

Safe surgery checklist: perception of the health team

Checklist de cirurgias seguras: percepção da equipe de saúde

Lista de verificación de cirugía segura: percepción del equipo de salud

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ABSTRACT

Objective: to analyze the perception of health professionals in the operating room regarding the use of the safe surgeries' checklist. **Method:** descriptive-exploratory study, with a qualitative approach, carried out with 29 professionals from the surgical team of a university hospital in the Brazilian Midwest. Data obtained through individual interviews, between February and March 2019, guided by a semi-structured instrument. Content analysis performed. **Results:** thematic categories 'Practice and importance attributed to the use of the safe surgeries checklist by the health team' and 'Perspectives for the effective use of the safe surgeries checklist in professional practice' emerged. **Conclusion:** It was revealed an incipient practice of using the safe surgeries checklist, despite understanding its importance, and there was recognition of professional and organizational aspects that need to be worked on to make the incorporation of this tool more assertive in the work process of institution.

Descriptors: Surgery Department, Hospital; Patient Safety; Risk Management; Quality of Health Care; Checklist.

RESUMO

Objetivo: analisar a percepção dos profissionais de saúde do centro cirúrgico acerca do uso do checklist de cirurgias seguras. **Método:** estudo descritivo-exploratório, com abordagem qualitativa, realizado com 29 profissionais da equipe cirúrgica de um hospital universitário do Centro-Oeste brasileiro. Dados obtidos por meio de entrevistas individuais, entre fevereiro e março de 2019, norteadas por instrumento semiestruturado. Realizada análise de conteúdo. **Resultados:** emergiram as categorias temáticas 'Prática e importância atribuída ao uso do checklist de cirurgias seguras pela equipe de saúde' e 'Perspectivas para o uso efetivo do checklist de cirurgias seguras na prática profissional'. **Conclusão:** Revelou-se uma prática incipiente do uso do checklist de cirurgias seguras, apesar de compreenderem sua importância, e verificou-se o reconhecimento de aspectos profissionais e organizacionais que precisam ser trabalhados para tornar a incorporação dessa ferramenta mais assertiva no processo de trabalho da instituição.

Descritores: Centro Cirúrgico Hospitalar; Segurança do Paciente; Gestão de Riscos; Qualidade da Assistência à Saúde; Lista de Checagem.

RESUMEN

Objetivo: analizar la percepción de los profesionales de la salud en centro quirúrgico sobre el uso del checklist de cirugías seguras. **Método:** estudio descriptivo-exploratorio, con abordaje cualitativo, realizado con 29 profesionales del equipo quirúrgico de un hospital universitario del Medio Oeste brasileño. Datos obtenidos a través de entrevistas individuales, entre febrero y marzo de 2019, guiadas por un instrumento semiestructurado. Análisis de contenido realizado. **Resultados:** surgieron categorías temáticas 'Práctica e importancia atribuida al uso de la lista de verificación de cirugías seguras por parte del equipo de salud' y 'Perspectivas para el uso efectivo de la lista de verificación de cirugías seguras en la práctica profesional'. **Conclusión:** Se reveló una práctica incipiente de utilizar el checklist de cirugías seguras, a pesar de comprender su importancia, y se reconocieron aspectos profesionales y organizacionales que deben ser trabajados para hacer más asertiva la incorporación de esta herramienta en el proceso de trabajo de la institución.

Descriptores: Servicio De Cirugía En Hospital; Seguridad del Paciente; Gestión de Riesgos; Calidad de la Atención de Salud; Lista de verificación.

INTRODUCTION

As they involve interdependent work processes, and especially due to the various unforeseeable situations, surgical centers are considered complex and high-risk sectors¹. The care dynamics in this setting is considered highly vulnerable to the occurrence of adverse events, which can result in deaths or complications related to the surgical procedures².

In the United States, the mortality rate at 30 days due to surgeries was estimated at 0.77%³. In the United Kingdom, there up to 1,500 incidents a year associated to low-quality surgical instruments alone, causing harms to the patients⁴.

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In Brazil, a number of studies evidence systemic and multifactorial characteristics of the incidents. In a teaching hospital from the Southeast region, the prevalence of surgical adverse events was estimated at 21.8%. Of the 60 cases, 90% were classified as preventable. There was predominance of surgical site infection (30%), followed by dehiscence (16.7%) and hematoma/seroma (15%); nearly 40% were related to various technical failures⁵. In another study, prevalence of the incidents was 8.7%, with more frequency of surgery suspensions and accidents with patients due to technical failures in the procedure⁶.

The search for care safety is therefore configured as a priority, and various strategies have been adopted worldwide aiming at the prevention of incidents, especially adverse events⁷. Among these categories, use of the Safe Surgery Checklist is encouraged due to the significant association with the reduction in the number of adverse events and in the mortality rate^{8,9}. Despite these promising factors and the health professionals' acknowledgment about the importance of using this tool, in the practice, compliance with it still does not correspond to its potential reach^{7,10}.

The analysis of 24,421 surgeries performed between 2010 e 2015 in a hospital from Belo Horizonte verified that the checklist was only filled out in 58.5% of the cases. It was also identified that compliance with the instrument differed between week days and weekends, even with a specific professional for this function, and that the "introduction of the team members", "identification of the patient" and "surgery site" items had never been used/filled out⁷. Several factors are listed as reasons for low compliance with this instrument, such as the importance attributed to the checklist, non-communication among the health team members, and difficulty adapting to the new patient safety culture¹¹.

Understanding the perception of the professionals immersed in the surgical center setting about the aspects that interfere in compliance with the Safe Surgery Checklist can enable dialog and raise reflections about the professional practice, allowing favorable conditions for changes. Considering that many studies on the theme were documentary and retrospective^{7,10,12} and in order to bridge the scientific gaps related to understanding of the aspects involved in non-compliance with this tool by the health professionals, the following question was defined: Which is the surgical team's perspective about the Safe Surgery Checklist and about the factors that interfere in compliance?

Given the above, this study aimed at analyzing the perception of the health professionals working in the surgical center about the use of the Safe Surgery Checklist.

METHOD

This is a descriptive-exploratory study with a qualitative approach. The *Consolidated criteria for reporting qualitative research* (COREQ)¹³ were adopted to prepare the research report.

The research universe consisted in the surgical center of a university hospital from *Distrito Federal*, with 343 beds, 22 outpatient offices and a profile of public and secondary-level care. The surgical center consists of six operating rooms, a post-anesthesia recovery room, a room devoted to the preoperative period, and a Sterilized Material Center (*Central de Material Esterilizado*, CME), and has 45 exclusive beds for General Surgeries.

The population consisted in the surgical center's health team, comprised by ten physicians from several surgical specialties, four nurses, 15 anesthesiologists, and 39 nursing technicians who work as circulating professionals and instrumentators. The inclusion criterion considered was having been allocated to the sector for more than three months. The professionals who were away from their functions during the data collection period were excluded.

Selection of the participants was for convenience. The theoretical data saturation sampling technique was used, which consists in interrupting data collection when verifying that no new elements will arise in the observation field to support the desired theorization¹⁴. After applying the eligibility criteria and considering theoretical saturation, the study participants were 29 health professionals, with no refusals.

A semi-structured script was used, which was subjected to a pilot test with five health professionals linked to the surgical center of an institution external to the setting under study. The script was assessed regarding understanding and ability to achieve the research objectives, consisting of two parts: the first corresponded to the characterization of the health team, sociodemographic data and aspects related to training; and the second included the following guiding questions: *Do you consider that it is important to apply the Safe Surgery Checklist? Why? In your opinion, which factors referring to the work dynamics interfere in application of the checklist? Which would be a good strategy for the checklist to be applied properly? How do you perceive the organizational support offered by this hospital for the health professionals to properly apply the checklist?* This part also included structured questions about delivery of a course on the application of the Safe Surgery Checklist and appropriate use of the tool in the surgical procedures in which the professional took part during the last six months.

The individual interview technique was used, in charge of the researcher, an undergraduate Nursing student attending the last period of the course who had no employment, academic or interpersonal relationship with the interviewees. Before initiating data collection, the researcher was trained in relation to the research method, the collection instrument and the approach to the participants.

Data collection was conducted between February and March 2019 in the professionals' workplace and with each interview lasting a mean of 20 minutes. Before starting the interviews, the Free and Informed Consent Form was handed in and, after agreeing to participate in the research, the participants were asked to sign such form and the Use of Sound Authorization Form. The field notes record and audio recordings were used to ease data acquisition. Considering that the participants were interviewed in their work recesses and the restrictions regarding time and access availability to reach them, it was not possible to send the transcribed texts for comments and/or suggestions, although the recorded audios were rigorously reviewed by the researchers in charge of this study. After publication, the study will be forwarded to the unit researched.

The quantitative data referring to the professionals' characterization were analyzed by means of descriptive statistics. The qualitative data were transcribed and identified with letters corresponding to the professional categories, followed by Arabic numbers according to the order in which the interviews were conducted. They were subsequently analyzed according to Bardin's theoretical framework, in its thematic modality¹⁵.

Three chronological stages followed, namely: pre-analysis (choice of the documents to be analyzed, formulation of the hypotheses and elaboration of indicators for final interpretation); exploration of the material (coding to reach the text understanding nucleus, simultaneously performed by two data coders); and treatment of the data obtained (inferences, interpretations and confrontations)¹⁵. The units of meaning were obtained from the data and were defined by topics.

The reports revealed eleven units of meaning that, as per the semantic criterion, were classified into two thematic categories: Practice and importance attributed to use of the Safe Surgery Checklist by the health team, consisting of the "inadequate use of the Safe Surgery Checklist", "resistance in the health team", "the professional's commitment", "prevention of errors" and "health professional safety" units of meaning; and Perspectives for the effective use of the Safe Surgery Checklist in the professional practice, comprised by the "discontinued implementation process", health team engagement", "checklist follow-up by the management", "sensitizing and supervision of the health team", "communication and interaction among the health team members" and "organizational support" units of meaning.

The study was approved by the Research Ethics Committee and complied with CNS Resolution No. 466/12.

RESULTS

The study participants were 29 health professional who worked in the Surgical Center, with their characterization described in Table 1.

Table 1: Characterization of the surgical team (n=29). Brasília, DF, Brazil, 2019.

Variable	n	f (%)	Variable	n	f (%)
Gender			Highest academic degree obtained		
Male	11	37.9	Technical Course	2	6.9
Female	18	62.1	Graduation	10	34.5
			Specialization	14	48.3
Age (years)			Incomplete Master's degree	1	3.4
30-40	9	31.0	Master's degree	1	3.4
41-50	14	48.3	PhD	1	3.4
51-60	6	20.7			
Professional Category			Shift		
Nursing Technician	14	48.3	Day	17	58.6
Nurse	4	13.8	Night	12	41.4
Anesthesiology Physician	1	3.4			
Surgeon	10	34.5	No. of employment contracts		
			One	25	86.2
			Two	3	10.3
			Three	1	3.4

Considering all the employment contracts, the mean weekly workload was 49.3 hours, varying between 20 and 100 hours.

Regarding delivery of courses on the implementation of the Safe Surgery Checklist, 27 (93.1%) professionals reported not having been offered any course by the institution and 12 (41.4%) stated having attended courses out of their own initiative.

In relation to using the checklist in the last six months during the surgeries in which the professionals participated, 14 (48.3%) participants reported that the checklist was seldom properly applied, 11 (37.9%) stated that the checklist was properly applied in some of the surgeries, three (10.3%) mentioned that it is never applied properly, and one (3.5%) asserted that it is not applied.

This structured analysis converges with what was found in the Practice and importance attributed to use of the Safe Surgery Checklist by the health professionals thematic category, by revealing that the instrument is not used as recommended, especially in non-elective surgeries and as a consequence of work overload:

[...] we go monitoring in the rooms someone asking about the first part, which is identification. But it doesn't go any further than that (Ph 1).

[...] in elective surgeries it's easier for us to deal with the checklist because there's already something coming from the preoperative, with the patient, with the checklist and it reaches the operating room, they only finish filling it out. Now, actually, when it's an urgency, when it comes to the dynamics itself, it's difficult, mainly if the patient is in a serious condition (NT 7).

[...] we don't have enough people. Some days the schedule falls short, that the preoperative person sometimes performs two functions (...) then it is sometimes impossible to apply it to all the patients. (N 14)

It was revealed that use of the checklist is incipient as a result of resistance from the peers:

[...] in some situations, mainly inside the operating room, when you're going to confirm each member's, each professional's name, you already know everyone's names. But the checklist asks the person to repeat their own name and some people have some resistance (NT 14).

[...] Some of them don't cooperate and don't accept interrupting the period for it to be done (NT 31).

Different behaviors were also verified regarding use of the checklist by health professionals in the public and private spheres:

[...] it's just that it depends on where my surgery is. If it is here, there is practically no checklist. Speaking about a private hospital, for example, practically all my surgeries have a very well-succeeded checklist. It's extremely precarious here (Ph 19).

[...] they skip the surgery time, it remains incomplete, no Safe Surgery Checklists are filled out in the public service (Ph 23).

[...] here in the secretariat, unlike the private hospitals, that the higher instances determine something and they comply with it, not here. Here people do it their own way (NT 4).

Despite the incipient practice, the importance attributed by the professionals to the Safe Surgery Checklist to ensure safety for the patient and for the surgical team was unveiled. They associate its use to the prevention of laterality errors, exchange of patients, unintentional retention of objects after the surgery, and to the correct functioning of the surgical equipment:

[...] it's the physician responsibility to avoid errors such as exchange of patients, of pathology, of side for the surgery. I'm an orthopedist surgeon. For me, what is important is that safety it confers to the patient, to the physician, of operating on the right patient, on the right side (Ph 1).

[...] when you do the checklist you know everything. You already know what is going to happen, give or take some details, you already know what you need, what is missing, what is not working. I think that this is very important (NT 2).

[...] it's safety for the patient, it's safety for the worker (NT 25).

The perspectives for the effective use of the Safe Surgery Checklist in the professional practice category showed that there was a structured implementation process, although discontinued, not contributing to the effective process to incorporate the checklist into the health team's practice:

[...] they had some meetings, project disclosure, but it didn't go any further than that. If you look in here inside the surgical center, there's no model that we can say: this is what is being done. There was something at a time, but I don't see it any more, about 'when the patient enters, apply the safe surgery questionnaire'. There's no such thing. Then I think that the hospital is not giving... disclosing, not even offering adequate support for continuity of the project (Ph 1).

[...] the hospital has no support at all to do the checklist, the team doesn't receive proper guidance (NT 12).

The importance of patient safety management in collecting the checklists stood out, as well as evaluating the data, attributing meaning to the practice that goes beyond complying with a protocol:

[...] They start doing it, then as they don't require it, they come here and take it once. I don't really know how often they come to take it, no. I only know that it's difficult like this (NT 3).

[...] for it not be done only verbally, but that it is written, documented, and that somebody receives it to see that it has been done (Ph 1).

They also reported the importance of discussing the checklist with the multiprofessional teams, including the top management, as everyone's involvement is necessary for its implementation; it does not only depend on one professional category:

[...] the requirement must come from the management, from Nursing, the anesthesia team, as well as the surgery team. The checklist slows things down a little. And the delay in this process has to be accepted by all the teams and they have to understand that this is for the sake of safety (Ph 16).

[...] supervision and requirement is perhaps the most critical point in this aspect (Ph 1).

A number of needs for improvement were revealed so that the environment is more favorable for compliance with the Safe Surgery Checklist. They listed practices linked to supervision and awareness raising about its importance:

[...] sensitization of the medical team, as they attribute little importance to it. One of the main professional categories involved in this care is not aware of the importance of the Safe Surgery Checklist (NT 4).

[...] more effective interaction between the physician and the Nursing team, some rapport (Ph 17).

[...] because we need to have that supervision. As a nurse, I particularly manage to be present in one of them. But if the others start at the same time, there's no way that I could be there too. (N 5)

Organizational support for a more profound incorporation of the checklist was associated with training strategies, assessment of the team's difficulties, and approach of the safety managers to the clinical staff:

[...] more training for the teams. Training the people to do the checklist (Ph 16).

[...] effective training and subsequent follow-up with the employees regarding each one's difficulties (NT 5).

[...] there has to be more presence of responsible personnel. They have to stay some time here, doing, setting the example, because there has to be some incentive. And they have to be participative. (N 10).

DISCUSSION

The study participants presented diversified socio-instructional, training and qualification profiles. It is evidenced that homogeneity of the functions in the multiprofessional team's work process to execute the checklist involves cultural, training and qualification, service time and hierarchization factors, which interfere in understanding, acceptance and harmonization of its members for practice compliance^{16,17}.

On the one hand, the health professionals' perception about the implementation of patient safety strategies contributes satisfaction for enabling an improvement in care quality and, on the other, disappointment due to the delay in the implementation of actions and to some professionals' resistance in adhering to the process¹⁸.

Awareness raising in its members, allied to the teams' involvement in some common language, fundamentally contribute to achieving compliance with the checklist as a care practice and not as a so-considered administrative duty that blurs the potential benefits of the patient safety culture¹⁹⁻²³.

Almost half of the interviewees (48.3%) indicated that the instrument is rarely used as it should, and 93.1% stated not having attended any course offered by the institution. These findings denote that the apparent absence of an effective implementation process is due to the limited institutional initiative regarding training, in the sense of improving performance of the patient safety practices, as well as informing the team about the use of the Safe Surgery Checklist protocol so that it becomes an effective practice.

A study conducted in the Surgical Center of a University Hospital from Rio de Janeiro verified that professional qualification, represented by 30% of the reports, was one of the factors that favored implementation of the Safe Surgery Checklist²⁴.

However, filling out the instrument properly does not ensure better results by itself. Investments are necessary to build an organizational safety culture based on planning, action strategies and evaluation⁷. We welcome the team's systematic and continuous involvement in this process through continuing education, improvement in communication

with language standardization and, especially, with development of team awareness so that implementation of the checklist is not limited to a bureaucratic process²⁵.

An ethnographic study sought to respond to the perceived importance of different items from the Safe Surgery Checklist among different operating room members and, across the thematic categories, found that the participants from Nursing, Anesthesia and Surgery cited the briefing as the most important part of the checklist and that, sometimes, absence of personnel in the room was a problem for its consolidation. It was also evidenced that differences in the work flow and remuneration among the different team members of the operating room can be considered as barriers to adherence¹⁷.

The following are added as obstacles to compliance: non-introduction of the team, not conducting the briefing before the patient enters the room, and not answering important items such as identification of possible allergies. *Time-out* is frequently not complied with, or an incorrect and ill-timed questioning is conducted¹⁸.

Identification of barriers and development of institutional strategies that address social, cultural and professional issues such as the surgical team members' work volumes, sufficient time to check the Safe Surgery Checklist stages, support and training can contribute to improving the quality of the surgical procedures¹⁶.

It is noted that implementation measures aimed at compliance with the checklist as part of a care process go beyond local actions required from the surgical center unit. This change demands institutional incentive programs that include all the teams, which should also be mutually engaged. It is suggested that these programs be designed in order to involve all the care spheres and team members, including leaders, physicians, surgeons, nurses and technologists, among others²³.

The process to implement the Safe Surgery Checklist is considered complex and requires a careful evaluation and investigation of the possible barriers. Health professionals need to be sensitized and mobilized by means of training and qualification to understand that it is not only a protocol but a tool to reduce the occurrence of errors and, consequently, to improve care quality²⁶.

Some reports evidenced the need for the health professionals to feel the obligation to use the checklist, as well as the existence of a differentiated compliance behavior between the public and private spheres.

Corroborating with this result, a study conducted in the surgical center of a public hospital from Rio de Janeiro highlighted the absence of mechanisms to require good practices in patient safety as a factor that hinders application of the checklist²⁷. However, strengthening of the safety culture can favor a behavioral and attitudinal change in the health team, with multiprofessional engagement, in order to expand incorporation of the checklist as an institutional practice.

In the current study, it is pointed out that the checklist represented an effective contribution to the prevention of laterality errors, exchange of patients and unintentional retention of objects inside the surgical site, as well as to the functioning of the anesthesia and surgical devices. A descriptive study conducted in two hospitals from Minas Gerais verified that 30% of the surgeons asserted having experienced laterality exchange or retention of some surgical material in operated-on cavities. In addition to that, most of the Nursing professionals (61.2%) reported that the health team's resistance represents one of the greatest difficulties for the effective application of the checklist²⁸.

It is noted that evaluating the patient safety culture in the entire organizational context becomes relevant for enabling identification of the dimensions that need greater institutional investments and, then, direct the planning of actions to improve management and the assistance provided to the patient²⁹, especially those associated with surgical complications.

It is indispensable to include the Nursing team in this planning of institutional strategies, as these professionals excel in the application of the Safe Surgery Checklist. To such end, nurses need to strengthen their exclusive work tool based on the patient safety goals. This means implementing a Nursing process that integrates the Safe Surgery Checklist and the Nursing taxonomies, contributing to clinical decision-making and to the implementation of preventive measures for the safety of perioperative patients³⁰.

Study limitations

The study limitations are related to the fact that it only portrays the reality of a single health institution, which presents specific characteristics, thus exerting an influence on generalization of the results. However, the research contributes to understanding the challenges inherent to compliance with the Safe Surgery Checklist, including hospitals from various regions of the country with similar structures and barriers to face.

CONCLUSION

The reports by the professionals interviewed evidence that the tool's importance and its objective are clear. The importance attributed to using the checklist was related to the prevention of laterality errors, exchange of patients, correct functioning of the surgical equipment, control of unintentional retention of objects after the surgery, safety for the team, adequate recording of each surgical time, and verification of good quality assistance.

The main barriers to compliance with the checklist were related to multiprofessional engagement, characterized by individual resistance, reports of differentiated compliance behaviors between the public and private sectors, and offer of training sessions by the institutions. Such factors are also associated with low effectiveness in the process to implement the safe surgery protocol, considering the organizational context.

The need to expand practices linked to supervision and monitoring of the use of the checklist by the health professionals was pointed out, as well as sensitization of the health professionals to favor the process to implement the protocol.

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