

## NURSING CARE IN SURGICAL PATIENT SAFETY: AN INTEGRATIVE REVIEW

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**ABSTRACT:** The objective was to analyze the scientific findings on nurses' work in the promotion of surgical patient safety, to identify the risks and appoint solutions to improve care. An integrative review was undertaken in three health databases in January and February 2016. Twenty-eight articles were selected that complied with the inclusion criteria, in three thematic categories: Reflection and Assessment of the care offered to surgical patients, Main errors and weaknesses that put the safety of surgical patients at risk, and Tools and Strategies to favor the quality of patient care and safety. The theme patient safety needs to be discussed better and put in practice, as the development of further research with this approach can contribute to improvements in surgical patient care.

**DESCRIPTORS:** Patient safety; Surgical nursing; Surgicenter; Perioperative nursing; Nursing care.

### ASSISTÊNCIA DE ENFERMAGEM NA SEGURANÇA DO PACIENTE CIRÚRGICO: REVISÃO INTEGRATIVA

**RESUMO:** O estudo objetivou analisar os achados científicos acerca da atuação do enfermeiro na promoção da segurança do paciente cirúrgico, identificar riscos e apontar soluções para a melhoria da assistência. É uma revisão integrativa realizada em três bases de dados da saúde nos meses de janeiro e fevereiro de 2016. Foram selecionados 28 artigos que se enquadraram nos critérios de inclusão estabelecidos, formando três categorias temáticas: Reflexão e Avaliação acerca da assistência ofertada ao paciente cirúrgico, Principais erros e fragilidades que põem em risco a segurança do paciente cirúrgico, e Instrumentos e Estratégias para favorecer a qualidade da assistência e segurança do paciente. Percebe-se que a temática da segurança do paciente necessita ser melhor discutida e posta em prática, visto que o desenvolvimento de mais estudos com essa abordagem pode contribuir para melhorias na assistência ao paciente cirúrgico.

**DESCRIPTORIOS:** Segurança do paciente; Enfermagem cirúrgica; Centro cirúrgico; Enfermagem perioperatória; Cuidados de enfermagem.

### ATENCIÓN DE ENFERMERÍA EN LA SEGURIDAD DEL PACIENTE QUIRÚRGICO: UNA REVISIÓN INTEGRADORA

**RESUMEN:** La finalidad del estudio fue analizar los hallazgos científicos acerca de la actuación del enfermero en la promoción de la seguridad del paciente quirúrgico, identificar riesgos e indicar soluciones para la mejora de la atención. Fue llevada a cabo una revisión integradora en tres bases de datos de la salud en los meses de enero y febrero del 2016. Fueron elegidos 28 artículos que cumplieron con los criterios de inclusión establecidos, constituyendo tres categorías temáticas: Reflexión y Evaluación acerca de la atención ofertada al paciente quirúrgico, Principales errores y fragilidades que ponen en riesgo la seguridad del paciente quirúrgico, e Instrumentos y Estrategias para favorecer la calidad de la atención y seguridad del paciente. Se percibe que el tema de la seguridad del paciente necesita ser mejor discutida y puesta en práctica, ya que el desarrollo de otros estudios con esa aproximación puede contribuir para mejoras en la atención al paciente quirúrgico.

**DESCRIPTORIOS:** Seguridad del paciente; Enfermería quirúrgica; Centro quirúrgico; Enfermería perioperatoria; Atención de enfermería.

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**Received:** 01/03/2016

**Finalized:** 21/09/2016

## ● INTRODUCTION

The technological and scientific advances in the health area have entailed a significant increase in the number of surgical interventions, which are often accomplished in unsafe conditions, interfering in the promotion and recovery of the patients' health. Hence, the patients' insecurity and vulnerability has considerably increased in the scientific and care contexts, as the occurrence of adverse events is enhanced in hospital institutions, representing a severe public health problem<sup>(1)</sup>.

For the sake of patient safety, efforts are made to reduce and/or mitigate acts related to the healthcare system that are considered insecure, as well as to use the best practices with a view to achieving the expected outcomes. It is further highlighted that safe care directly and closely influences the quality of care delivery to the population; patients, in turn, have gained awareness of their rights, establishing criteria that reflect their choices and attitudes towards the health services, thus aiming to avoid the occurrence of adverse events, to make them visible if they occur and to minimize their effects through effective interventions<sup>(1)</sup>.

In hospital, the Surgical Center (SC) is the place where most adverse events related to patients' health happen. Their cause is multifactorial and attributed to the complexity of the procedures, the interaction of the interdisciplinary teams and work under pressure as, although the surgical interventions are part of health care, contributing to the preventions of physical integrity problems and the loss of lives, they are considerably associated with risks of complications and death<sup>(2-3)</sup>.

It is estimated that, each year, among 234 million surgeries that take place all over the world, two million deaths occur and 7 million patients are victims of post-surgical complications, 50% of which could have been avoided. Among the high-complexity surgeries in developed countries, complication rates range between 3 and 16% and, for every 300 patients admitted, one dies<sup>(1,4)</sup>.

In its second Global Campaign, Safe Surgery Saves Lives, one of the objectives of the World Patient Safety Alliance was to strengthen the surgical safety practices established by the World Health Organization (WHO)<sup>(5)</sup>. The program addressed important safety issues, such as inappropriate anesthetic safety practices, avoidable surgical infections and lack of communication among surgical team members<sup>(6)</sup>.

Activities in the operating room involve complex tasks, full of variation and uncertainty, exercised in environmental conditions dominated by agility, precision and stress. Therefore, these activities require increased attention from the professionals in the processes involving the patient, especially concerning nurses, in view of the close contact with the patients in their care actions<sup>(7)</sup>.

Therefore, one of the responsibilities of nurses is to inform surgical patients about their health problem, the surgical procedure and, mainly, how they can participate in their postoperative recovery, giving pre and postoperative advice in clear language, with respect for their knowledge and culture<sup>(8)</sup>.

Educational activities are an inherent part of the nurses' role, as they spend day and night with the patient, allowing them to promote space for orientations and empowerment for their self-care, with guidance on the procedures and care, besides promoting health and preventing potential complications. This situation turns this professional into the element of the health team with the greatest opportunity to guide the patient<sup>(8)</sup>.

In addition, nursing's contribution at the start, during and after the end of the surgery are clearly important, for example by certifying the client's identity and consent, the place and the procedure; by verifying the vital signs and maintaining the patient monitored and with venous access; eliminating the presence of any risk, such as blood loss, airway difficulties, allergic reactions and postoperative complications; among other functions<sup>(1)</sup>.

On the other hand, identifying situations that remit to possible errors in perioperative care for surgical patients is the main challenge for nurses. The following are highlighted: failure of anesthetic equipment, lack of trained staff, surgical team working under pressure, use of new technologies with limited knowledge, among others. This context draws attention to expand the nurse's look in search of new knowledge, aiming for patient safety at the surgical center and in view of the constant occurrence of risks, errors and accidents, revealing the need to implement changes<sup>(9)</sup>.

Hence, scientific, care and cultural changes in surgical patient safety are crucial for the implementation of efficient measures to prevent and reduce risks and adverse events. A culture needs to be constructed that

understands the values, beliefs and standards of what is important in an institution and what patient safety-related attitudes and behaviors are necessary, rewarded and expected<sup>(10)</sup>.

Therefore, the implementation of the safety culture at health institutions, specifically at the Surgical Center, can be directly associated with the reduction of adverse events and mortality, implying improvements in the quality of health care for the patients.

Departing from this premise, the constant updated in the professional context of patient safety and WHO's concerns with safe surgeries for patients in the Unified Health System (SUS), the intention is to grant the patient a positive recovery process, protected against adverse events related to unsafe and unprepared care.

Thus, the objective in this study was to analyze current scientific findings on the nurses' activities in the promotion of surgical patient safety, aiming to identify risks and appoint conducts that favor care free from avoidable damage.

## ● METHOD

This study reports on an integrative review developed in January and February 2016 to answer the following guiding question: What is available in recent scientific literature on nurses' activities in surgical patient safety?

Therefore, a search of scientific articles was undertaken in the databases Scientific Electronic Library Online (SciELO), *Base de Dados de Enfermagem* (BDENF) and *Literatura Latino-Americana e do Caribe em Ciências da Saúde* (LILACS); using the following descriptors: *Segurança do Paciente* (Patient Safety), *Enfermagem Cirúrgica* (Surgical Nursing), *Centro Cirúrgico* (Surgery Center), *Enfermagem Perioperatória* (Perioperative Nursing).

Before starting the search for the articles, these descriptors were verified by consulting the *Descritores em Ciências da Saúde* (DeCS) and the Medical Subject Headings (MeSH) and were crossed using the indicator AND, as follows: *Segurança do Paciente AND Enfermagem Cirúrgica*, *Segurança do Paciente AND Centro Cirúrgico*, *Segurança do Paciente AND Centro Cirúrgico AND Enfermagem Perioperatória e Segurança do Paciente AND Enfermagem Cirúrgica*.

The following inclusion criteria were established: articles fully available, published between 2011 and 2016, in Portuguese, English and Spanish, and which answered the guiding question. Books, manuals, theses, dissertations, monographs and case and experience reports were excluded, as well as reviews.

The authors defined the following phases to develop the integrative review: elaboration of the guiding question; search/sampling in the literature and data collection (by three independent reviewers); critical analysis of the studies included; discussion of the results and presentation of the integrative review<sup>(11)</sup>. Those phases were used in this research to achieve the proposed objective.

## ● RESULTS

In the initial search to develop this integrative review, 280 publications were found in the databases LILACS, BDENF and SciELO, 252 of which were excluded because they did not discuss the theme under analysis. Hence, 28 publications were selected for this review, which complied with the inclusion criteria and offered relevant contributions to the discussion proposed in the study.

In Table 1, the results found in the databases LILACS, BDENF and SciELO are displayed, according to the crossing of the descriptors cited earlier.

Table 1 – Articles found and selected in the databases LILACS, BDENF and SciELO about surgical patient safety in health care, 2011 till 2016. Recife, PE, Brazil, 2016 (continues)

Descriptors Patient safety AND Surgical nursing			
Database	LILACS	BDENF	SciELO

Articles found	19	9	110
Articles selected	2	4	7
<b>Descriptors Patient safety AND Surgery center</b>			
Database	LILACS	BDENF	SciELO
Articles found	19	15	68
Articles selected	6	4	8
<b>Descriptors Patient safety AND Surgery center AND Perioperative nursing</b>			
Database	LILACS	BDENF	SciELO
Articles found	3	1	25
Articles selected	2	1	10
<b>Descriptors Patient safety AND Surgical nursing AND Preoperative nursing</b>			
Database	LILACS	BDENF	SciELO
Articles found	4	4	5
Articles selected	1	2	5

According to the analysis of the selected articles, most of the articles, nine (32.1%) were published in 2013, as displayed in Table 2.

Table 2 – Distribution of articles in number and percentage according to year of publication. Recife, PE, Brazil, 2016

Year of publication	Number of articles	Percentage of articles %
2015	3	10.7
2014	6	21.4
2013	9	32.1
2012	3	10.7
2011	7	25.1

As regards the authors' educational background, it was observed that 90.4% (95) came from nursing, followed by nine (8.5%) from medicine and one (0.9%) from aerospace science.

Based on the study, the articles were analyzed and grouped in thematic categories. The number of articles in each thematic category is described in Table 3.

Table 3 – Number of articles in each thematic category according to themes addressed. Recife, PE, Brazil, 2016

Category	Number of articles selected
Reflection and Assessment of care offered to surgical patients	10
Main errors and weaknesses that jeopardize the safety of surgical patients	7
Instruments and Strategies to favor care quality and patient safety	11
Total number of articles selected	28

## ● DISCUSSION

Considering that patient safety involves the reduction and/or mitigation of acts that are considered unsafe at the Surgery Center, as well as the use of the best practices with a view to achieving the expected outcomes, after the full reading of the 28 articles, three thematic categories could be identified, according to the similarity

of the themes addressed in each study: Reflection and Assessment of the care offered to surgical patients, Main errors and weaknesses jeopardizing the safety of surgical patients, and Instruments and Strategies to favor the quality of patient care and safety.

### **Reflection and assessment of the care offered to surgical patients**

In any of the surgery phases, care delivery to surgical patients implies a series of actions professionals should pay attention to in order to maintain patient safety. Pre-, intra- and postoperative care determines the quality of care delivery and the recovery of patients submitted to surgical procedures. Studies appointed the observation of the intraoperative phase in the preparation procedure of the surgery room, in which procedures like the safe preparation of drugs and hemoderivatives and the verification of surgical material and equipment interferes directly in patient safety<sup>(7)</sup>.

Besides the intraoperative phase, in the postoperative phase, some safety attitudes can be implemented for the sake of patient safety; what nursing is concerned, the application of all steps of the nursing process is considered an effective method to guarantee not only the observation of signs and symptoms at the bedside, but also comprehensive and appropriate care until the surgical patient's complete rehabilitation<sup>(12)</sup>.

In the preoperative phase, factors were identified that interfere in the patient's positive coping with the surgical procedures, among which anxiety stands out. Anxiety was frequently associated with the surgical procedure itself, as well as with the expectation and concern with relatives. In that sense, the professionals can use light technological resources to address the anxiety, such as encouragement for the procedure, details on care actions to be performed and joint work with the relatives, strengthening faith and hope<sup>(13)</sup>.

In this context, the importance of nurses' work is highlighted in approaching the patients with their spirituality, without personal preferences for religious creeds, considering that this device is essential for the patients' better coping with the surgical procedure. In addition, the tightening of the nurse/patient interface<sup>(13)</sup> is highlighted, in line with the findings, showing more nursing authors who discuss, through publications, safer practices at the Surgery Center for the sake of high-quality care.

In that sense, strengthening the safety culture is essential to guarantee an appropriate environment to the patient with minimal risks. In the assessment of the safety culture, studies have appointed frailties in the professionals' perception of a favorable patient safety climate in the development of their activities in the surgery environment<sup>(10)</sup>.

Concerning the patients' perceptions of perioperative care, it was evidenced that communication, dialogue, information, respect and preoperative orientation underlie the relation between health professional and patient. Although the patients mentioned these as strong points, they are also perceived as weaknesses, as the limited importance the professionals attribute to the orientations before the surgery procedure, dialogue, unannounced delays and postponements were listed as factors that make this relation more difficult<sup>(14)</sup>.

The communication among multidisciplinary health team members was also considered an influential factor of patient safety. When communication is ineffective, the team members expose themselves to an environment favorable to error and to discontinued care. No single professional category can be held accountable for patient safety. Instead, the entire team is accountable for preserving and promoting this safety<sup>(15)</sup>.

### **Main errors and weaknesses that jeopardize the safety of surgical patients**

The errors and adverse events that affect surgical patients can entail countless consequences, including permanent damage. The errors can involve material, technological and human resources. With regard to human resources, a factor that influences patient safety is the concentration on the procedure that is being performed. Studies have appointed that, on average, 60 interruptions or distractions happen during the surgery, in most cases triggered by the movement of people in the room. In more severe patients, submitted to damage control, the incidence of distractions was even higher. The mean noise level in the surgery room was very high, with noise close to that of a hairdryer<sup>(16)</sup>.

What the occurrence of adverse events is concerned, in one study, 42 events were notified. Specifically

considering events related to drug administration, the prevalence of incidents was estimated at 48%. The factors related to their occurrence included hospitalization for four days or longer, prescription of three or more drugs per day and accomplishment of surgical interventions<sup>(17)</sup>.

In the intraoperative environment, countless weaknesses put the patient at risk, particularly the occurrence of skin lesions during the procedure. In one study, skin lesions were observed at the end of the anesthetic-surgical procedure in 74% of the patients. In these cases, the non-use of resources as protectors for body maintenance, prolonged duration of the surgery and obesity or overweight were highlighted as risk factors for the occurrence of this type of lesions<sup>(18)</sup>.

Another frailty, also evidenced in that research, was related to the stress among the surgical nursing professionals. In one study, it was verified that administrative and staff management activities were considered most stressful. In the results, 50% of the interviewed nurses presented medium to high levels of stress and mentioned problem solving as a mechanism to relieve this problem<sup>(19)</sup>.

### **Instruments and strategies to favor the quality of patient care and safety**

In view of various weaknesses and potential risks found in the studies, we also highlight possible strategies and instruments used to reassure the patient and guarantee the quality of care delivery. Frequent reference is made to the safe surgery protocol established by the World Health Organization (WHO), reread by different authors. The use of the checklist system presents specific actions at three moments in the anesthesia-surgery (before the anesthetic induction, before the start of the surgery and before the patient leaves the surgery room). The implementation of the checklist permits the achievement of the correct procedure, by the correct team, on the correct patient, with a view to the establishment of safe surgical processes<sup>(1)</sup>.

Despite WHO's recommendation to use this protocol and although most hospital institutions have institutionalized the application of the checklist, the actual compliance with this practice remains below what is expected to influence the patient safety. Studies have found no significant compliance with the checklist in the verification of fasting information, abdominal epilation, absence of nail polish and ornaments, identification of the patient and surgical site, availability of blood, verification of laterality, presentation of the team and counting of material in the room<sup>(20-21)</sup>.

Despite the non-compliance, after the use, the teams positively assessed the benefits of verifying the protocol, indicating greater safety during the procedure. Nevertheless, the study participants did not indicate perceived improvements in the interpersonal communication in the multidisciplinary health team, despite the use of the checklist<sup>(22)</sup>.

Another mechanism we can mention as beneficial to minimize the possible adverse events involving surgical patients is effective communication. With regard to nursing, it was perceived that, when nursing professionals were present with information and care, the clients indicated high levels of satisfaction and lower levels of anxiety related to the surgical procedure. On the other hand, when the nursing professional takes distance from the patient or does not provide appropriate information, feelings of fear, insecurity and anxiety are commonly mentioned<sup>(23)</sup>.

Therefore, the assistance and clinical nature of nursing work needs to be increasingly emphasized, so that these professionals can execute activities close to the patients, thus acknowledging pertinent needs and enabling them to promote individualized and comprehensive care to surgical patients, which also interferes in the acknowledgement and valuation of the profession<sup>(23)</sup>.

The access to technical and updated information of care delivery to surgical patients in the postoperative phase was also assessed as a valuable tool that positively influences patient safety. In a study that assessed nursing professionals' satisfaction with information available on a website about post-anesthesia nursing care, this medium received 99.67% of approval from the users, being yet another way to access the content in order to favor safer care for post-anesthesia patients<sup>(24)</sup>.

The range of the studies analyzed can be highlighted as a limitation, revealing the importance of more in-depth reflection to get to know different realities, with a view to supporting a more detailed analysis.

## ● FINAL CONSIDERATIONS

At the end of the study, a long road remains ahead towards effective safety for perioperative patients, in view of the many bottlenecks that somehow impair their safety. The following are highlighted: errors in the set-up of the surgery room; non-implementation of all steps in the nursing process; absence of dialogue between patient and team about fears, anxiety, doubts on the postoperative phase; lack of comprehension in the multiprofessional team; excessive movement and noise in the surgery room; non-application of the checklist recommended by WHO.

In conclusion, the reflections on patient safety and the processes at the Surgery Center need to be deepened, demanding further studies on the theme with a view to new discussions and the search for best practices. The engagement of the entire medical and nursing team is fundamental for high-quality and safe care to surgical patients, trying to eliminate possible risks and errors that are frequent.

The surgical nurses' competences should be understood beyond the organizational practices, focusing on the relation with patient safety.

Concerning limitations in the development of this research, the small number of articles selected is appointed, due to the non-availability of some findings in the full version. Nevertheless, at the end of this study, after achieving the objective, the main errors in the nurses' work in care delivery to surgical patients were identified, leaving to be desired in patient safety, and solutions were suggested to improve care.

In view of the above, this research is expected to contribute to the improvement and development of scientific knowledge on nurses' activities in patient safety.

Thus, this study is intended to turn into a tool to disseminate this theme, encouraging further research, in view not only of its scientific relevance, but also of the social relevance of the better care offered to surgical patients.

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