

Nursing and the application of the safe surgery list: an integrative review

Enfermagem e a aplicação da lista de cirurgia segura: uma revisão integrativa

Enfermería y la aplicación de la lista de cirugía segura: una revisión integrativa

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ABSTRACT: **Objective:** To analyze the scientific production on the application of the safe surgery checklist by the nursing team. **Method:** Integrative literature review, with search in the databases: Medical Literature Analysis and Retrieval System Online (Medline), Latin American and Caribbean Literature in Health Sciences (Lilacs), and *Banco de Dados em Enfermagem* (BDENF), with time frame from 2010 to 2020. **Results:** Of the 61 articles found, the production analyzed in the six selected articles allowed categorizing, according to meaning cores, the themes highlighted by the nursing teams in: “perception of nursing professionals”, “potentialities”, and “weaknesses”. **Conclusion:** Studies show that, from a nursing perspective, understanding the importance of the protocol for care practice is directly related to its applicability. With regard to strengths and weaknesses, there is a way to go, given the need to overcome flaws and barriers in the organizational culture of managers and health professionals.

Keywords: Perioperative nursing. Checklist. Patient safety.

RESUMO: **Objetivo:** Analisar a produção científica sobre a aplicação da lista de verificação de cirurgia segura pela equipe de enfermagem. **Método:** Revisão integrativa da literatura, com busca nas bases de dados: Medical Literature Analysis and Retrieval System Online (Medline), Literatura Latino-Americana e do Caribe em Ciências da Saúde (Lilacs) e Banco de Dados em Enfermagem (BDENF), com recorte temporal de 2010 a 2020. **Resultados:** Dos 61 artigos encontrados, a produção analisada nos seis artigos selecionados permitiu categorizar, conforme núcleos de sentido, os temas destacados pelas equipes de enfermagem em: “percepção dos profissionais de enfermagem”, “potencialidades” e “fragilidades”. **Conclusão:** Os estudos mostram que, na perspectiva da enfermagem, a compreensão da importância do protocolo para a prática assistencial está diretamente relacionada a sua aplicabilidade. No que tange às potencialidades e fragilidades, há um caminho a ser percorrido, haja vista a necessidade de superar as falhas e barreiras na cultura organizacional de gestores e profissionais da saúde.

Palavras-chave: Enfermagem perioperatória. Lista de checagem. Segurança do paciente.

RESUMEN: **Objetivo:** Analizar la producción científica sobre la aplicación de la lista de verificación de cirugía segura por parte del equipo de enfermería. **Método:** Revisión integrativa de la literatura, con búsqueda en las bases de datos: Medline, LILACS y BDENF, con un marco temporal de 2010 a 2020. **Resultados:** De los 61 artículos encontrados, la producción analizada en los seis artículos seleccionados permitió categorizar, según núcleos de significado, los temas destacados por los equipos de enfermería en: “percepción de los profesionales de enfermería”, “Potencialidades” y Fragilidades. **Conclusión:** Los estudios indican que, desde la perspectiva de enfermería, la comprensión de la importancia del protocolo para la práctica del cuidado está directamente relacionada con su aplicabilidad. En cuanto a las fortalezas y debilidades, hay un camino por recorrer, dada la necesidad de superar fallas y barreras en la cultura organizacional de los gestores y profesionales de la salud.

Palabras clave: Enfermería perioperatoria. Lista de verificación. Seguridad del Paciente.

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Received: 11/30/2022 – Approved: 12/08/2022

<https://doi.org/10.5327/Z1414-4425202227856>

INTRODUCTION

In 2008, the World Health Organization (WHO) launched the global challenge “Safe surgeries save lives” and, among its recommendations, the safe surgery checklist has become an important tool to minimize adverse events during surgical procedures¹⁻³.

This initiative emerged after the launch of the World Alliance for Patient Safety in 2004, which aimed to improve the safety of care and the development of policies and strategies in health care²⁻⁵.

The incidences of traumatic injuries, cancers, and cardiovascular diseases increase according to the population profile. Surgery is often the only treatment that can alleviate disability and reduce the risk of death. However, safety failure in surgical procedures can cause considerable harm to the patient and significant implications for public health³⁻⁵.

With the implementation of the challenge in 2008, an attempt was made to define safety standards that could be applied to all WHO member countries. Faced with this need, specialists created a checklist composed of three stages, namely: identification (before anesthetic induction), confirmation (before surgical incision — surgical pause, with the presence of all team members in the operating room), and registration (before the patient leaves the operating room)^{3,4}.

The checklist must be coordinated by a single member of the surgical team, who can be any health professional participating in the surgical procedure, however it will often be a member of the nursing team, who will verbally lead all the steps^{2,3}.

Nursing plays an essential role to promote patient safety, especially in surgical care. In view of their co-responsibility in applying the checklist, the use of this instrument makes it possible to reduce the occurrence of adverse events, implement improvements in the quality of perioperative care, and increase the effectiveness of nursing care, with the expected result being more patient safety, with less chance of care errors^{6,7}.

Despite being an important tool for promoting safe surgery, its applicability is hampered by the interaction and integration between the health professionals who make up the surgical team. When used as a means of interpersonal communication, it extends as a facilitator of care for surgical patients and promotes a culture of safety⁶.

The interest in the subject is justified by the importance of the work developed by the nursing team in the surgical

center and in the effectiveness of patient safety, with the purpose of expanding discussions on the subject and subsidizing future studies.

OBJECTIVE

To analyze the scientific production about the application of the safe surgery checklist by the nursing team.

METHOD

Integrative literature review. For the elaboration of this study, the following steps were set:

1. Identification of the theme and selection of the hypothesis or research question;
2. Establishment of criteria for inclusion and exclusion of studies/search in the literature;
3. Definition of information to be extracted from selected studies/categorization of studies;
4. Evaluation of included studies;
5. Interpretation of results; and
6. Presentation of the knowledge review/synthesis⁸.

Thus, the research question was: “What is the focus of scientific articles that discuss the use of the safe surgery checklist by nurses?”.

The research was carried out between September and October 2021, in the databases: Medical Literature Analysis and Retrieval System Online (Medline), Latin American and Caribbean Literature in Health Sciences (Lilacs) and *Base de Dados em Enfermagem* (BDENF).

Inclusion criteria were: original articles; texts available in full; in the said languages; in online format; and published in the last ten years (2010–2020).

Exclusion criteria were journals that did not address the subject of the study, integrative reviews and experience reports, secondary studies, response letters and editorials. As the study envisaged the application of the safe surgery checklist by the nursing team, studies that dealt with a multidisciplinary team or did not address the nursing perspective on the subject were excluded.

The descriptors selected in Health Science Descriptors (*Descritores em Ciência da Saúde* – DeCS) and their combinations were used, correlated by the Boolean operator AND: nursing staff, patient safety, and checklist, in English and Portuguese.

In order to select the articles that met the inclusion criteria, initially the duplicated works were excluded; subsequently, the selection was carried out by reading the title, then reading the abstract and, finally, reading the article in full. The categorization and synthesis of the theme were carried out, with the aim of describing and classifying the results, presenting the knowledge produced on the proposed theme.

Data collection continued with exploratory and selective reading of the material found to identify whether the articles were in line with the theme, analyzing the parts that were really interesting. After the initial reading stage, the information extracted from the sources was recorded in a specific instrument (theme, authors, year, objective, method, results, and conclusions) to proceed with the analysis and categorization of the results of the selected studies.

The search generated 61 results, 33 of which were duplicated in the databases. Of the 28 articles selected for abstract reading, seven were indexed in Medline; of these, six were excluded for not addressing the theme and one was selected. The Lilacs database generated 20 results, of which four were excluded for not being appropriate to the theme, eight dealt with a multidisciplinary team, one was an integrative review, and one was an experience report, so that five were selected for reading. In the BDENF database, three articles were obtained, which did not fit the theme, and none were selected. The articles were organized in a flowchart based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2009 Flow Diagram⁸, with the description of the different stages of the review, mapping the number of records identified, included, and excluded and the reasons for exclusions (Figure 1)⁹.

In addition, the studies were classified according to the Oxford Center for Evidence-Based Medicine table¹⁰ according to the level of evidence, namely: grade of recommendation A: obtained through meta-analysis of randomized controlled clinical trials; grade of recommendation B: systematic review of cohort, case-control, and ecological studies; grade of recommendation C: case reports; grade of recommendation D: expert opinion devoid of critical evaluation or based on basic materials.

RESULTS

Careful reading was carried out with the aim of ordering and grouping the information contained in the articles, so that they would allow obtaining answers to the research question. Six publications were selected, all accessible in Portuguese.

Among them, there were two descriptive-exploratory studies, one cross-sectional study and three qualitative and exploratory studies.

Of these articles, three had nurses, two nursing teams, and one nursing technician as their target audience. The synthesis of the studies was organized with the authors' names, year of publication, title, method, objective, results, level of evidence, language, and database (Chart 1)¹¹⁻¹⁶.

After exhaustive reading and analysis, it was decided to group the contents according to the nuclei of meaning found. Thus, the studies were categorized according to the themes highlighted by the nursing teams, such as "perception of nursing professionals", "potentialities", and "weaknesses" (Chart 2).

DISCUSSION

Among the perceptions of nursing professionals, the following were highlighted: the checklist as an essential tool for patient safety, an instrument that facilitates care, challenging implementation, care qualifier, and the need for educational processes. As for potentialities, improvement in communication and use of the list as an opportunity for dialogue, reduced chance of errors, and participatory nursing leadership; and, as weaknesses, lack of team participation and difficulty in carrying out the checklist steps within the recommended moments.

Perception of nursing professionals

In view of the findings regarding the theme, it was observed that nursing professionals have different perceptions about the application of the checklist.

There is consensus on the need to ensure patient safety and that the use of safety protocols contributes to the quality of perioperative care, given that the use of the protocol provides the prevention of adverse events, being an important tool used by the nursing team. However, even with this knowledge, the implementation is still a challenging process because, despite promoting effective communication, it can generate constraints for the applicator due to the trivialization of the protocol by team members¹²⁻¹⁵.

Reinforcing these findings, article II reports that, although nurses recognize the importance of the checklist for patient safety and wish to implement it in their work routine, they did not adhere to the protocol, since the culture of surgical patients safety was not part of the institution where the research was

carried out. Data such as these corroborate the barriers reported by nursing professionals regarding the use of the checklist, which result from inadequate organizational processes¹⁷.

The checklist is an instrument prepared by international experts and adapted to the reality of different countries and

can be adapted according to the needs of each institution³. These characteristics allow it to be used in completely different situations, reducing possible damage and promoting care quality, as it is a useful tool for decision-making and attitudes, providing effective actions^{3,5}.

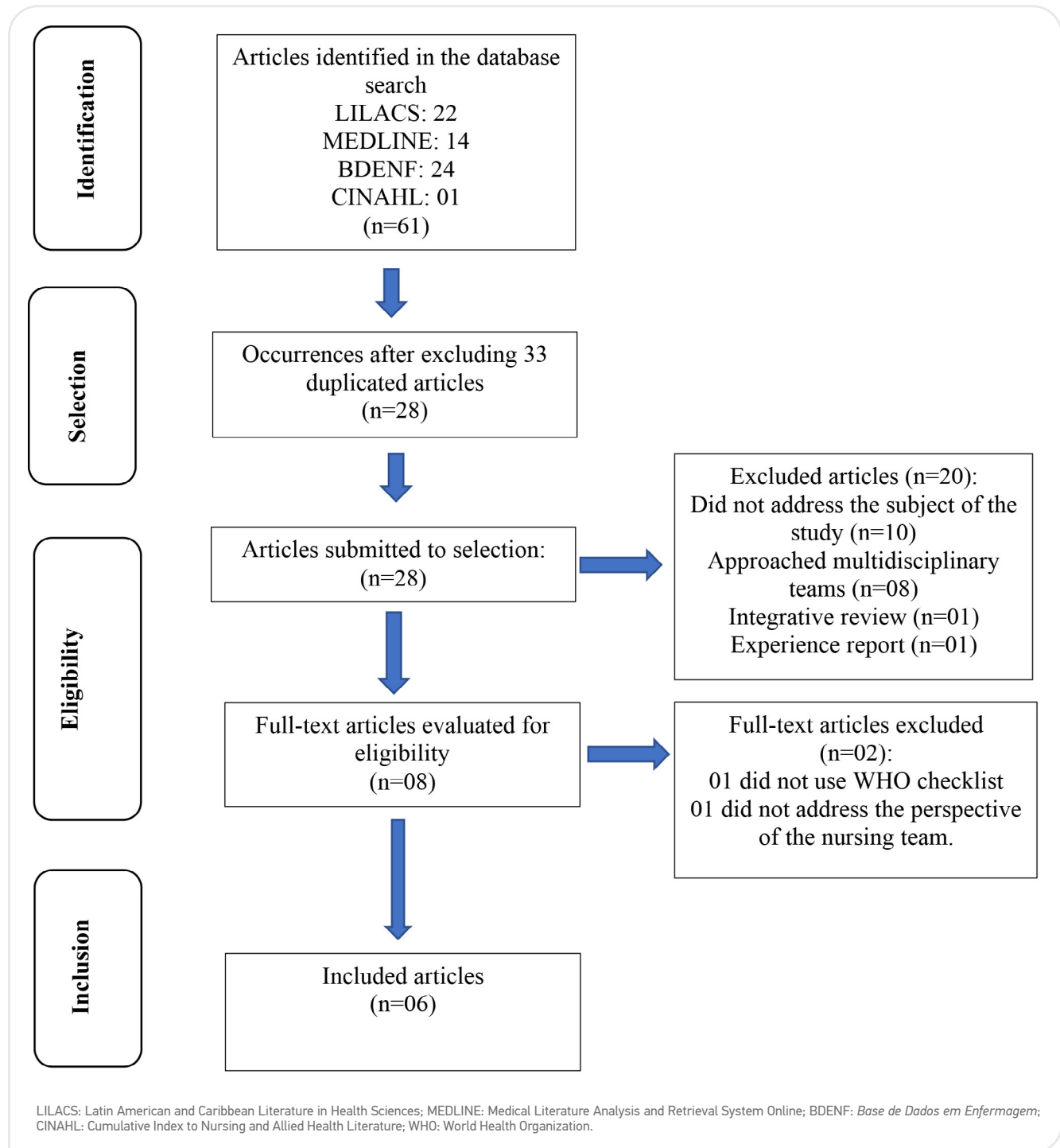


Figure 1. Flowchart of preferred reporting items for systematic reviews and meta-analyses⁹, São Luís, Maranhão; 2021.

Chart 1. Synthesis of studies on the nursing team's perception about the safe surgery checklist. São Luís (MA), Brazil, 2022.

Articles	Title	Reference	Method	Objective	Results	Level of evidence/ language/database
I	Implementação e uso diário da lista de verificação de segurança cirúrgica em hospitais	Tostes e Galvão ¹¹	Descriptive-exploratory study.	To identify the implementation process and the daily use of the surgical safety checklist, according to nurses' reports.	Partial adherence to the use of the checklist by the surgical team; difference in adherence between the checking stages (entry, pause, and exit) and between professional categories.	2B Portuguese LILACS
II	A percepção da equipe de enfermagem acerca da utilização do <i>checklist</i> de cirurgia segura no centro cirúrgico em maternidade do Sul do Brasil	Moraes et al. ¹²	Qualitative, exploratory, and descriptive study.	To know the perception of the nursing team regarding the use of the safe surgery protocol.	The nursing team has knowledge about the safe surgery protocol and is known to observe the importance of using the checklist for the safety and well-being of patients undergoing surgical procedures.	3B Portuguese English MEDLINE
III	Lista de verificação de segurança cirúrgica: benefícios, facilitadores e barreiras na perspectiva da enfermagem.	Tostes e Galvão ¹³	Cross-sectional study with a quantitative approach	To identify the benefits, facilitators, and barriers in the implementation of the surgical safety checklist.	Shows the benefits of implementing the checklist. Identifies facilitators (provision of education and acceptance by surgeons) and barriers (lack of administrative support and leadership, absence of a patient safety center, and lack of education).	2B Portuguese English LILACS
IV	Dificuldades na aplicação do <i>checklist</i> cirúrgico: estudo qualitativo de abordagem ecológica restaurativa	Oliveira Junior e Magalhães ¹⁴	Qualitative study, from the perspective of ecological, and restorative thinking	To analyze the application of the safe surgery checklist, according to the perception of nursing technicians.	From the grouping of information, three categories emerged: checklist for patient safety, still a challenge; difficulty in adhering to the safe surgery checklist; and checklist steps.	2C English, Portuguese LILACS
V	Aplicabilidade de <i>checklist</i> de cirurgia segura em centros cirúrgicos hospitalares	Souza et al. ¹⁵	Cross-sectional study with a quantitative approach	To identify the applicability of the safe surgery checklist in hospital surgical centers.	Changes in the team's interpersonal communication and improvements in the care area. The main facilities were the quick and easy filling and the organization of the service. The main difficulty was the lack of team participation.	3B Portuguese LILACS
VI	Percepção de uma equipe de enfermagem sobre a utilização do <i>checklist</i> cirúrgico	Gomes et al. ¹⁶	Exploratory, qualitative study.	To know the perception of nursing professionals who work in a surgical center regarding the use of the surgical checklist.	Perception of the need to ensure patient safety. The checklist is the main tool in reducing harm and adverse events.	3B Portuguese LILACS

Chart 2. Summary of themes highlighted by the nursing teams. São Luís (MA). Brazil, 2022.

Categories	Related factors
Perception of nursing professionals	Essential tool in patient safety
	Assistance facilitator
	Assistance qualifier
	Challenging Deployment
	Need for educational processes in its implementation
Potentialities	Improved communication and use of the list as an opportunity for dialogue
	Reduced chance of errors
	Participatory nursing leadership
Weaknesses	Lack of team participation
	Difficulty performing the checklist steps within the recommended times

It is noteworthy that one of the main barriers reported in the research by the nursing team is the lack of support from the heads of surgery, anesthesia and nursing, associated with the lack of monitoring of the practice of use and disbelief about the benefits of the checklist¹⁵.

It is noteworthy that the first step toward the effective implementation of protocols is to make professionals understand the real need and importance of such measures for patient care, which is done through educational processes^{1,18}. Corroborating this statement, Oliveira Junior and Magalhaes¹⁴ reported that the nursing team, based on training and awareness about filling out and the importance of the checklist, felt qualified for its use and application.

Carrying out an educational program is a relevant strategy in the process of implementing and adhering to the safe surgery protocol; however, it is suggested that it be conducted by a multidisciplinary team, with the inclusion of representatives from each function who have leadership potential, emphasizing the involvement of all professional categories is an essential element in the implementation of the checklist¹⁴.

The literature emphasizes the orientation and awareness of the team through the promotion of reflections and debates regarding the applicability of the safe surgery protocol, however, it is necessary to work on the internal culture in order to promote patient safety by investing in permanent education, expanding knowledge about the importance of the checklist, promotion of teamwork, and attribution of responsibilities^{18,19}.

Potentialities

Regarding the potential that the use of the checklist represents, the authors explain that the main benefit of the

tool is the improvement in communication, the reduction in the chance of errors, and the establishment of nursing as the main leadership in its execution process¹²⁻¹⁶.

It is pointed out that often, in the operating room, communication is insufficient — an important characteristic to be improved, since it negatively impacts the care provided. This corroborates the literature that states that communication failure is one of the main factors that contribute to adverse events and that there are greater chances of canceling surgeries, surgical errors, and risk situations that can lead to death when communication is not effective, providing a dangerous assistance²⁰.

Souza et al.¹⁵ found that, from the application of the checklist, there was a perception of changes in the interpersonal communication of the surgical team, since it contributes to the reduction of friction caused by unpredictability and to the improvement of the relationship between the teams, facilitating the communication.

Research results point to the benefit of using the checklist in reducing postoperative complications and mortality, as well as in dangerous care and ineffective communication between the team when comparing levels before and after the tool's implementation, in addition to reducing the number of possible errors^{20,21}.

Gomes et al.¹⁶ mention that, within the scope of potentialities, the use of this tool values the nurses' role as managers in the care process. It is believed that participative leadership in nursing, through close communication between the team and the patient, contributes to continuous and safe care; it should be noted that the work of nurses with multidisciplinary teams is essential.

The literature makes it clear that the use of the checklist aims to considerably reduce the risks that are most recurrent

during the perioperative period and that its applicability represents the strengthening of the care provided to the patient in a moment of fragility, as well as in the leadership process that professional nurses exercise in the sector²². The use of this tool has potential with regard to the care provided, as well as appreciation, professional recognition, and better communication among the team^{23,24}.

Weaknesses

The main difficulty reported in studies I, IV, and V was the lack of team participation in applying the protocol and in complying with all stages. The articles report that understanding the surgery protocol can be seen as a mere exercise of ticking items, which generates resistance and trivialization in the execution of the checklist and can be one of the weaknesses in its adherence. Another weakness pointed out was the difficulty of executing the checklist steps at the recommended moments.

The difficulties in using the checklist are in line with the results found in a study that pointed out the lack of team participation, the use of difficult-to-understand items, the lack of explanation about the list, and the lack of time to complete it²⁵.

In addition to the perception of nursing, it is noteworthy in this category of fragility that studies carried out in Canada, England, and Brazil found little engagement of the team regarding the application of the checklist. Nursing professionals report a lack of team participation, which at times causes embarrassment, highlighting the need for training and educational processes regarding the importance of the tool for the care process^{22,26,27}.

The involvement of the team regarding the applicability of the checklist has been identified as a key element for promoting adherence to the tool and for obtaining excellent results in its use, as well as for improving interpersonal communication. When the list is carried out by everyone and everyone knows its importance, it is filled out more completely^{11,25,28}.

With regard to the difficulty related to not completing it within the recommended time, the literature addresses this obstacle as opposed to the characteristics presented on the checklist, considering that it constitutes a tool for rapid completion. Possibly this barrier is exacerbated by the lack of adherence by the entire team, which can lead to an overload of responsibility and attributions for a single member^{1,25}.

The study had as a limitation the small number of articles published on the subject, mainly national ones, not

broadening the researchers' horizons regarding successful international experiences.

CONCLUSION

The safe surgery checklist brought significant changes to the perioperative patient care process. Nursing plays a fundamental role in the adherence and applicability of the protocol, in the different stages of its execution.

The objective of analyzing the scientific production regarding the application of the safe surgery checklist by the nursing team was fully achieved.

From the perspective of nursing, regarding its use, care practice is directly related to understanding the importance of the protocol. However, with regard to strengths and weaknesses, there is a way to go, given the need to overcome failures and barriers in the organizational culture of managers and health professionals.

Given the above, we hope that this research will contribute to the development of scientific knowledge about the applicability of the checklist as a tool to improve and encourage the quality of perioperative care.

Future research may study continuing education and team training to contribute to the effective implementation and adherence to the checklist and to develop strategies to encourage changes and adaptations in the work environment and in the performance of care practices.

FUNDING

This work was carried out with the support of *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior-Brasil (CAPES)*, Funding Code 001.

CONFLICT OF INTERESTS

The authors declare there is no conflict of interests.

AUTHORS' CONTRIBUTIONS

PPCR: Project management, Formal analysis, Writing – review & editing. PNP: Data curation, Investigation. TCB: Methodology, Visualization. DJLCS: Writing – original draft. NAVM: Supervision. ADEJ: Supervision, Validation.

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