Revista de Enfermagem
do Centro-Oeste Mineiro
2019;9:e2608
DOI: 10.19175/recom.v9i0.2608
www.ufsj.edu.br/recom

Original Article

CHECKLIST DE CIRURGIA SEGURA: CONHECIMENTO E UTILIZAÇÃO DO INSTRUMENTO NA PERSPECTIVA DOS TÉCNICOS DE ENFERMAGEM

CHECKLIST FOR SAFE SURGERY: KNOWLEDGE AND USE OF THE INSTRUMENT FROM THE PERSPECTIVE OF NURSE TECHNICIANS

CHECKLIST DE CIRUGÍA SEGURA: CONOCIMIENTO Y USO DE LA HERRAMIENTA EN LA PERSPECTIVA DE LOS TÉCNICOS DE ENFERMERÍA

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RESUMO

Objetivo: compreender o conhecimento e práticas dos técnicos de enfermagem sobre a aplicação do *checklist* de cirurgia segura em um hospital de ensino. **Método:** pesquisa qualitativa que contou com a participação de dez técnicos de enfermagem que atuam como circulantes de sala no Centro Cirúrgico. A coleta de dados foi realizada por meio de entrevista com roteiro semiestruturado e os dados foram submetidos à Análise de Conteúdo. **Resultados:** dos depoimentos dos técnicos de enfermagem emergiram três categorias: "Cirurgia segura na concepção dos técnicos de enfermagem", "A prevenção do erro em centro cirúrgico como sinônimo de identificação do paciente e atenção aos parâmetros clínicos" e "Compreendendo o uso do *checklist* de cirurgia segura: dissonâncias teórico-práticas". **Conclusão:** os técnicos de enfermagem demonstraram não terem conhecimento claro e fundamentado teoricamente sobre os aspectos que envolvem a segurança cirúrgica, não reconhecem o instrumento como ferramenta de prevenção/redução dos erros comumente ocorridos em centro cirúrgico e não sabem utilizá-la de maneira adequada.

Descritores: Lista de checagem; Time out na assistência à saúde; Segurança do paciente; Enfermagem de centro cirúrgico.

ABSTRACT

Objective: to understand the knowledge and practices of nurse technicians on the application of safe surgery checklist in a teaching hospital. **Method:** Qualitative research that counted on the participation of ten nurse technicians who act as circulating of room in the Surgical Center. An interview with semi-structured script was applied and the data was submitted to Content Analysis. **Results**: Three categories emerged from the testimonies of the nurse technicians: 'Safe surgery in the conception of nurse technicians", "The prevention of surgical center error as a synonym of patient identification and attention to clinical parameters" and "Understanding the use of the safe surgery checklist: theoretical-practical dissonances". **Conclusion:** The nurse technicians demonstrated that they do not have clear knowledge and, theoretically based on the aspects that involve surgical safety, they do not recognize the instrument as a tool for prevention/reduction of errors that commonly occur in Surgical Centers and do not know how to use it properly.

Descriptors: Checklist; Time Out, Healthcare; Patient safety; Operating room nurse.

RESUMEN

Objetivo: Comprender el conocimiento y las prácticas de los técnicos de enfermería sobre la aplicación del *checklist* de cirugía segura en un hospital de enseñanza. **Método:** Investigación cualitativa que contó con la participación de diez técnicos de enfermería que actúan como circulantes de sala en el Centro Quirúrgico. La recolección de datos fue realizada a través de una entrevista con un guion semiestructurado y los datos fueron sometidos al Análisis de Contenido. **Resultados:** De los testimonios de los técnicos de enfermería surgieron tres categorías: "Cirugía segura en la concepción de los técnicos de enfermería", "La prevención del error en centro quirúrgico como sinónimo de identificación del paciente y atención a los parámetros clínicos" y "Comprender el uso del *checklist* de cirugía segura: disonancias teórico-prácticas". **Conclusión:** los técnicos de enfermería no demosntraram tener un conocimiento claro y fundamentado teoricamente sobre los aspectos relacionados con la seguridad quirúrgica, no reconocen el instrumento como una herramienta de prevención/reducción de los errores que ocurren comúnmente en el centro quirúrgico y no saben utilizarla de manera adecuada.

Descriptores: Lista de verificación; Pausa de seguridad en la atención a la salud; Seguridad del paciente; Enfermería de quirófano.

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Como citar este artigo:
Ferreira NCS, Ribeiro L, Mendonça ET, et al. Checklist de Cirurgia Segura: Conhecimento e Utilização do Instrumento na Perspectiva dos Técnicos de Enfermagem. Revista de Enfermagem do Centro Oeste Mineiro. 2019;9:e2608. [Access_____]; Available in:_____. DOI: http://dx.doi.org/10.19175/recom.v9i0.2608

INTRODUCTION

Currently, the interest in patient safety in health care services has been driven by the results of numerous surveys that demonstrate the extent and impact of unsafe care. Patient safety is understood as the reduction of risk of unnecessary harm associated with healthcare to an acceptable minimum and is one of the basic criteria for ensuring quality care[1].

In the context of patient safety, Adverse Events (AE) resulting from errors made by health professionals stand out. According to the World Health Organization (WHO), AE are understood as any avoidable incident or preventable circumstance resulting from care, unrelated to the underlying pathology, which results in unnecessary harm to the patients. It is estimated that AE affect 4 to 16% of all hospitalized patients. Approximately 48% of all AE involve surgical activities, and the errors are avoidable in 30 to 50% of the cases[1-2].

Surgical AE present great potential to cause serious damage, with the possibility of leading to death, bringing physical and emotional repercussions to the patients and their families, increasing hospitalization time, hospital costs and, consequently, causing a negative impact on the institution because their occurrence is directly related to the quality of health care[3,4].

In this context, in October 2004, the WHO established the "World Alliance for Patient Safety" to reduce unnecessary or potential harm associated with health care and to promote the development of health care policies and strategies[2]. In order to achieve goals related to safety in surgery, WHO launched in 2008 the guideline "Safe Surgery Saves Lives", recommending the use of a surgical checklist. This manual was adapted in Brazil by the National Agency of Sanitary Surveillance (ANVISA), indicating standards that should be applied in health institutions to improve safety in surgical care[4,5].

The checklist was developed upon reviews of evidence-based practices that identified the most common causes of harm to patients in the perioperative period and can be employed in any health care setting.

The checklist aims to reduce the occurrence of damage to patients, help surgical teams to systematically follow critical safety steps, representing a barrier to avoid human errors and seeking to standardize the activities that must be performed[4,6].

Studies have shown that the use of the checklist also facilitates the coordination of the surgical team, reduces mortality rates and complications in surgical patients, increases the adherence to antibiotic prophylaxis, and reduces the number of errors due to communication flaws within the team[5,7].

For the checklist to be properly applied, it is necessary that the team that acts in the surgical center (SC) recognize the importance of this instrument, know each of its steps, and be involved with its implementation. It is recommended that only one member of the team, which may be anyone, who participates in the surgical procedure be responsible for its application[8]. An advantage of having a nursing professional as responsible for the application of the instrument, especially one of the nursing technicians (NT) who act as circulating technicians in the room, is his ability to move at all steps in the care of the patient during the perioperative period. However, it is necessary that the nursing technicians be aware of the existence of the instrument and know how to use it[9].

Considering the importance of adherence to the checklist to reduce Surgical AE, the present study aimed to survey the knowledge and practices of circulating nursing technicians in operating rooms abut safe surgery and the application of the checklist in a teaching hospital in the Atlantic forest zone of Minas Gerais, Brazil.

METHODS

This is a qualitative study. This type of research allows the deepening of the meanings that people attribute to their actions and human relations, aiming at a comprehensive approach of the subjects who experience a given experience. It contributes to a better understanding of the distance between knowledge and practice, insofar as it assists in elucidating people's feelings, explaining their actions in the face of a problem in a particular situation[10].

The present study was carried out in the Surgical Center of a medium-sized hospital in the Atlantic forest zone of Minas Gerais, considered of philanthropic nature and providing medical-hospital care. This institution is linked as a teaching hospital of the Federal University of Viçosa where students develop practical activities. The safe surgery checklist is an instrument that is based on checking several relevant items to minimize the occurrence of errors and was implemented in all surgical

specialties of the SC of the institution where this study was conducted in 2014. Because the studied SC is small and has a small number of professionals, the nurse coordinator of the sector gave individual instructions about the use of the checklist to the circulating professionals of the operating room.

The participants of the research were ten NT that act as circulating technicians in the SC room. The inclusion criteria were: to be one of the NT of the SC, to act as a circulating technician in the operating room regardless of the time in the function. The exclusion criteria were: not to be one of the NT, to work in the sector during the night shift, and to away from work for any reason. The NT that work during the night shift mainly develop activities related to the preview and provision of materials for surgeries of the following day, which is why they were excluded from the study.

Data were collected in September 2016 through semi-structured interviews conducted using a script with five open questions, which sought to understand the conception that NT have on safe surgery as well as the strategies used by the surgical team to prevent errors in surgical patient care. Information was also sought regarding the use of the checklist in daily practice, as well as aspects that favor and/or prevent the effective application of this instrument.

The interviews took place within the surgical sector, in a room reserved for the participants to expose their experiences with tranquility and security. The testimonies were recorded with permission of the participants and later transcribed verbatim. For the purpose of preserving anonymity, the NT were identified through the letter I (interviewee) followed by a number corresponding to the order in which the interviews were conducted, such as I1, I2, I3 and so on.

The Content Analysis technique[11] was used to analyze the data obtained. The testimonies were all carefully read in order to reach a general understanding of the answers obtained. The statements were analyzed from thematic axes in order to investigate trends and confluences of concepts, with subsequent categorization. Then, the data were interpreted according to relevant literature.

The research was authorized by the Ethics Committee of the hospital where the study was carried out by signing the agreement term, and also by the Ethics Committee for Research with Human Subjects under protocol nº 57938016.0.0000.5153, in accordance with the ethical principles established in the Resolution 466/12 of the National Health Council.

RESULTS AND DISCUSSION

Regarding the characteristics of the study participants, seven out of the ten interviewees were female. The youngest participant was 22 years old and the oldest was 46; the average age was 30 years. The time elapsed after graduation of the NT ranged from one year and seven months to 12 years, and the time working in the operating room in the SC varied from one month to 10 years.

After reading, analyzing and interpreting the statements, the data were organized into three categories: "Safe surgery from the point of view of nursing technicians", "Prevention of errors in surgical centers as a synonym of patient identification and attention to clinical parameters" and "Understanding the use of the safe surgery checklist: theoretical-practical dissonances".

Safe surgery from the point of view of NT

It is understood that safe surgery occurs when measures are adopted to reduce the complications and mortality associated with the surgery occurring in the intraoperative period, either before, during or after performing surgical procedures[12].

The following statements illustrate what is a safe surgery from the NT perspective:

"[...]the technician is there, doing... his part, all right [...] the anesthesiologist, the surgeon [...] the material is all sterilized [...] instruments, the cart, all working [...]" (I3).

"[...] To ensure patient safety, from a clean room to the material also that is used in the surgery [...] totally sterile, correctly sterile [...] a correct asepsis of the site where the surgery will be done, use of methods that prevent the risk of infection [...] and ensure proper hand hygiene" (I4).

"[...] cleaning, and complete material, sterile material [...]" (I8).

The reports allow us to identify an important concern regarding material sterilization and cleanliness of the room, which are measures to reduce the risk of infection associated with the operative procedure. In order to guarantee surgical safety, it is necessary to use methods to prevent Surgical Site Infection (SSI)[2], which is the

most frequent cause of severe complications, reaching up to 38% of surgical patients, besides contributing to the increase morbidity and mortality, length of hospital stay and hospital costs[13].

Surgical site infection can be considered one of the most severe AE. It depends on the possibility of contamination of the surgical incision during the procedure in which there is a multiplication of microorganisms in the surgical wound. It can affect organs and cavities manipulated during the operative event and may occur up to thirty days after the surgery[13, 14, 15].

To reduce SSI rates, it is necessary to systematize the instrument processing (from cleaning to storage), the use of measures to prove the effectiveness of sterilization of fields, instruments and operative kits (such as chemical and biological monitoring in autoclaves), as well as hand hygiene by the team, use of masks, protective apparel and parameters, as well as correct asepsis of the site where the incision will be made, and aseptic handling of the materials used to perform the operative procedure among other measures[15,16].

Other important measures for patient safety associated with the anesthetic-surgical procedure were mentioned by the NT, such as: vital data measurement, equipment necessary to the procedure, patient monitoring, right patient, and presentation of surgical risk.

In this category, it is observed that the testimonies of the NT presented an incipient definition of what is safe surgery. The descriptions were concentrated on aspects related to the cleaning of the environment and provision of properly sterilized materials. Important measures to avoid surgical complications such as demarcation of the surgical site and laterality, effective communication within the team, readable writing, risk assessment of large blood losses, and counts of compresses and instruments among others[2,12] were not mentioned in the testimonies.

It was noticed that although the participants mentioned some safety measures, they were no able to define them according to the concept of safe surgery. For them, a safe surgery is the one in which the norms and routines adopted by the institution are strictly followed, thus demonstrating that they lack knowledge scientifically based about issues related to surgical safety. Lack of knowledge about safety can lead to numerous harms to patients, especially in the SC, because procedures of high and medium complexity, liable to irreparable damages, are carried out in this sector.

Prevention of errors in surgical centers as a synonym of patient identification and attention to clinical parameters

There is a tenuous interface between AE and errors, and their frequency is considered an indicator of the quality of care and is one of the points evaluated in some accreditation processes[3]. An error can be defined as an incident of an intentional nature or not that may result in harm to the patient. In the SC, errors can be related to the equipment and inputs, such as absence of maintenance and failure to preview and provide material resources, or may be associated with inattention during care, causing direct damages to the patients such as surgical table falls and unscheduled extubations[17].

The following statements illustrate how the NT identify in their daily routine the prevention of the occurrence of errors involving surgical patients.

"[...] if there was any mistake, to go back and tell the supervisors: there was a mistake, I gave the patient the wrong medicine [...] unfortunately, we are imperfect and make errors, now we just need to have humility and responsibility to go back and tell that we did a mistake" (I1).

"[...] you have to be attentive to vital data [...]" (I7).

"[...] I think the issue of identifying [...] everything is fundamental, whether patient data, of data on what you are going to give to the patient, of what the patients are going to do [...]" (I8).

In line with the reports of the respondents, it was evident that they were not able to cite measures that could be scientifically recognized to prevent error. However, the NT recognize the importance of reporting the error to the coordinator. This fact may suggest that the culture of punishment has vanished to give place to safety culture, because when the team reports the occurrences, it becomes easier to apply effective measures to prevent possible future mistakes[18].

Even though the NT report the errors, many professionals have difficulties to expose healthcare-related errors due to lack of openness

with the team to discuss these failures. Others say they still do not perceive the occurrence of errors in circumstances where they feel tense or harassed and have difficulties to speak, which is a negative aspect for patient safety[19].

Some factors such as lack of professionals, work overload, difficult relationships withing the team, and lack of nursing supervision are recognized as possible causes that may lead to the occurrence of errors[17-19].

One participant referred to the issue of patient identification as an important factor for patient safety. Correct identification is one of the international goals related to patient safety, to reduce the number of surgeries performed on the wrong patient [7].

The lack of identification of patients was pointed out as an important risk factor that leads to insecurity, and which may lead to severe damages to the patients[18]. The identification of the patients is of multidisciplinary responsibility and when correctly performed, it prevents several errors, such as medication error, procedures or surgeries in wrong patients and wrong sites, diagnosis errors, among others[20].

As for professional qualification, this was another item mentioned only once in the speech of one of the interviewees. However, this aspect is not less important. Professionals working in the SC must be "technically qualified[18]" to avoid failures and, consequently, reduce the number of errors.

"[...] Being prepared for what the person is going to do [...] to know what you are doing, and do it correctly [...]" (I2).

At no point did the NT cite the use of the instrument as a form to prevent errors in the SC. This fact highlights once again that the NT did not fully understand the questions related to safety practices in surgical procedures and that, despite using the instrument, they did not know that it was designed to minimize the occurrence of errors. The way the instrument is implemented in the sector without systematic training and without sensitization of the team may have contributed to this finding.

The lack of empowerment and training of professionals working in surgical care has already been mentioned as a problem for the safety of surgical patients in developing countries[2]. Furthermore, the implementation of any instrument requires the training of the professionals who will use it, as well as the involvement of the entire healthcare team in its implementation, so that they can understand why they are using the new tool and what benefits this use will bring for the quality of care, as well as will enable the professionals to have a critical-reflective view of their health practices[21,22].

Understanding the use of the safe surgery checklist: theoretical-practical dissonances

The checklist developed by the WHO seeks to standardize the activities that must be performed in the operating room, helping to memorize its stages, in order to improve the performance of professionals[7]. It consists of 19 items and everyone in the surgical team participates in its checking, including the patient. There is a sequential and systematized guidance to apply the instrument in three moments: before anesthetic induction, in which information is checked with the patient; prior to the surgical incision, when the checklist items are read aloud; and before the patient leaves the operating room to check the materials used in the procedure, ensuring that none of them are retained in the patient[3, 7, 8].

When the NT were asked if the patients or some other team professional provided information for completing the checklist, the following reports came up:

"I never check it with another person or with the doctor. I always look at the medical record" (I1).

"Yes, because if I get the surgery in the middle of the proves and a colleague is going to leave then he will pass me the data [...]" (I5).

"Yes. The Patient tells me the surgery he will do, where he will do it, if he is lucid, of course [...]" (I7).

It is apparent from the reports that the NT are not aware of using the instrument systematically as recommended by WHO. The testimonials suggest that the checklist is being filled in as any other mandatory document in the medical record, without the due importance in the order of completion. According to WHO guidelines, the checklist must be applied by a single member of the team, from the beginning to the end of the procedure. Moreover, if an error is detected, the checking must be interrupted until the problem is solved[2].

Although some NT reported that they asked questions to the patients, it is evident that they do not use the checklist correctly, do not perform the check in the three moments, and fill in the form without the participation of the

anesthesiologist and the surgeon. Their practice is not, therefore, in compliance with the recommendations of WHO and ANVISA.

The improper use of the instrument opens up gaps in the assistance, causing safety breaches. A study carried out in Rio Grande do Norte, Brazil, whose objective was to evaluate the adherence to the checklist in urological and gynecological surgeries revealed that the steps before anesthetic induction and surgical incision were the ones that presented the greatest number of problems regarding adherence to the checklist. Furthermore, the study identifies the need to demonstrate the purpose and correct completion of the instrument before and during its implementation[5].

Other research in southern Brazil identified similar results. It verified that the checklist does not take place verbally and that adherence to the instrument in relation to patient identification, procedure to be performed, and confirmation of the team, as ell as the counting of materials did not occur as recommended[23].

Although they do not use the instrument properly, the NT consider the checklist important for the continuity of care, because it has the record of what happened during the surgery (medicines used, invasive procedures, among others), providing important information for professionals who will receive the patient in the postoperative period. The following testimonies illustrate the above:

"[...] the information is registered there, the patient goes out [...] other people will have access, and will know the patient's journey here within the SC [...]" (I4).

"[...] when you take the patient from here to the other sector, he will be hospitalized, he will know. They will look there and see what type of surgery the patient did, if he has a catheter [...]" (I6).

"[...] the checklist forces you to give an identification to the patient [...] the questions that are contained in the checklist in certain sense endorse something that will take you to [...] is already half way" (I8).

Some NT reported that the checklist is useful to avoid errors because it forces the professionals to identify the patients; others recognized that the instrument guides the actions during the surgery. However, none of them demonstrated a deeper understanding of the theoretical conceptions surrounding surgical safety and the use of the checklist. None of the testimonials refer to the checklist as a tool developed and recommended by WHO to improve surgical care safety, suggesting that the instrument was deployed without contextualization with issues related to patient safety and globally discussed. Analyzing the speeches in a reflexive way, it is perceived that the NT have the idea that the checklist is just another document that must be filled. They do not see it as a strategic tool that is part of a program developed with the objective of increasing safety standards in health care.

Nursing professionals in SC perceive the need to ensure patient safety. However, it is essential to make the team aware of the importance of the checklist as a useful tool to achieve this objective. NT need to know the checklist and anticipate possible harms to promote quality of care. In addition, the use of the checklist also qualifies the work of the team involved in the surgical procedure, centralizing care in the patients[24].

Most of the NT agreed to say that the checklist favors care because it contains information about the intraoperative period and will be important for the continuity of care. Only three interviewees pointed out the lack of time as a difficulty to fill out the checklist. However, it is estimated that a total time of three minutes is enough for the application of the three phases of the verification process[5,8]. One of the interviewees pointed out that the checklist contains some irrelevant information. It is worth mentioning that WHO[14] guides and indicates changes in the structure of the checklist according to the reality of each institution; in the institution where this study was carried out, the instrument has already been adapted according to its reality.

FINAL CONSIDERATIONS

The study evidenced that NT showed a lack of scientifically sound knowledge about the aspects involved in surgical safety. Although the safe surgery checklist has been implemented in the institution where they work, the NT showed difficulties to talk about the checklist; they did not recognize the instrument as a tool to prevent/reduce errors that are common in SCs and did not know how to use it following the recommended critical steps.

In order for the checklist to be used correctly and to achieve its objective, it is necessary that health institutions adopt a safety

culture and provide training and qualification of professionals to use it. It is necessary that healthcare professionals see this tool not only as a document to be filled but as a strategy to reduce the occurrence of errors in SCs, and consequently, improve quality of the care provided to the surgical patients.

The study presents limitations due to the portraying of the reality of a single study scenario, with peculiar characteristics, thus preventing the generalization of the results. Despite this, the study brings important contributions to elucidating how the checklist has been used in surgical practice, pointing to the challenge of transforming a mandatory check document into a necessary instrument capable of improving the safety of surgical patients.

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Note: Research originated from a Work Completion Course presented to the Department of Medicine and Nursing of the Federal University of Viçosa, for the acquisition of a bachelors degree in nursing.

Received in: 10/11/2017
Approved in: 19/11/2018

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