: recurso audiovisual, cirugía cardíaca y cuidados preoperatorios, incluyéndose los que respondían a la pregunta de la investigación.

Resultados: la muestra final estuvo compuesta por nueve estudios, en los que los recursos audiovisuales más utilizados fueron los vídeos seguidos de aplicaciones, usados por ser de fácil acceso y democráticos. Estas herramientas de educación en salud optimizan el tiempo del equipo y promueven la educación del paciente, mejorando así el período postoperatorio, además de reducir riesgos y mejorar la adhesión al tratamiento.

Conclusión: fue posible mapear los recursos audiovisuales utilizados en la educación en salud de los pacientes quirúrgicos, como ser vídeos, aplicaciones y sistemas de información. Estas herramientas facilitan las pautas orientadoras de la Enfermería en el período preoperatorio de cirugías cardíacas, incrementando así el conocimiento de los pacientes sobre las cirugías.

DESCRIPTORES: Cirugía torácica. Tecnología educativa. Recursos audiovisuales. Procedimientos quirúrgicos cardíacos. Cuidados preoperatorios.

INTRODUCTION

Among the surgeries considered complex, associated with high levels of anxiety, depression and comorbidities, cardiac surgery stands out worldwide. In the preoperative period, the patient becomes vulnerable to psychological factors, prone to fear, distress and emotional and psychological imbalance, in addition to hemodynamic instability before and after the surgery¹⁻².

Corroborating this scenario, there is the psychological and emotional burden generated by the pandemic caused by the new coronavirus. COVID-19 installed in the general population a context of anxiety, fear and insecurity, especially in those patients living with some comorbidity, providing the same feelings of uncertainty about their health status³.

Given the above, a study carried out in Wuhan, China, associated the incidence of patients hospitalized due to COVID-19 with an increase in the number of cases of acute cardiac injury, as well as with an increase in the mortality of patients with previous heart diseases, when compared to those who did not present such comorbidities, with the possibility of reaching 69.4% of the death cases⁴. All this can culminate in the exacerbation of diseases, and lack of adequate information can contribute to deterioration of these patients' condition.

A number of studies show that guidelines with inadequate language can compromise the patients' prognoses and increase anxiety in the preoperative period^{2,5}. In contrast, guidance and education provided to the patient before the surgery show a significant reduction in the anxiety levels and provide emotional and physical stability in the preoperative period¹⁻².

In addition, proper use of instruments that reinforce education and increase the patient's knowledge allows changing the clinical condition. Educational actions aim at providing knowledge to the patient, family members and caregivers about a specific health issue, providing space to achieve goals in relation to their care⁵.

The preoperative guidelines, one of the Nursing care measures, provide reliable information and, when learned by the patients, are predictors of a good prognoses and of a reduction in morbidity and mortality. From this perspective, there are educational technology tools that can complement education in health, reinforcing the verbal information given by the professionals⁶.

Among the several educational technologies, audiovisual aids assist education because they are a set of technologies that reproduce images and sounds, making the content conveyed interesting, helping to understand phenomena and exemplifying reality. These aids have been used for some time in education, complementing teaching⁷. In health interventions, these aids can contribute better practices to the education in health offered by nurses, contributing to assistance in different ways⁸.

In accordance with the above, establishing guidance as a care standard for surgical patients provides comprehensive care that reduces risks and complications during the surgery. Thus, audiovisual aids can help by contributing clear and objective language, which assists in understanding the surgical process².

Given such scenario, this study is justified by the need to seek and gather the main scientific evidence about the use of audiovisual aids, with a focus on cardiac surgery. Thus, it aims at assisting in evidence-based decision-making during the Nursing professionals' practice, as well as at encouraging new studies that will foster research in the area.

Thus, the objective of this study is to map, in the scientific literature, the use of audiovisual aids as an educational strategy during the preoperative period of cardiac surgeries.

METHOD

This is a scoping review, which has as its study design the purpose of identifying and mapping the main definitions and scientific evidence on a given area⁹. This research design was chosen because it offers a “scope” of consistent discussion about education in the preoperative period, using audiovisual aids.

This study was developed through the five stages recommended in the Joanna Briggs Institute (JBI) protocol: (1) definition of the research question; (2) identification of relevant studies; (3) selection and inclusion of studies; (4) data organization; and (5) compilation, synthesis and reporting of the results⁹. In order to ensure the integrity of this study and methodological rigor, the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist was used for review and writing;¹⁰ and registration was performed in the Open Science Framework (OSF) (<https://osf.io/eckux/>).

At a first moment, a survey was conducted in the scientific bibliography during the second semester of 2020 and in March 2021, so as to recognize reviews with a similar research scope. The following platforms were researched: International Prospective Register of Systematic Reviews (PROSPERO), Open Science Framework (OSF), The Cochrane Library, JBI Clinical Online Network of Evidence for Care and Therapeutics (CONNECT+) and the Database of Abstracts of Reviews of Effects (DARE). The results evidenced nonexistence of publications with a similar objective to the one of this review.

In order to establish the research question, the following mnemonic was used: PCC (Population, Concept and Context), where: Population: patients belonging to any age group subjected to cardiac surgeries (myocardial revascularization, valve replacement or other cardiac surgical procedures); Concept: using the audiovisual aid as an educational strategy during the preoperative period; and Context: preoperative period of cardiac surgeries. Therefore, the following question was obtained: how is the use of the audiovisual aid as an educational strategy implemented during the preoperative period of cardiac surgeries? In addition to that, there are other questions, such as the following: whether there is any consensus in the literature about the use of these aids or an existing validation for their use applied to this specific population.

For the search and identification of relevant studies, the following descriptors indexed in MeSH were used: “Educational technology”, “Preoperative period”, “Preoperative care”, “Cardiac Surgery”, “Patient education”, “Audiovisual Aids” and “Cardiac Surgical Procedures”, with application of the Boolean operators AND and OR in a restrictive and additive manner, respectively, as shown in Chart 1.

Chart 1 – Descriptors and keywords used in the search. Natal, RN, Brazil, 2021.

PCC	MeSH		Keywords
Population	Cardiac Surgical Procedures	OR	<i>Cirurgia cardíaca</i>
	AND		
Concept	Audiovisual Aids OR Educational technology OR Patient education		
	AND		
Context	Preoperative period OR Preoperative care	OR	<i>Cuidados pré-operatórios</i>

The search for records in the data sources was carried out in the Journals Portal of *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES)*, through remote access to the content of *Comunidade Acadêmica Federada (CAFe)*, a resource funded by *Universidade Federal do Rio Grande do Norte (UFRN)*; where the data sources were the following: Cumulative Index to Nursing and Allied Health Literature (CINAHL), Science Direct, *Literatura Latino-Americana em Ciências da Saúde (LILACS)*, Scientific Electronic Library Online (SCIELO), Scopus, Web of Science, PubMed Central, British Library EthOS – E-theses Online Service and DART – Europe E-theses Portal, with the syntaxes used shown in Chart 2.

Chart 2 – Search syntaxes in the data sources. Natal, RN, Brazil, 2021.

Data sources	Syntax
PubMed	(Cardiac Surgical Procedures OR Cardiac surgery) AND (Audiovisual Aids OR Educational technology) AND (Preoperative period OR Preoperative care)
§CINAHL	TX (Educational technology OR Audiovisual Aids OR Patient education) AND TX (Cardiac Surgical Procedures OR Cardiac Surgery) AND TX (Preoperative period OR preoperative care)
Science Direct	(Educational technology OR Patient education) AND (Cardiac Surgical Procedures OR Cardiac Surgery) AND (Preoperative period OR preoperative care) AND (Audiovisual Aids)
*LILACS	Educational technology OR Patient education [Words] and Cardiac Surgical Procedures OR Cardiac Surgery [Words] and Preoperative period OR preoperative care AND Audiovisual Aids [Words]
SCIELO	(*"Educational technology" OR "Patient education") AND ("Cardiac Surgical Procedures" OR "Cardiac Surgery" OR "Myocardial revascularization") AND ("Preoperative period" OR "preoperative care" AND "Audiovisual Aids")
†SCOPUS	TITLE-ABS-KEY (cardiac AND surgery OR cardiac AND surgical AND procedures) AND TITLE-ABS-KEY (audiovisual AND aids OR educational AND technology OR patient AND education) AND TITLE-ABS-KEY (preoperative AND period OR preoperative AND care)
Web of Science	TS=(Educational technology OR Patient education OR Audiovisual Aids) AND TS=(Cardiac Surgical Procedures OR Cardiac Surgery) AND TS=(Preoperative period OR Preoperative Care)
‡EthOS	(Educational technology OR Patient education OR Audiovisual aids) AND (Cardiac Surgical Procedures OR Cardiac Surgery) AND (Preoperative period OR preoperative care)
‘DART	("Cardiac Surgical Procedures" OR "Cardiac Surgery") AND ("Educational technology" OR "Patient education" OR "Audiovisual aids") AND ("Preoperative period" OR "preoperative care")

*LILACS: *Literatura Latino-Americana e do Caribe em Ciências da Saúde*; †Scopus: Elsevier's SCOPUS; §CINAHL: Cumulative Index of Nursing and Allied Health; ||SciELO: Scientific Electronic Library Online; ‡EthOS: British Library EthOS – E-theses Online Service; ‘DART: *Europe E-theses Portal*.

Studies available in full were included, with different methodological designs, which presented the education of patients in the preoperative period of cardiac surgeries as the main theme and with populations belonging to any age group, in addition to dissertations, theses and guidelines from specialists' associations, without time frame and published in any language.

And as exclusion criterion: records that did not answer the research question and that did not have any cardiac surgical procedure or education in the preoperative period as research object. In addition, the papers classified as with level of evidence 5 by the Oxford Centre for Evidence-based Medicine were removed from the selection, for presenting low level of evidence and degree of recommendation; therefore, not being relevant for this study¹¹.

The methodological process for selection and inclusion of the studies initially consisted in identifying publications in the sources using the inclusion and exclusion criteria. Screening and inclusion of the studies was performed by two independent evaluators, simultaneously and using different electronic devices, in addition to full reading of the studies selected. The differences found between the reviewers during the selection process were mediated through a third reviewer. It is also noteworthy that a reverse search was carried out in the references of the articles selected, in order to identify possible relevant studies to compose the results.

For their organization and data extraction, the authors created a spreadsheet in *Microsoft Excel* with information such as: author and year of the study, country of publication, method design, intervention used and conclusion. In relation to the classification of the studies regarding the level of evidence and degree of recommendation, the categorization protocolized by the Oxford Centre for Evidence-based Medicine was used¹¹, where it is established that the smaller the number determined for a study, the greater its level of evidence.

Thus, for synthesis and presentation, charts were prepared and discussed in a narrative way, in addition to statistics with absolute and relative frequencies of the findings.

As it deals with data in the public domain, this review does not require approval by any ethics committee.

RESULTS

The initial search yielded 1,835 studies; of these, 1,381 were found in PubMed, 232 in CINAHL, 112 in Web of Science, 106 in Science Direct, three in SCOPUS, one in LILACS, and 16 records were identified from the reverse search. No results were found in the other data sources. After applying the exclusion and inclusion criteria and later reading of the titles and abstracts, 62 studies were selected for full reading.

Subsequently, removing the duplicates from the data sources, a total of 22 studies remained to be read in full. Of these, 13 studies were excluded for not answering the study question or for not being related to the preoperative period of cardiac surgeries, and nine were selected to comprise the sample because they answered the guiding question and suited the objective of this research, as shown in Figure 1.

Among the nine records included in the sample, most of the studies were carried out in the United States of America (USA), with three (40%) publications, followed by Denmark with two (20%) publications; and, close behind, with one (10%) publication each, the following countries: Australia, Brazil, China and the United Kingdom.

Even with no target audience restriction, most of the studies included have an adult population with a mean age of 60 years old, and seven studies (78%) do not have any target population, as is the case of one (10%) of the findings of this research, as it is a literature review that did not specify the age group of its sample.

It can be seen that half of the sample, five (50%) studies, conducted their interventions during the immediate preoperative period, in a hospital environment. The remaining studies, five (50%), were listed as preoperative, but did not specify the location.

With regard to the year of publication, there was dispersion of studies, where 2020, 2016 and 2002 had two (20%) publications each. Immediately after those years, 2015, 2014 and 2004 had one (10%) publication each. Regarding the level of evidence, four (40%) of the studies were level 1B, two (20%) obtained level 2A, and the levels of evidence 2B, 3A and 4 were the classifications for one study (10%) in each level. In relation to the degree of recommendation of the studies included, four (44.5%) had degree A, another four (44.5%) were degree B and one (11%) study had degree C of recommendation, as shown in Chart 3.

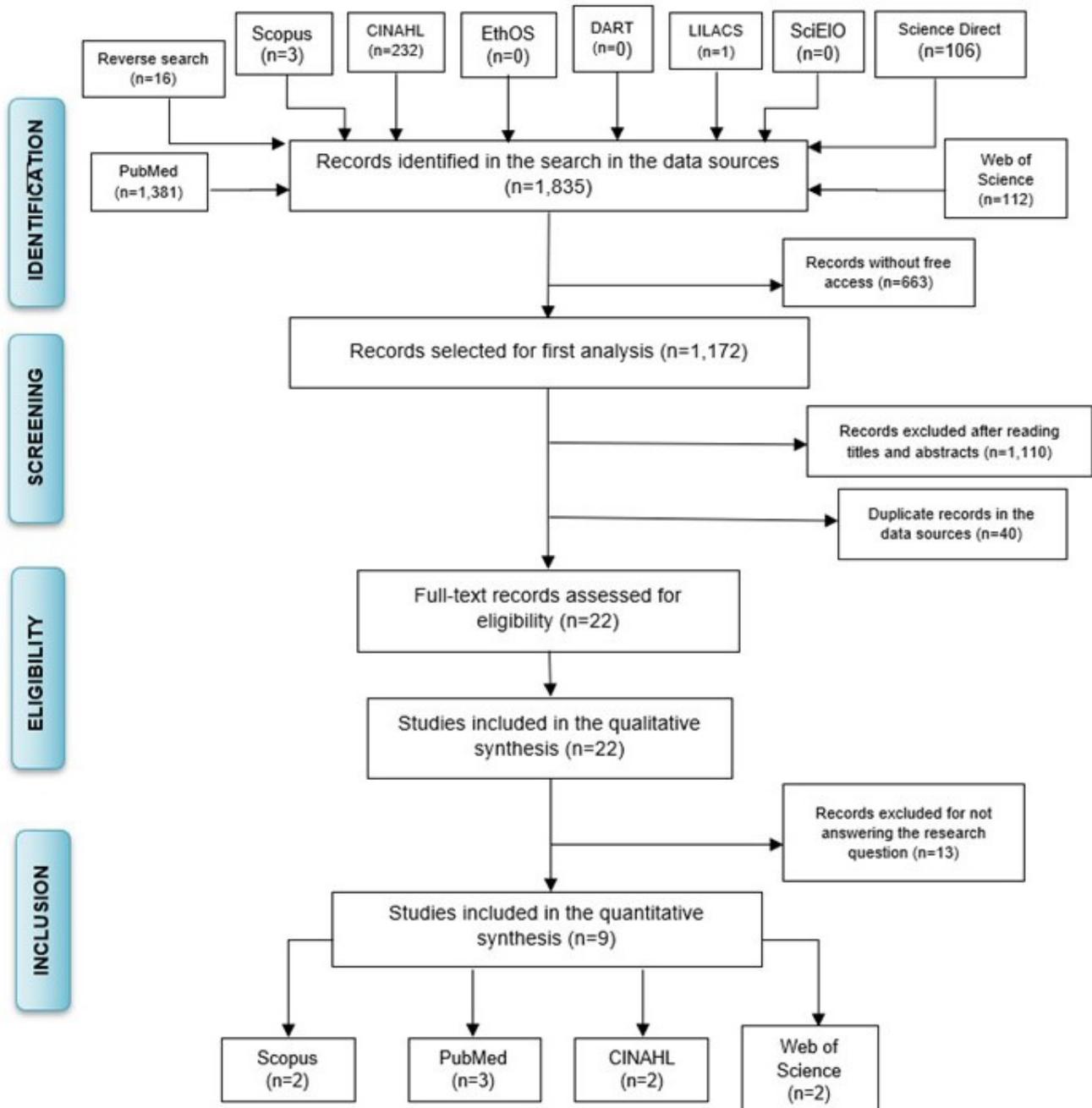


Figure 1 – Flow diagram adapted from PRISMA-ScR showing the search used to select the results. Natal, RN, Brazil, 2021.

Chart 4 summarizes the results collected, according to identification of the studies, type of audiovisual aid used and main results from the application of the audiovisual aids.

There was predominance of choice for the video tool, with five studies (55%), as an audiovisual aid for the interventions in health education of patients in the preoperative period of cardiac surgeries, followed by the use of apps and systems, two studies (20%), that offer education in health, while the other interventions, such as teleconsultation and simulation, were mentioned in one (10%) study each.

Chart 3 – Characterization of the publications according to year of publication, country of origin, data source, study type and sample, level of evidence and degree of recommendation of the studies included in the scoping review. Natal/RN, Brazil, 2021. (N=9)

ID* – Author (Year)	Country / Data sources	Type of study / Study sample	Level of evidence / Degree of recommendation
E1 – Roth-Isigkeit <i>et al.</i> (2002) ¹²	Denmark / 2002 / Scopus	Randomized Clinical Trial / 101 patients	1B/A
E2 – Dathatri <i>et al.</i> (2014) ¹³	USA / 2014 / Scopus	Randomized Clinical Trial / 108 patients	1B/A
E3 – Ajibade <i>et al.</i> (2020) ¹⁴	United Kingdom / 2020 / PubMed	Systematic review / 35 studies	2A/B
E4 – Waller <i>et al.</i> (2015) ¹⁵	Australia / 2015 / Pubmed	Descriptive study	4 C
E5 – Ajibade <i>et al.</i> (2020) ¹⁶	Denmark / 2020 / Pubmed	Systematic review / 11 studies	2A/B
E6 – Lewis <i>et al.</i> (2002) ¹⁷	USA / 2002 / Pubmed	Experimental study / 60 patients	2B/B
E7 – Nguyen <i>et al.</i> (2004) ¹⁸	USA / 2004 / Pubmed	Integrative review / 5 studies	3A/B
E8 – Oliveira <i>et al.</i> (2016) ¹⁹	Brazil / 2016 / Web of Science	Randomized Clinical Trial / 90 patients	1B/A
E9 – Lai <i>et al.</i> (2016) ²⁰	China / 2016 / Web of Science	Randomized Clinical Trial / 100 patients	1B/A

*ID=Identification of the article.

Chart 4 – Summary of the results according to identification of the studies, type of audiovisual aid and main results. Natal, RN, Brazil, 2021.

ID*	Type of audiovisual aid	Main results
E1 ¹² , E2 ¹³ , E6 ¹⁷ , E8 ¹⁹ , E9 ²⁰	Video	<ul style="list-style-type: none"> – Better patient preparation for surgery. – Improved self-care and participation of the patients in their care process. – Reduction in anxiety. – Increased knowledge. – Reduces the risks of complications. – Fewer postoperative complications. – Greater patient satisfaction.
E4 ¹⁵ , E7 ¹⁸	Apps / Information Systems	<ul style="list-style-type: none"> – Easier to apply. – Improves patient's knowledge. – Reduction in anxiety and stress. – Improved communication by the health service. – Greater adherence.
E3 ¹⁴	Internet / Teleconsultations	<ul style="list-style-type: none"> – More accessible. – Platform for evaluation and patient-professional contact. – Better interaction. – Greater understanding.
E5 ¹⁶	Simulation	<ul style="list-style-type: none"> – Optimization of the surgeries. – Reduces mortality and improves patient's prognosis. – Specialized care for each person. – Lower hospital costs.

*ID=Identification of the article

DISCUSSION

This study carried out the mapping of audiovisual aids used as education in health tools during the preoperative period of cardiac surgeries. As this is a specific surgical area, there were few interventions using audiovisual aids in the preoperative period; most of the studies show interventions in the postoperative period; which is reflected in the number of manuscripts included in this research. However, even with a restricted sample, the level of evidence and degree of recommendation of these studies are considered high, showing an interesting methodological rigor to be analyzed.

In this study, it was noticed that the mapping of these aids can influence new research studies on such tools. Although no time delimitation has been established, it is noted that the articles found were published between 2002 and 2020, which reinforces the topicality of the subject matter in question.

Even though the use of audiovisual aids has already appeared in older studies, such as in the 1990s, there are few indications of these aids in the preoperative period of the population that will undergo cardiac surgeries¹⁷. However, the significant diversity of places of publication shows that this subject matter is important for the entire scientific community.

In addition to that, the population aged over 60 years old in the samples of the studies (78%) corroborates epidemiological surveys on the predominance of the profile of this population subjected to cardiac surgical procedures, which allows inferring that this is a collective sensitized by the various associated comorbidities and prone to interventions that may assist during the surgical period²¹⁻²². In addition, this knowledge about the profile of the population contributes to devising more effective educational strategies focused on the patient's weaknesses.

Given the environment where that population is before the surgery, the findings show that 50% is in a hospital environment. This is due to the fact that this population has chronic conditions associated with some cardiovascular disease, which increases the risk of mortality; therefore, the preoperative period imposes risks and greater frailty on the patient²³⁻²⁴. Thus, strategies such as education in health for the patient in a cardiac preoperative period are important, as shown by studies that provide diverse evidence on the reduction of risks after providing education to the patients with tools that help to understand the cardiac surgical procedure^{19,24}.

It is noted that the most used audiovisual aid was the video tool, as it provides standardized language that is easy to execute and interpret, followed by apps and use of the Internet to provide consultations and information systems^{2-15,20}. However, it is important to know that all studies agree that the choice of the resource must take into account the profile of the patients to be approached and their schooling level. The choice for the strategy should be focused on the chance of changing misbehaviors and adding new conceptions⁶.

In this research, video was well related to the role of developing a democratic and easily accessible tool^{12-13,17,19-20}. Clinical trials show the effectiveness of this tool for knowledge retention in the preoperative period of cardiac surgeries, as it reinforces reality in an uncomplicated way for the patient^{12,19-20}.

With regard to the topics addressed in the audiovisual aids, they were related to explaining and understanding the perioperative process, in order to reduce anxiety and fear of the unknown^{17,20}. They are the patient's surgical preparation, guidelines on the operating room, surgical procedure, devices used, recovery, postoperative period, and familiarization with the intensive care unit and the team involved in this process^{15,17,19}.

At this point, the fusion of several pieces of knowledge centered on education in health for the patient stands out, as well as the important role played by Nursing in their preoperative guidelines. Thus, education of cardiac surgical patients becomes a continuous process of knowledge exchange between the patient, the family and the professional. It is interesting to show that many of the interventions

in health education are concerned with the leading role of Nursing. A number of studies evidence how Nursing can be the protagonist of these tools and provide self-care to the patient, in addition to understanding the whole, as the manager of the care provided to the patient²²⁻²⁶.

Furthermore, although there is a focus on the Nursing professional to guide the preoperative period of cardiac surgeries, some studies conclude that it is necessary to unite the multidisciplinary team, the patient and the family; in order to offer care that is fully centered on the individuals' demands, making them the very protagonists of their care¹⁶⁻¹⁸.

This self-care is reinforced in a study that has already been carried out¹⁷, analyzing the audiovisual aid from the perspective of the self-efficacy theory. The author reinforces that the improvement in the patients' knowledge and teaching in health in the preoperative period allows for self-care and empowerment in their treatment.

In addition to patient-oriented education in health, another point mapped was the use of these audiovisual aids in the teaching of health professionals during the patient's preoperative period for cardiac surgeries. The use of simulators to assess the surgery that the patient will undergo is an innovation in medical teaching during the COVID-19 pandemic. With the cancellation of surgeries and the restrictions imposed by the virus, the physicians had to adapt to a new reality where there is little contact with the surgical patient. In this way, simulation helps to customize the surgery for each patient, evaluating anatomy, surgical techniques and reducing the risk of intraoperative errors in a remote manner¹⁶.

During the SARS-CoV-2 virus pandemic, another change was also evident in the consultations between patients and health professionals. With social isolation, the Internet and Telemedicine gained strength, being an audiovisual aid that brings the patient closer to the health professional and can provide education in health even at a distance. Reviews are being conducted in order to show promising results in the patient's preoperative period, reinforcing the fact that this virtual contact does not nullify physical evaluations and face-to-face contacts with the patient. But it generates possibilities that Nursing itself can use as preoperative guidance tools^{14,27}.

Also providing an assessment centered on the individual, there are health system apps aimed at surgical guidelines. The *eHealth* apps are information systems that can increase the patients' knowledge by providing written and audiovisual material for better understanding¹⁵.

Online apps generate diverse information directly from specialists and can create a care network through education in health, in addition to offering universal access. This social support generated by the Internet increases adherence to the treatment and reduces the patient's negative feelings before the surgery¹⁸.

In addition, these guidelines are important in the preoperative care of cardiac patients, as lack of knowledge increases anxiety and stress, in addition to greater risk for postoperative complications and morbidity and mortality in this population^{15,18-20}. The findings of this research elucidate the benefit of using the audiovisual aid to the detriment of standard education in health (verbal guidelines)^{16,19}.

Finally, audiovisual aids diversify preoperative cardiac care, enabling new approaches and experiences with the patient. They also contribute benefits for patient safety, reducing preoperative anxiety^{12,19-20} and also reduce postoperative complications, addressing performance of the cardiac surgery, resulting in shorter hospitalization times and lower hospital costs¹⁶⁻¹⁷.

From the diverse information provided in this scoping review, it is possible to apply new studies with audiovisual aids that aim at confronting or reinforcing the use of these tools in surgical patients, correlating use of the technologies with care and education in health. So that new research studies on this subject matter are devised, becoming the support for new impactful scientific evidence that will benefit society.

Given all the above, a limitation of the review is that, even without a time limit, it is remarkable that the fact that this study was carried out only with open access literature may have reduced the sample size. This scoping review focused only on cardiac surgeries, which drastically reduced the sample population. Despite these limitations, this review does have strengths, such as the use of the methodological rigor required by the JBI and the mapping of the benefits of using the audiovisual aid.

CONCLUSION

This scoping review allowed mapping that video is the most used audiovisual aid in health education in the preoperative period of cardiac surgeries, followed by the elaboration of apps that help the population understand their health situation. These resources prove to be easily accessible, democratic and with systematization of knowledge; it is important to recognize that they must be suitable for the target population.

This review discloses a safe technology with positive factors that improve and modernize Nursing work in the face of the health services. With a focus on cardiac surgeries, these resources help the patient to visualize and understand the process and reduce the negative feelings that surround it.

It is noted that there is scarcity of studies on the implementation of these audiovisual tools with a focus on health education in the preoperative period, suggesting new studies on the subject matter to gather new evidence.

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NOTES

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CONFLICT OF INTEREST

There is no conflict of interest.

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