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Surgical safety checklist: benefits, facilitators, and barriers in the nurses' perspective

Lista de verificação de segurança cirúrgica: benefícios, facilitadores e barreiras na perspectiva da enfermagem

Lista de verificación de seguridad quirúrgica: beneficios, facilitadores y obstáculos en la perspectiva de la enfermería

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ABSTRACT

Objective: To identify the benefits, facilitators and barriers in the implementation of the surgical safety checklist, according to the reports of nurses working in the hospital surgical center.

Method: Cross-sectional study with 91 nurses in 25 hospitals in two municipalities of Paraná. Between the years 2015 and 2016, two structured instruments were used to collect data. For the analysis, Fisher's exact or Chi-Square test was used.

Results: The implementation of the checklist brought benefits to the patient, surgical team and hospitals. Regarding the facilitators, the results presented a statistically significant difference between the groups in the items offering education (p=0.006) and acceptance by surgeons (p=0.029). In the barriers, the lack of administrative (p=0.006) and management (p=0.041) support, absence of the patient safety nucleus (p=0.005), abruptly introduced list (p=0.001) and absence of education (p<0.001).

Conclusion: The evidence generated allowed to identify the benefits, facilitators and barriers in the implementation of the checklist in the national context.

Keywords: Perioperative nursing. Checklist. Patient safety.

RESUMO

Objetivo: Identificar os benefícios, facilitadores e barreiras na implementação da lista de verificação de segurança cirúrgica, segundo o relato de enfermeiros que atuavam no centro cirúrgico de hospitais.

Método: Estudo transversal, com 91 enfermeiros em 25 hospitais de dois municípios do Paraná. Na coleta dos dados, entre 2015 e 2016, utilizou-se dois instrumentos estruturados. Para a análise, utilizou-se o teste exato de Fisher ou Qui-Quadrado.

Resultados: A implementação do checklist acarretou benefícios para o paciente, equipe cirúrgica e hospitais. Sobre os facilitadores, os resultados apresentaram diferença estatisticamente significante entre os grupos nos itens oferta de educação (p=0,006) e aceitação pelos cirurgiões (p=0,029). E, nas barreiras, para a falta de apoio administrativo (p=0,006) e chefias (p=0,041), ausência do núcleo de segurança do paciente (p=0,005), lista introduzida abruptamente (p=0,001) e ausência de educação (p<0,001).

Conclusão: As evidências geradas possibilitaram identificar os benefícios, facilitadores e barreiras na implementação do checklist no contexto nacional.

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

RESUMEN

Objetivo: Identificar los beneficios, los facilitadores y las barreras en la implementación de la lista de verificación de seguridad quirúrgica, según el relato de enfermeros que actuaban en el centro quirúrgico de hospitales.

Método: Estudio transversal, con 91 enfermeros en 25 hospitales de dos municipios de Paraná, Brasil. En la recolección de los datos, entre 2015 y 2016, se utilizaron dos instrumentos estructurados. Para el análisis, se utilizó la prueba exacta de Fisher o Qui-Cuadrado.

Resultados: La implementación del checklist acarreó beneficios para el paciente, el equipo quirúrgico y los hospitales. En los facilitadores, los resultados mostraron una diferencia estadísticamente significativa entre los grupos en los ítems oferta de educación (p=0,006) y la aceptación por los cirujanos (p=0,029); y, en los obstáculos, para la falta de apoyo administrativo (p=0,006) y jefaturas (p=0,041), ausencia del núcleo de seguridad del paciente (p=0,005), lista introducida abruptamente (p=0,001) y ausencia de educación (p<0,001).

Conclusión: Las evidencias generadas permiten identificar los beneficios, facilitadores y obstáculos en la implementación del checklist en el contexto nacional.

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

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INTRODUCTION

The Surgical Safety Checklist (SSC) was developed by the World Health Organization (WHO) and originated in the "Safe Surgeries Saves Lives" program, which advocates four pillars for safe surgical care, namely: prevention of surgical site infection, safety in anesthesia, improvement of teamwork and communication, and measurement of care through process indicators and results of surgical care. These safety standards were converted into items to be operated through the use of the *checklist* in the operating room[1].

In order to endorse the WHO global initiative, Brazil, in 2013, through Ordinance No. 1,377 of the Ministry of Health launched the Safe Surgery Protocol to be implemented by health services as part of the National Patient Safety Program[2].

Since the publication of the SSC, there are initiatives for its implementation in health services around the world, and there is evidence on the beneficial effects for the patient, such as: the significant decrease in surgical complications and mortality[3]; improving communication and teamwork[4], optimization of the work process, quality improvement and cost reduction[5-6]. However, the barriers imposed to the implementation of the list may compromise its effectiveness in clinical practice[6-7].

Thus, there is a necessity to know the critical factors involved in the implementation process and the interfering factors for the effective use of the list[6-7], because their recognition may support the use of more adequate strategies, both for the implementation process and for the daily use of the *checklist* in the health care services[1].

In the national scenario, among the researches that investigated the implementation of the SSC, we highlight a study on the impact of SSC on patients' morbidity and mortality. In this, the results showed that the frequency of mortality and surgical complications, such as for surgical site infection, unplanned return to the surgical center, wound dehiscence, cardiac arrest, unplanned intubation, use of mechanical ventilation for 48 hours or more, pneumonia, sepsis, urinary retention were considered low in both phases (before and after implementation of the list[8]. Regarding the opinion of the multidisciplinary team on the benefits of the list, its use provided more safety in the surgical anesthetic procedure. However, health professionals did not noticed changes in interpersonal communication[9].

Therefore, considering the WHO recommendation for the use of SSC to improve surgical safety, the lack of studies related to the Brazilian experience in the implementation of this tool, the present study was conducted through the following guiding question: What are the benefits, facilitators, and barriers to the implementation of the surgical safety checklist in hospitals? In order to answer this question, the objective was to identify the benefits, facilitators and barriers in the implementation of the surgical safety checklist, according to the report of nurses working in the hospital surgical center.

METHOD

A cross-sectional study conducted in 25 hospitals located in the National Registry of Health Establishments (CNES) of the Ministry of Health, located in two main cities that make up the mesoregion of Central-North of Parana, namely Londrina (n = 16) and Maringá (n=9). Regarding the characteristics of the participating hospitals in the city of Londrina, 16 hospitals were classified as general, three specialized and one day-hospital. In the city of Maringá, nine hospitals of which six were general, two specialized and one day-hospital. In those who implemented SSC (n=16), 11 in Londrina and five in Maringá, the number of beds varied between ten and 397. In those who had not implemented (n=9), five in Londrina and four in Maringá, the number varied between three and 130 beds. In the Surgical Center (SC), the number of operating rooms varied between two and 12 rooms in the hospitals that used the list. In the others, the number ranged from one to five rooms. Regarding the number of surgeries performed annually, in the hospitals that implemented SSC, the number ranged from 1,200 to a maximum of 18,000 surgeries. In other hospitals, it ranged from 190 to 4,000 surgeries.

It should be noted that this study is the result of the thesis entitled "Surgical safety checklist: evidence for implementation in health services" presented to the Fundamental Nursing Postgraduate Program of the College of Nursing in the University of São Paulo at Ribeirão Preto[10].

The target population was nurses of both sexes, working in the surgical center of the selected hospital institutions, namely: nurse coordinator/head of the unit or nurse assistant/in charge of the sector. The coordinating/director nurses of the hospital or other units that did not work exclusively in the surgical center were excluded, as well as professionals who were on leave, covering time off or vacations in the unit.

Thus, the target population was 96 nurses working in a surgical center in the hospitals of Londrina (n=63) and Maringá (n=33). After applying the selection criteria, five nurses were excluded, three from Maringá and two from Londrina, since they were on leave. Therefore, the study sample was composed of 91 nurses (Maringá, n=30 and Londrina, n=61). The choice of this target audience was due to this being

the professional category most commonly involved in the implementation of protocols aimed at improving clinical practice in health services in the Brazilian reality. In addition, nurses, as managers of the SC and, considering their professional responsibilities, supervise the practices that involve the multiprofessional team and, therefore, could be the participating professionals that could contribute expressively with the investigation of the object of this study.

For the data collection, two instruments were developed by the researchers (one aimed at the nurses who worked in hospitals where SSC was implemented, and the other for nurses who worked in institutions where the *checklist* was not implemented). The instruments were submitted to face and content validity by three invited judges with teaching and/or research activities in perioperative nursing. The instruments are subdivided into two sections, the first consisting of nurses, hospital and surgical center characterization data, and the second contains data on the benefits, facilitators and barriers in the SSC implementation.

The data was collected by the researcher himself, by signing the Informed Consent Form and by the participants. There were three options for completing the data collection instrument, namely: a) delivery of the printed instrument and filing at the time of the meeting/visit; b) delivery of the printed instrument and date scheduling for return (seven days with the return of the researcher to the hospital); c) sending the instrument of data collection to the e-mail of the participant with physical return (return period of seven days from the date that the e-mail was sent).

The data collection period was from December 2015 to May 2016. The data were stored in a spreadsheet of the *Microsoft Excel*, with the use of double typing technique. For the analysis of the data the Statistical Package Social Sciences software (SPSS) version 19.0 was used. The qualitative variables (benefits, facilitators and barriers) investigated were described using the absolute (nº) and relative (%) frequencies. The exact Fisher or Qui-Square test was adopted with significance level $\alpha = 0.05$.

The research was approved by the Research Ethics Committee of the College of Nursing in the University of São Paulo at Ribeirão Preto with Certificate of Ethical Appreciation Presentation (CAAE) nº 48347115.9.0000.5393 and approval report nº 164/2015.

RESULTS

Of the 91 nurses, the majority were female (85; 93.4%), with a predominance of marital status (40; 43.9%). The mean age and duration of the SC were 35.3 years and 5.7 years, respectively.

The majority of the nurses (77; 84.6%) worked in hospital institutions, where SSC (group 1) was implemented and used in practice, and 14 (15.4%) professionals worked in hospitals where the *checklist* was not implemented (group 2).

In the group 1, promotion of safety, use of the list as an opportunity for dialogue, socialization of relevant information and improvement of quality of care were the items with the highest percentage of benefits of SSC for the patient, surgical team and health service, respectively. In group 2, regarding the benefits for the patient, two items presented the same percentage, namely: safety promotion and prevention of adverse events. Regarding the benefits to the surgical team, two items also presented the same percentage (improvement of communication and the use of the list as an opportunity for dialogue, with socialization of relevant information). The improvement in the quality of care was the item with the highest percentage of the benefits of the SSC for the health service, as presented in Table 1.

Table 1 – Characterization of the benefits of the security checklist according to nurses' reports. Londrina, Maringá, PR, Brazil, 2015-2016

Variables	Group 1		Group 2		P
	N=77	%	N=14	%	N=77
Benefits for the patient					
Promotion of security					0.493*
Yes	74	96.1	13	92.9	
No	03	3.9	01	7.1	
Increased patient confidence in care					1,000**
Yes	50	64.9	9	64.3	
No	27	35.1	05	35.7	

Reduction of anxiety and fear in relation to surgery					0.567**
Yes	29	37.7	07	50.0	
No	48	62.3	07	50.0	
Prevention of adverse events					0.683*
Yes	66	85.7	13	92.9	
No	11	14.3	01	7.1	
Benefits for the surgical team					
Communication improvement					0.726*
Yes	59	76.6	12	85.7	
No	18	23.4	02	14.3	
Opportunity for dialogue with socialization of relevant information					1,000*
Yes	64	83.1	12	85.7	
No	13	16.9	02	14.3	
Improving Teamwork					1,000*
Yes	59	76.6	11	78.6	
No	18	23.4	03	21.4	
Benefits for the surgical center and/or hospital					
Improving quality of care					0.292*
Yes	72	93.5	12	85.7	
No	05	6.5	02	14.3	
Increased efficiency in the operating room					0.543*
Yes	53	68.8	11	78.6	
No	24	31.2	03	21.4	
Improved safety culture in the surgical center					0.334**
Yes	57	74.0	08	57.1	
No	20	26.0	06	42.9	
Reduction of hospital costs for the prevention of adverse events					1,000**
Yes	49	63.6	09	64.3	
No	28	36.4	05	35.7	
Reduction of hospital costs due to optimization of efficiency in the operating room					1,000**
Yes	35	45.5	06	42.9	
No	42	54.5	08	57.1	
The benefits gained outweighed the difficulties to implement the SSC***					0.909**
Yes	45	58.4	09	64.3	
No	32	41.6	05	35.7	

Source: Research data, 2015-2016.
*Fisher's Exact Test; **Chi-square test; ***SSC=Surgical Safety Checklist

In the group 1, in relation to the facilitators for the implementation of SSC, the support of the heads of surgery, anesthesia and nursing (organizational), monitoring of the use practice (implementation process) and acceptance by the nursing team (surgical team) were the items with larger percentages. In the group 2, the items with higher percentages were the support of the heads of surgery, anesthesia and nursing (organizational), the offer of educational program for the surgical team (implementation process) and the leadership present in the SC to stimulate the use of SSC (surgical team), as presented in Table 2. The results showed statistically significant difference between the groups in the items offered by the educational program (p = 0.006) and acceptance by the surgeons (p = 0.029) (table 2).

Table 2 – Characterization of facilitators for the implementation of the surgical safety checklist in hospitals according to nurses' reports. Londrina, Maringá, PR, Brazil, 2015-2016

Variables	Group 1		Group 2		P
	N=77	%	N=14	%	
Organizational					
Administration support					0.871*
Yes	28	36.4	06	42.9	
No	49	63.6	08	57.1	
Support of the heads of surgery, anesthesia and nursing					1,000**
Yes	54	70.1	10	71.4	
No	23	29.9	04	28.6	
Hospital have patient safety nucleus					0.378*
Yes	31	40.3	08	57.1	
No	46	59.7	06	42.9	
Implementation process					
Participation of the surgical team in the planning stage					0.094*
Yes	23	29.9	08	57.1	
No	54	70.1	06	42.9	
Educational program offer					**0.006****
Yes	28	36.4	11	78.6	
No	49	63.6	03	21.4	
Conducting a pilot test					0.169*
Yes	31	40.3	09	64.3	
No	46	59.7	05	35.7	
Gradual introduction of SSC***					0.189*
Yes	17	22.1	06	42.9	
No	60	77.9	08	57.1	
Involvement of patients to introduce the SSC					0.706**
Yes	13	16.9	03	21.4	
No	64	83.1	11	78.6	
Involvement of patients to introduce the SSC					0.545*
Yes	43	55.8	06	42.9	
No	34	44.2	08	57.1	

Surgical Team						
Leadership present at the surgical center to stimulate the use of SSC						0.154**
	Yes	38	49.4	10	71.4	
	No	39	50.6	04	28.6	
Acceptance by nurses						0.119*
	Yes	66	85.7	09	64.3	
	No	11	14.3	05	35.7	
Acceptance by surgeons						**0.029***
	Yes	23	29.9	09	64.3	
	No	54	70.1	05	35.7	
Acceptance by anesthetists						0.234*
	Yes	33	42.9	09	64.3	
	No	44	57.1	05	35.7	

Source: Research data, 2015-2016.
*Chi-square test; **Fisher's exact test; ***SSC = Surgical Safety Checklist

In the group 1, regarding the barriers to SSC implementation, the items with the highest percentages were the lack of support from the heads of surgery, anesthesia and nursing (organizational), lack of monitoring of the practice of use (implementation process) and disbelief on SSC benefits by team members (surgical team). In the group 2, the lack of support from the chiefs of surgery, anesthesia and nursing (organizational), absence of educational program (implementation process) and resistance of surgeons were the items with larger percentages, as presented in Table 3.

The results showed statistically significant difference between the groups in the lack of support from the administration (p=0.006), lack of support from the head of surgery, anesthesia and nursing (p=0.041), absence of the patient safety nucleus (p=0.005), abrupt introduction of SSC in the operating room, without planning (p=0.001) and absence of an educational program (p<0.001) (table 3).

Table 3 – Characterization of the barriers to the implementation of the Surgical safety checklist in hospitals according to nurses' reports. Londrina, Maringá, PR, Brazil, 2015-2016

Variables	Group 1		Group 2		P
	N=77	%	N=14	%	
Organizational					
Lack of management support					**0.006***
Yes	11	14.3	07	50.0	
No	66	85.7	07	50.0	
Lack of support from the heads of surgery, anesthesia and nursing					**0.041****
Yes	31	40.3	10	71.4	
No	46	59.7	04	28.6	
Absence of patient safety nucleus					**0.005***
Yes	14	18.2	08	57.1	
No	63	81.8	06	42.9	

Implementation process					
Imposition of use of SSC*** by the manager					0.288**
Yes	13	16.9	04	28.6	
No	64	83.1	10	71.4	
Abrupt introduction of SSV in the operating room without planning					**0.001***
Yes	08	10.4	07	50.0	
No	69	89.6	07	50.0	
Absence of educational program					**<0.001****
Yes	11	14.3	11	78.6	
No	66	85.7	03	21.4	
Absence of pilot test					0.160*
Yes	12	15.6	05	35.7	
No	65	84.4	09	64.3	
Lack of monitoring of the use practice					0.243*
Yes	28	36.4	08	57.1	
No	49	63.6	06	42.9	
Surgical Team					
Absence of leadership in the surgical center					0.387**
Yes	09	11.7	03	21.4	
No	66	88.3	11	78.6	
Difficulty of communication and teamwork					0.064*
Yes	17	22.1	07	50.0	
No	60	77.9	07	50.0	
Hierarchy among professionals					0.135*
Yes	20	26.0	07	50.0	
No	57	74.0	07	50.0	
Resistance of surgeons					0.148**
Yes	37	48.1	10	71.4	
No	50	51.9	04	28.6	
Resistance of anesthetists					0.594*
Yes	19	24.7	05	35.7	
No	56	75.3	09	64.3	
Resistance of nurses					0.648**
Yes	08	10.4	02	14.3	
No	69	89.6	12	85.7	
Resistance of nursing technicians					1.00*
Yes	26	33.8	05	35.7	
No	51	66.2	09	64.3	
Disbelief about SSC benefits by team members					1.00*
Yes	40	51.9	07	50.0	
No	37	48.1	07	50.0	

Source: Research data, 2015-2016.

*Chi-square test; **Fisher's Exact Test; ***SSC = Surgical Safety Checklist

DISCUSSION

In the present study, in the comparative analysis between the groups, the nurses' report on the benefits of SSC was similar, that is, the implementation of the *checklist* has the potential to produce beneficial effects for the patient, surgical team and health service. In a systematic review of the effects produced by the *checklists* the results indicated that these tools were effective in improving patient safety in different clinical settings, strengthening clinical practice in accordance with evidence-based guidelines, and reducing the incidence of adverse events, morbidity, and mortality[11].

In another systematic review on the benefits of SSC for the surgical team, the results pointed out that the use of the tool contributed to the improvement of self-perception of teamwork and communication[4]. However, when the *checklist* was used in inappropriate conditions or the individuals involved did not adhere to the implementation process, the use of SSC may have negative impact, such as the perception that its use does not produce change in interpersonal communication[4,9].

In relation to the benefits to hospitals, the implementation of SSC can promote cost reduction through efficiency gains, reduction of nurses turnover, reduction of delays, cancellation of surgical procedures and prevention of surgical complications[5-6].

With regard to the facilitators, the offer of educational program was not considered by the majority of the nurses who worked in hospitals that implemented the SSC (p=0.006). These results are contradictory to what is recommended in the literature, since education is considered an essential and facilitative element in the implementation of the *checklist*[6,12-13]. Thus, it can be inferred that, given the diversity of educational strategies used in hospitals to implement SSC in relation to the approach, content, time dedicated to activity, participant professional category, maintenance over time and results obtained[6,12-13] or absence of educational process[14], this facilitator can become a barrier.

The results showed a statistically significant difference between the groups in the item acceptance by the surgeons, that is, the nurses in the group 2 understood that the item in question is a facilitator for the implementation of SSC. On the other hand, the nurses in the group 1 did not recognize this aspect as a facilitator. In a qualitative study whose objective was to explore the factors that influenced adherence to the use of the checklist, the results showed that the resistance of members of the surgical team, especially of the surgeons, was one of the barriers to the implementation of SSC[7]. Thus, it is suggested that the implementation of this tool be conducted by a multidisciplinary team. In particular, surgeons and anesthetists, in order to be recruited, must have availability, exert good influence and a positive image with their peers[12], because sustained use of the list can be successful when physicians are actively engaged[15].

In a study conducted on the SSC implementation process in hospitals in England, the relevant facilitators for the successful implantation of the *checklist* were teaching about LVSC; hands-on training on how to use the tool and how to deal with resilient team members; audit, performance feedback, dissemination of results (reduction of adverse events) to minimize the skepticism of team members; sanctions for individuals who do not show adherence to the use; institutional support, tool integration into existing forms, conducting the check by team members with leadership skills, senior medical leadership and multidisciplinary team involved in the implementation process[16].

Regarding the barriers, as mentioned previously, the results indicated a statistically significant difference between the groups for: lack of support from the administration (p=0.006), lack of support from the heads of surgery, anesthesia and nursing (p=0.041), absence of patient safety nucleus (p=0.005), abrupt introduction of SSC in the operating room, without previous planning (p=0.001) and absence of education (p<0.001).

Regarding the management of health services, institutional micropolitical factors can contribute to the successful incorporation of SSC, hospitals should create policies aimed at patient safety as well as assume safety as the guiding axis of health management. To this end, the institutions should have the support of the Patient Safety Nucleus, which must promote and support the implementation of actions aimed at patient safety; define safety practices in accordance with current international and national recommendations; conditions and support the use of *checklist* early in its implementation[17].

In the SSC implementation process, the absence of effective leadership is one of the critical factors. In a study conducted to evaluate the effect of a strategy to improve adherence to SSC, the authors concluded that the strategy adopted that included the definition and involvement of leaders of each surgical discipline (surgery, anesthesia and nursing) can contribute to improve the adhesion and engagement of the team and highlighted as success factors the engagement of the leaderships[18].

Generally, to introduce the tool in the health services, the changes in the work process are carried out suddenly and without planning. In a study that analyzed data on the SSC implementation process, the authors identified that the hospitals adopted different actions in relation to plan-

ning, namely: the implementation process was planned with emphasis on strategies for introduction and integration of the tool; implementation with limited/no planning, i.e. the team was unaware of any structured approach to use; and method of implementation carried out in a imposing manner by the management of the hospital or Ministry of Health. As a result, the barriers that stood out in the organizational scope were the implementation without planning or imposition and an institutional culture resistant to change, especially by more experienced professionals[16]. Thus, it is recommended the involvement of the surgical team and planning of the gradual implementation, for example: initially, introduce the use of the SSC with a specific surgeon and specific operating room[12].

To understand the facilitators and barriers of SSC implementation from the user perspective, scholars conducted a systematic review of qualitative studies. The results indicated that the process of implementing the *checklist* is a complex social intervention that requires changes in the user's perspective (physicians and nurses) regarding the perception about SSC and patient safety, necessitating adjustments to the list integration in the team work flow. The factors that could facilitate or make difficult these changes were the design of the tool, fusion of the tool with existing processes, sense of belonging, that is, the list created or adapted to meet the needs of the team; education, training, lack of clarity in the guidelines that hindered the execution, commitment of the multidisciplinary team to the process, especially of the surgeons, to minimize the effects of the hierarchical context in the surgical room; on-site leadership to support doctors and nurses, organizational culture, communication, and teamwork[19].

Despite the beneficial potential, the use of checklists has important limitations and caveats that should be considered, since the *checklists* are considered to be a weak security barrier, vulnerable to standard deviation and can be naturally neglected. When a SSC stage is omitted, without manifestation contrary to the deviation by team members or other professionals involved, and losses are not identified for the patient, inappropriate use is easily accepted or institutionalized[20].

In health services, the implementation of SSC is a complex and challenging process, as it requires surgical teams to change behaviors and learn new habits[10]. These findings can help those involved in the SSC implementation process to consider the selection of interventions best suited to the local scenario[15].

To better support this process, education is recommended as a broader process under the triad: 1) informal conversation with each member of the surgical team, the dialogue aims to connect each professional with the idea and purpose of the SSC in order to request collaboration for use of the list, before the actual introduction into a surgical room; 2) to train each member of the surgical team prior to actual use, the approach includes an explanation of how to do, demonstrate, and provide an opportunity for the surgical team to thoroughly practice the check (use simulation). Training should occur prior to use in patients because during first use, surgical team members need to be confident about training and support received, and improper preparation may impair the progress of the surgical procedure. For feasibility of this step, team members can be instructed to train individually, in a group or complete surgical team; 3) continued training and in loco orientation, from the introduction of SSC in the operating room[12].

In countries with medium and low Human Development Index, as in Brazil, SSC is known, but its use is not yet universally promoted or implemented, indicating a substantial opportunity for educational strategies in defense of the use of this security tool. There are unique challenges in many of these countries due to the lack of infrastructure, equipment and trained personnel, which adds difficulties for the implementation of SSC. Therefore, it is recommended that the strategies selected should consider these additional barriers[1].

CONCLUSION

For nurses, the implementation of the *checklist* can bring benefits to the patient, with emphasis on promoting safety. For the team, the benefits consisted of improved communication and the use of the list as an opportunity for dialogue among professionals; and improving the quality of care was the main benefit factor related to the health service.

Regarding the facilitating aspects of the SSC implementation, the results presented a statistically significant difference, among the groups of nurses, in the items offering an educational program and acceptance by the surgeons. And, lack of administrative and managerial support, absence of patient safety nucleus, abrupt introduction of the list insurgical room, no prior planning and lack of education consisted of barriers.

Regarding the limitations, the study was conducted in two municipalities in the state of Paraná, therefore caution is advised in the generalization of the evidenced results, despite these municipalities paranaenses being considered the main reference in health care for the population of other cities in the region. Another limitation is the fact that only a professional category (nurses) is a participant in the research can be a bias of the results, because the SSC is a multiprofessional tool with the participation of surgeons, anes-

thesiologists, surgical instrumentators and nursing staff in the checking and, for this, it requires the participation of all those involved, from planning to evaluating results.

With regard to Nursing, the nurse plays an essential role in the movement to promote patient safety, especially in surgical care. It is believed that, in the field of education, this study brings contributions, because the evidence generated can subsidize the debate on patient safety in the scope of the training of nurses and in the context of health services through lifelong education, so that professionals aware that safe practices save lives and thereby incorporate them into their practice. In the field of research, the results of the present study made it possible to identify the benefits, facilitators and barriers in the implementation of SSC in the Brazilian reality and contribute to filling a knowledge gap in the national context.

In relation to care, the evidence generated can help in the elaboration of protocols related to the implementation and use of SSC that consider the critical factors involved in the process are adequate and compatible with the structural and organizational specificities of the national health services, with the purpose of enable the integration of this tool in the work process, improve team adherence and achieve the best results for the patient.

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