EVALUATION OF THE ADHERENCE TO THE SAFE SURGERY CHECKLIST AT THE PUBLIC UNIVERSITY HOSPITAL

Avaliação da adesão ao checklist de cirurgia segura em Hospital Universitário Público

La pertenencia a la evaluación de la lista de verificación de la seguridad quirúrgica en el Hospital de la Universidad Pública

Adriana Cristina Galbiatti Paminonde Elias[1], Denise Rodrigues Costa Schmidt[1], Christiane Sayuri Itu Yonekura[2], Alexsandro Oliveira Dias[3], Elizabeth Silva Ursi[4], Robertha Pickina Juvencio Silva[5], Vivian Biazon El Reda Feijo[6]

ABSTRACT: Objective: to evaluate the adherence to the checklist procedure in surgeries performed in a public teaching hospital and to identify the patient's profile regarding its use. **Method:** a descriptive study methodology was performed, which was conducted at the surgical ward of the *Hospital Universitário de Londrina*-PR from August to December 2014. Four hundred perioperative verification instruments were analyzed. **Results:** there was a predominance of male patients (55.5%), aged 21–40 years, and the predominant medical specialty was orthopedics. After 5 years of implementation and a second reformulation of the checklist, there was a considerable decrease in the number of unfilled instruments (blank), but there was an increase in the number of incomplete instruments. **Conclusion:** the adherence to the checklist needs to be improved to contribute to the reduction of adverse events, which may affect surgical patients and is a challenge for institutions and their staff.

Keywords: Patient Safety. Surgical Procedures, Operative. Nursing.

RESUMO: Objetivo: avaliar a adesão ao *checklist* em cirurgias realizadas em um hospital escola público, bem como identificar o perfil do paciente com a sua utilização. **Método:** estudo descritivo realizado no centro cirúrgico do Hospital Universitário de Londrina (PR), Brasil, nos meses de agosto a dezembro de 2014. Avaliou-se 400 instrumentos de verificação perioperatória. **Resultados:** houve predomínio dos pacientes do sexo masculino (55,5%), com idade entre 21 e 40 anos, e a clínica predominante foi ortopedia. Após cinco anos de implantação e segunda reformulação do *checklist*, houve diminuição considerável no número de instrumentos não preenchidos, porém um aumento no número de instrumentos incompletos. **Conclusão:** a adesão ao *checklist* necessita ser aprimorada para contribuir com a redução de eventos adversos aos pacientes cirúrgicos, e constitui-se como um desafio para instituição e equipe.

Palavras-chave: Segurança do paciente. Procedimentos Cirúrgicos Operatórios. Enfermagem.

RESUMEN: Objetivo: evaluar la adherencia a la lista de verificación en las cirugías realizadas en un hospital público de enseñanza, así como identificar el perfil del paciente con su uso. **Método:** estudio descriptivo, realizado en el centro quirúrgico del Hospital Universitario de Londrina (PR), Brasil, en los meses de agosto a diciembre de 2014. Se evaluó 400 instrumentos de verificación perioperatorias. **Resultados:** hubo un predominio de pacientes de sexo masculino (55,5%), con edades entre 21 y 40 años, y la especificidad clínica predominante fue la ortopedia. Después de cinco años de ejecución y de la segunda reformulación de la lista de control, hubo una considerable disminución en el número de instrumentos sin relleno (en blanco), pero un aumento en el número de instrumentos incompletos. **Conclusión:** Se debe prefeccionar la adhesión a la lista de verificación para contribuir a la reducción de eventos adversos a los pacientes quirúrgicos, y es un reto para la institución y el equipo.

Palabras clave: Seguridad del paciente. Procedimentos Quirúrgicos Operativos. Enfermería.

[1]Nurse. PhD in Nursing of the Surgical Center of Hospital Universitário de Londrina (HUL). E-mail: adrianapaelias@yahoo.com.br; denisecosta_schmidt@hotmail.com
[2]Nurse. Expert in Nursing. Head of the Surgical Center Division of HUL. E-mail: cyonekura@gmail.com
[3]Nurse. Doctoral student at the Ribeirão Preto School of Nursing, University of São Paulo. Hospital Risk Manager of HUL. E-mail: alexuel@bol.com.br.
Avenida Robert Koch, 60, Vila Operária. CEP: 86038-440. Londrina (PR), Brasil.
[4]Nurse. PhD in Nursing. Superintendent Director of HUL. E-mail: elizabethursi@uol.com.br
[5]Nursing Undergraduate Student of Faculdade Pitágoras de Londrina and intern in the Hospital Risk Management of HUL. E-mail: robhertapickina@hotmail.com
[6]Nurse. Master in Nursing. Nursing Director of HUL. E-mail: feijovivif@gmail.com
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INTRODUCTION

The World Health Organization (WHO) created, in 2004, the World Alliance for Patient Safety[1], with six action areas, one of which is to develop and socialize the knowledge and solutions found concerning patient safety.

According to the WHO, client security can be achieved through three complementary actions, which are: to prevent the occurrence of adverse events, to make them visible in case they occur, and to minimize their effects with effective interventions[2].

Given the importance of the safety issue in health care, the Nursing Board of Hospital *Universitário de Londrina* (HUL) has been developing, since 2009, a project on "Six International Goals for Patient Safety," which includes the correct surgery, procedure, and patient.

Quality in health care in highly complex procedures, such as surgery and use of surgical anesthetics, has been a constant concern worldwide owing to the high rates of adverse events and human error related to these procedures[3].

WHO developed the surgical checklist with the help of employees from different countries, guided by three principles: simplicity, wide applicability, and measurability of impact, allowing teams to follow efficiently the critical safety steps and, thereby, minimize the most common preventable risks, which endanger the lives and well-being of the surgical patients.

In 2009, an international multicenter study[4] showed a 36% reduction of complications and a 47% reduction of mortality in the surgical patients after implementation of the surgical checklist.

A survey conducted in 2010[5] reported that there was a decrease in the mortality rate owing to errors in surgery, and complications decreased from 35.2% to 24.3%; so, the checklist proposed by the international alliance not only impacted the result but also improved the communication between the surgical teams.

Therefore, a checklist deployment proposal was established by a group of nurses from the surgical center, which is in its second version, for safe surgery. This instrument is applied at the time of patient admission to the surgical center until their release to the medical–surgical ward or intensive care unit.

In Brazil, there is a lack of studies that examine the adherence to the use of checklists. Understanding the process of implementation and adherence to this method can inform about the barriers to its effective use and provide support for the necessary adjustments in order to adapt its use and ensure patient safety[6].

OBJECTIVE

To evaluate the adherence to the checklist procedure in elective surgery in a public teaching hospital and identify the surgical profile regarding its use.

METHOD

This is a descriptive study, conducted from August to December 2014, held at *Hospital Universitário de Londrina* (PR), Brazil, which is a public teaching hospital, with 313 beds and registered to the Unified Health System.

In 2009, the checklist was implemented in the surgical center through the articulation between this unit's management and nurses. Meetings were held to adapt the instrument, to emphasize the importance of the impact on the surgical team and in patient safety, and to organize the tool application logistics.

The instrument developed for the use in the institution is filled by professionals of the nursing team during the patient's stay in the unit (preanesthesia, operating room, and postanesthesia recovery), and it is an adaptation of the model established by WHO, in accordance with the characteristics of the public teaching hospital.

In October 2014, there was the need for a new educational training, because of the importance of the issue and of the admission of new employees in the surgical center.

The study sample accounted for 400 printed perioperative checklists. The inclusion criteria used were: elective and emergency surgeries and pediatric and adult patients. The exclusion criteria were: information whose records could not be found and patients who underwent emergency surgery or invasive procedure in the surgical center, with the form being filled in this situation.

To check the surgical profile of the sample, the following variables were considered: age, sex, and surgical specialty. Adherence indicators to the checklist were: complete filling, incomplete filling, and blank instrument.

For the assessment of the adherence of the complete checklist, we considered the 14 statements distributed into the preoperative (phase I: items 1–7), before skin incision (phase II: items 8–12), and the patient's release (phase III: items 13 and 14) phases. The completion of patient identification fields and surgery (patient label, procedure performed, date of surgery, and clinic and operating room) was also considered.

Phase I. Preoperative:
1. patient identification;
2. difficult airway / aspiration risk;
3. signed consent form;
4. patient aware of surgery to be performed;
5. surgical site;
6. surgical site marked; and
7. anesthetic safety check.

Phase II. Before the incision:
8. professor's presence in the operating room;
9. confirmation of the patient data by staff;
10. confirmation of the material and equipment;
11. presence of nurse; and
12. antibiotic prophylaxis.

Phase III. Patient's release:
13. identification of anatomical specimen and
14. postanesthetic recovery.

Phase IV. Signature of the professional who carried out the completion of the instrument.

Phase 1 was regarded as the evaluative method for adherence to the completion of the checklist, which accounted for the collection period of 200 checklists from August to September 2014. After further training of the nursing staff in the institution, which took place in late September of the current year, the authors initiated the collection of phase II in October and November.

It is noteworthy that the new collection period (phase II) occurred after a week of training of the surgical center professional, for understanding that they would be familiar with the information received. The same number of checklists from the previous stage was accounted.

Data were collected by an undergraduate nurse from the fourth year, previously trained. Disagreements were resolved by consensus during the evaluation by the authors. Data were analyzed descriptively, using tables and simple absolute percentages, and the software used was Microsoft Excel®, version 2007.

The study followed Resolution no. 466 / 12 of the National Health Council of the Ministry of Health, which rules on regulatory guidelines and standards for research involving humans. The project was assessed and approved by the Ethics Committee of the Hospital under study, under protocol no. 213 / 2014. The term of confidentiality and privacy regarding patient information was used in this study.

RESULTS

After 5 years of implementing and redesigning the checklist in the institution, this study reflected information about the adherence process to the instrument devised by WHO, a subject that is still not explored in the scientific literature in general, especially in the context of developing countries, such as Latin America.

Table 1 shows the sample distribution by surgical variables related to age, sex, and surgical specialty of the

Table 1. Characteristic of the sample according to the variables: age, sex, and surgical specialty

Variables	n	%
Age		
≤20 years	79	20
21–40 years	115	29
41–60 years	97	24
≥61 years	109	27
Sex		
Male	222	55
Female	178	45
Surgical specialties		
Orthopedics	88	22
Obstetrics	51	13
Surgical emergency room	43	11
Children's surgery	38	9
Urology	28	7
Vascular surgery	25	6.3
Neurosurgery	22	5.5
Digestive tract surgery	22	5.5
Gynecology	21	5.3
Otorhinolaryngology	20	5
Thoracic surgery	19	4.7
Head and neck surgery	7	1.7
Other medical specialties (ophthalmology, cardiology, and plastic surgery)	16	4
Total	400	100

procedure. There was a predominance of male patients (55.5%), aged between 21 and 40 years (29%), and the predominant specialty was orthopedics (22%). The average age of the patients was 39.9 years.

After the training, conducted by the nurses, of the nursing staffs of the surgical center, who perform the filling of the instrument daily, a decrease in the occurrence of blank instruments was observed. However, there was a considerable increase in the number of checklist with incomplete filling and a substantial increase of instruments filled completely in the collection period, as shown in Table 2.

Table 3 presents the number of instruments (checklists) filled incompletely, in phases I and II, according to its organizational structure (patient identification, steps 1, 2, 3, and 4). It was found that the items least filled in phase I are: "identification of the patient/surgery" and "preoperative". In phase II, "preoperative" and "patient's release" were the less-filled items.

Table 2. Quality of information on the safe surgery checklist

Adherence indicators	Phase I		Phase II	
	n	%	n	%
Complete filling	4	2	1	0.5
Incomplete filling	158	79	199	99.5
Blank instrument	38	19	0	0
Total	200	100	200	100

DISCUSSION

This investigation has enabled a range of useful information associated with the effective use of the checklist, which will create opportunities for the comprehensive incorporation of this technology in the institution under study, because it allows the measurement of the results on the patient's security that are pursued by the campaign "Safe Surgery Saves Lives" by WHO[1].

A study conducted in a large general hospital in Porto Alegre corroborates this study, as it was found that orthopedics was the most representative surgical specialty[7].

Table 2 showed that, after the training offered to the nursing staff on the importance of the safety checklist, although there was a decrease in the occurrence of blank instruments, there was also a significant increase in the number of incomplete instruments. Therefore, it is not enough that the institution imposes protocols, it is necessary that professionals make use of the tool and to understand its importance, which often goes unnoticed to those causing risks. Increasing adherence to best practices, conducting feedback, and continuous monitoring are essential for the efficiency and effectiveness of a comprehensive and safe care[8].

A study conducted in a large general teaching hospital in the city of Natal, RN, found poor compliance in completing the checklist in urological and gynecological surgeries. The study found the existence of the checklist in 60.8% of surgeries, and it is completely filled in 3.5% of them[6].

The new training offered to the professionals in the surgical center of the hospital under study was used as an

Table 3. Evolution of the sample of incomplete elective and emergency surgery checklists, evaluated by adherence to the World Health Organization instrument

	Phase I (n=158)				Phase II (n=199)			
	Complete		Incomplete		Complete		Incomplete	
	n	%	n	%	n	%	n	%
Patient and surgery identification	33	22.84	125	77.16	104	52.5	95	47.5
Preoperative (I)	13	10.49	145	89.51	64	32.5	135	67.5
Before the incision (II)	119	75.93	39	24.07	95	48	104	52
Patient's release (III)	78	48.62	80	51.38	46	23.5	153	76.5
Checklist carried out by (IV)	77	48.74	81	51.26	102	51.5	97	48.5

adherence strategy to the completion of the instrument, as it helps with safe practices when there are leadership structures and systems in place aimed at this goal[9].

In a study conducted in a large public hospital in São Paulo, the authors considered that the greatest barriers are: lack of staff training to mitigate potential errors and avoid them, the nonadherence of professionals to the protocol, and lack of commitment from the institution[10].

Studies show that a new instrument should be able to be the subject of training to the entire staff at the time of its implementation and cause individual perceptions among the members of the surgical team about the importance of each checklist item, which directly influences its implementation[10,11].

In a survey that evaluated the opinion of 39 professionals from a surgical team in São Paulo on the implementation of safe surgery checklists, it was shown that all the participants knew the instrument, 92.3% recognized its effectiveness, and 94.9% believed that the implementation of the checklist provided security for the staff itself[12].

The results shown in Table 3 reflect the concern of the institution in overcoming the cultural barrier for the application of the checklist, as it is in the process of compliance with the recent guideline of the National Program for Patient Safety of the Ministry of Health. This program aims to contribute to the improvement of health care throughout the country and proposes, among its main points, secure protocols for surgical and anesthetic procedures[13].

In another study conducted in eight hospitals in the United States after the adoption of the checklist, it showed a significant reduction in mortality and complications arising from poor surgical practices, suggesting that it promoted improvement in the safety of the surgical patient, owing to changes in the system and in the individual behavior of the surgical team[14].

Recently, the patient became more argumentative and demanding, forcing a change in the attitude for service providers; so, the managers and the health-care team should adopt postures that value a preventive attitude toward the security incidents that can be triggered in the client's care during their hospitalization[15].

With the emergence of studies on security incidents in health, awareness of patient safety has increased in recent years, and several successful initiatives are being carried out in hospitals that are committed to improve a patient's safety[14].

International organizations[5,17] recommend the adoption of the checklist in the surgical center, aiming to comply with the basic criteria for quality care, enabling the staff to implement strategies that result in continuous improvement in all the stages of the procedure[16,18].

It appears that health education and ongoing supervision of professionals are essential in order to provide personal and professional growth and that actions that value the safety culture in health institutions result in improvement in quality indicators[15,19].

CONCLUSION

This study allowed the conclusion that the expansion of safety in surgical procedures with investments in the knowledge of professionals in relation to surgery may reflect in the improvement of indicators after their deployment. The adoption of the checklist does not require high cost demand, but there are still difficulties in its application by surgical teams of the institution under study.

The purpose of the checklist is to ensure that key security elements are incorporated into the routine of the surgical center, thus complying with the recommendations by the International Patient Safety Goals, which aims to strengthen daily practices that promote better communication and work between teams regardless of the characteristics of the hospital that carries out such assistance.

It is worth mentioning the importance of one change in the organizational culture of the managers and professionals in various surgical specialties in pointing out the need for correct patient identification, for the complete filling of the items listed by the instrument, and especially for the validation of data with the signature of the professional, as they are essential elements for the safety of patients and professionals.

The study has limitations because only a single institution, a public teaching hospital, was studied. However, it is believed that this investigation can assist in the understanding of the challenges in the checklist deployment process, including other hospitals in various regions of the country, whose barriers to the process may be similar.

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