

SURGICAL SAFETY IN CESAREAN SECTION: INTEGRATIVE REVIEW

Lara Mabelle Milfont Boeckmann¹, Maria Cristina Soares Rodrigues²

¹Nurse. Doctoral Student in Nursing. University of Brasília. Brasília, Federal District, Brazil.

²Nurse. Post-Doctor in Health Sciences. Professor of the Nursing Department University of Brasília. Brasília, Federal District, Brazil.

ABSTRACT: Our goal was to gather and analyze scientific publications on surgical safety in cesarean deliveries through the following question: What is the scientific evidence for surgical safety in cesarean deliveries in the last 10 years? An integrative review of the literature was carried out in seven electronic databases between October and December 2014. We consulted the US National Library of Medicine, the Cumulative Index of Nursing and Allied Health Literature, Latin American and Caribbean Health Sciences Literature, the Medical Literature analysis and Retrieval System Online, the Cochrane Library, and the Nursing Database and Scientific Electronic Library Online. Four hundred and sixty-three articles were found, of which 11 were selected for analysis, and two central themes emerged: promotion of patient safety in cesarean deliveries by means of the surgical safety checklist and recommendations to improve quality of care in cesarean deliveries. Finally, few publications with high levels of evidence were found, which suggests the need for further studies to be carried out, particularly by nurses.

DESCRIPTORS: Quality of health care, Patient Safety, Cesarean Delivery, Checklist.

SEGURANÇA CIRÚRGICA NA CESÁREA: REVISÃO INTEGRATIVA

RESUMO: Objetivou-se reunir e analisar publicações científicas sobre segurança cirúrgica na cesárea com a seguinte questão: quais as evidências científicas sobre segurança cirúrgica na cesárea nos últimos dez anos? Realizou-se revisão integrativa da literatura, em sete bases eletrônicas, de outubro a dezembro de 2014: *The US National Library of Medicine*, *Cumulative Index to Nursing and Allied Health Literature*, *Literatura Latino-Americana e do Caribe em Ciências da Saúde*, *Medical Literature analysis and Retrieval System Online*, *Cochrane Library*, Base de dados em Enfermagem e *Scientific Eletronic Library Online*. Foram encontrados 463 artigos, dos quais 11 foram selecionados para análise, emergindo dois eixos temáticos: promoção da segurança da paciente na cesárea por meio da lista de verificação de segurança cirúrgica e recomendações para melhorar a qualidade da assistência na cesárea. Para concluir, foram encontradas poucas publicações com alto nível de evidência, havendo a necessidade da realização de mais estudos, notadamente por enfermeiros.

DESCRIPTORES: Qualidade da Assistência à Saúde; Segurança do Paciente; Cesárea; Lista de Checagem.

SEGURIDAD QUIRÚRGICA EN LA CESÁREA: REVISIÓN INTEGRATIVA

RESUMEN: Estudio cuyo objetivo fue reunir y analizar publicaciones científicas acerca de la seguridad quirúrgica en la cesárea con la siguiente cuestión: ¿Cuáles son las evidencias científicas sobre seguridad quirúrgica en la cesárea en los últimos diez años? Se realizó revisión integrativa de la literatura, en siete bases electrónicas, de octubre a diciembre de 2014: *The US National Library of Medicine*, *Cumulative Index to Nursing and Allied Health Literature*, *Literatura Latinoamericana y del Caribe en Ciencias de la Salud*, *Medical Literature Analysis and Retrieval System Online*, *Cochrane Library*, Base de datos en Enfermería y *Scientific Eletronic Library Online*. Fueron encontrados 463 artículos, de los cuales 11 fueron seleccionados para análisis, resultando dos ejes temáticos: promoción de la seguridad de la paciente en la cesárea por medio de la lista de verificación de seguridad quirúrgica y recomendaciones para mejorar la cualidad de la asistencia en la cesárea. Para concluir, fueron encontradas pocas publicaciones con alto nivel de evidencia, siendo necesaria la realización de más estudios, de modo especial por enfermeros.

DESCRIPTORES: Calidad de la Asistencia a la Salud; Seguridad del Paciente; Cesárea; Lista de Verificación.

Corresponding author:

Lara Mabelle Milfont Boeckmann
Campus Universitário Darcy Ribeiro
Avenida SN, Asa Norte - 70910-900 - Brasília, DF, Brasil
E-mail: laramilfont@gmail.com

Received: 27/04/2015

Finalized: 05/11/2015

INTRODUCTION

The improvement of surgical techniques, innovation, and technological progress have increased the number of cesarean deliveries performed in many parts of the world. This evolution has caused cesarean deliveries to become one of the most widespread surgeries. However, all surgical interventions have risks, among which we can mention hemorrhage, postpartum infections, and anesthesia complications, as well as a higher probability of complications resulting from repeated cesarean sections⁽¹⁻²⁾.

National data indicate that approximately three million births take place every year, and most are the result of cesarean deliveries. The use of this type of surgical intervention increased in the country between 1994 and 2010. In 1994, the national rate was 32%, whereas in 2010 it reached 52%. There is also a growing trend in countries like the Netherlands and the United States⁽³⁻⁵⁾. Nevertheless, the cesarean delivery implies a greater exposure to risks that are inherent to the surgery itself.

In order to minimize risks, discussions have been held in different countries concerning safety protocols for all kinds of surgery. However, it is no longer possible for health services to work properly without investing in quality, prevention of damage to health, humanization, management, and treatment provided to users and the professionals involved⁽⁶⁾.

In this sense, discussions about patient safety have assumed a prominent role, since many harmful events during surgery, also called adverse events (AE), can be prevented or corrected by means of conduct that ensures good practices based on scientific evidence⁽⁷⁾.

The World Health Organization (WHO) defines an AE as an event that arises out of care provided to patients that results in damage to them. Every year, around 234 million surgeries are performed in the world and approximately seven million patients face some kind of incident, of which two million result in death, while evidence shows that 50% of these events could have been prevented⁽⁸⁾.

In a survey carried out in two Brazilian hospitals, of the 1,103 patients studied, 56 had suffered an AE. Infections associated with health care and surgical and/or anesthetic complications represented 44.6% of the incidents, the highest percentage in relation to other factors⁽⁹⁾. Another

study conducted in 2008 revealed that one in every 150 hospitalized patients dies as a result of an incident, and nearly two-thirds of AEs were related to surgery⁽¹⁰⁾.

Other reasons can be added to the occurrence of adverse effects in surgeries, such as poor communication and distraction within the multi-professional team, failure to check patients' identity and materials during procedures, among others, and these are important indicators that increase the likelihood of mistakes⁽¹¹⁾.

The implementation of a safety culture, the practice of accurate health records, a discussion about the circumstances in which AEs occurred, as well as rethinking professional and organizational conduct before incidents, are the path to be followed in order to change this reality within health institutions⁽¹²⁾.

In view of the above, there is a global trend toward adopting practices based on scientific evidence, as recommended internationally by the WHO. Thus, pressure to achieve tangible improvements in safety and quality has been growing among health system leaders and policy makers, who are searching for the best way to organize services and balance the demand⁽¹³⁾.

In order to adopt strategies that affect patient safety in the surgical field, in 2008 the WHO published the Surgical Safety Checklist (SSC), created in compliance with standards of scientific evidence accepted worldwide, with the possibility of being adapted to the reality of all services and in different countries⁽⁸⁾.

The application of the SSC showed satisfactory results regarding the decrease in complications and surgical risks. In a pilot study, carried out before and after the intervention of the WHO, which used the checklist in eight hospitals from eight cities, the results showed a decrease in the number of deaths and in complication rates among patients who underwent different types of surgery⁽¹⁴⁾.

In 2011, the American College of Obstetricians and Gynecologists created a brief surgical safety checklist for cesarean sections, an initiative that included several safety items, such as a request for informed consent for cesarean sections, the indication and number of fetal scans performed, among others⁽¹⁵⁾.

Although it may seem simplistic, evidence supports the fact that patients benefit from well-designed checklists if they are effectively

used. An effective implementation requires training and changes in the safety culture, as well as establishing new routines for control, measurement, and regular feedback of results⁽¹⁶⁾.

In Brazil, the implementation of an adapted SSC in maternity brought significant benefits which resulted in the adherence of managers to the decision of using the checklist as a mandatory routine in elective gynecological surgeries. As a result, awareness campaigns were launched for the surgical center staff, by means of educational meetings, in order to prepare them for the use of these checklists⁽¹⁷⁾.

Thus, the mentioned studies highlight the importance of surgical safety, because it may offer potential benefits to improve care services provided. From that point of view, there has been interest in gathering scientific evidence about surgical safety in cesarean section, as it is one of the most performed surgeries in the world and there is a current trend of readjustment of obstetric care services around safety practices for patients.

Our goal was to gather and analyze scientific publications on surgical safety in cesarean deliveries through the following guiding question: What is the scientific evidence for surgical safety in cesarean deliveries in the last 10 years?

METHOD

This study is an integrative review of the literature whose goal was to carefully investigate the available scientific documentation on surgical safety in cesarean deliveries. An integrative review of the literature enables the construction of a broader analysis and contributes to discussions about research methods and results, which makes it easier to include evidence that supports conducts or decision-making and thus provides critical knowledge⁽¹⁸⁻¹⁹⁾.

In order to carry out the review, the steps followed were: definition of the guiding question; the search for scientific publications in electronic databases; data collection; critical analysis of the data; a discussion of results; and presentation of the integrative review⁽¹⁹⁾.

The inclusion criteria were: articles published in Portuguese, English, or Spanish, in national and international databases, reviewed by peers, which addressed the topic "surgical safety in cesarean deliveries," with no delimitation of category, available online and in full, over the period 2005-

2014. Excluded from the study were publications that were not available in full and/or in a language that was not defined in the inclusion criteria and/or were not within the period established for research and/or did not address the topic.

Throughout the search of articles, seven electronic databases were consulted: The US National Library of Medicine; the Cumulative Index to Nursing and Allied Health Literature (CINAHL); the Latin American and Caribbean Health Sciences Literature (LILACS); the Medical Literature analysis and Retrieval System Online (MEDLINE); the Cochrane Library; the Nursing Database (BDENF); and the Scientific Electronic Library Online (SciELO). Research was completed in October, November, and December 2014.

The following descriptors and their combinations were used, with Boolean operators "and" in Portuguese, Spanish, and English, respectively: "*segurança do paciente*" and "*cesárea*" and "*lista de checagem*" and "*qualidade da assistência à saúde*"; "patient safety" and "cesarean section" and "checklist" and "quality of health care"; "*seguridad del paciente*" and "*cesárea*" and "*lista de verificación*" and "*calidad de la atención de salud*."

The analysis and synthesis of data extracted from the articles were done in a descriptive manner, which allowed us to observe, count, describe, and classify data with the purpose of gathering knowledge produced on the topic explored in the review⁽¹⁹⁾.

In order to process and categorize the results, a hierarchical system of levels of evidence was used: Level I – evidence from systematic reviews or meta-analysis of controlled and randomized clinical trials or resulting from clinical guidelines based on systematic reviews of controlled and randomized clinical trials; Level II – evidence from at least one controlled and randomized clinical trial; Level III – evidence obtained from clinical trials with no randomization; Level IV – cohort and case-control studies; Level V – systematic review of descriptive and qualitative studies; Level VI – evidence from a descriptive and/or qualitative study; and Level VII – opinion of experts or report of specialist committees⁽²⁰⁾.

RESULTS

In the survey indexed in electronic databases, 463 articles with a summary were found. After a thorough reading of titles and summaries of

journals, and after the application of inclusion and exclusion criteria, 452 articles were excluded for not complying with the topic, within the defined period of time or languages, or for not being available in full. Eleven publications were selected, carefully read, and analyzed, as shown in Table 1.

The synthesis of studies analyzed is presented in Charts 1 and 2, with the analysis distributed in ascending order by year of publication, using 11 variables that were chosen from items contained in an instrument validated for an integrative review: title; author; author's professional field; year; journal; type of study; database; language; country; results; and level of evidence⁽²¹⁾.

According to the analysis of the mentioned variables, it was seen that the electronic database PubMed stood out from the others in terms of most publications, in the total of six manuscripts that adhered to the topic, all of them found in English and coming from the United States, England, and Canada, followed by a publication from Nigeria, one from the Netherlands, and another from Spain.

Two articles were found in the CINAHL database, in English, one from the US and the other from the United Kingdom, followed by an article found in the Cochrane library, and one from Spain, in the LILACS, in Spanish. It is worth highlighting the absence of Brazilian publications on the topic.

Regarding the professional field of the authors, all of them were from the medical field, and specialized in either obstetrics and gynecology, anesthesiology, surgery, or molecular pathology. Worthy of note is that no works published by nurses were found.

As for the year of publication, it was found that most articles were published within the last five years, and only two of the 11 articles were published in 2006 and 2008 respectively.

Regarding the variables "results" and "level of evidence," we saw that five of the 11 articles selected contained level VII evidence. That is, they involved the opinion of specialists about the topic and letters to the editor, followed by a systematic review of a descriptive study containing level V evidence, two descriptive studies of "before-after" design containing level VI evidence, and only two controlled and randomized studies containing levels I and II evidence.

For the purpose of interpretation, analysis, and

Table 1 - Publications distributed by quantity, according to the electronic database consulted. Brasília, DF, Brazil, 2014

Electronic Database	Number of Articles Found	Number of Selected Articles
Cochrane Library	3	1
PubMed	348	6
SciELO	6	0
LILACS	34	1
MEDLINE	49	1
CINAHL	23	2
BDENF	0	0
Total	463	11

discussion, results were divided into two central themes: promotion of patient safety in cesarean deliveries by means of the surgical safety checklist and recommendations to improve quality of care in cesarean deliveries.

DISCUSSION

Promotion of patient safety in cesarean deliveries by means of the surgical safety checklist

The creation of the SSC for obstetrics has proved to be effective in the reduction of harm and AEs; it showed an improvement in the communication within the surgery staff and made practices safer with the adoption of scientifically based interventions, providing more safety not only to patients but also to professionals who perform these duties⁽²²⁻²⁵⁾.

A study carried out by means of a questionnaire applied to professionals on the surgery staff and to patients before and after the introduction of the SSC in an obstetrics center in the United Kingdom. The findings showed significant progress in the comprehensive actions of the surgery staff in the fulfillment of the surgery steps, effectively improving inter-professional communication and reducing patients' anxiety in relation to the care provided⁽²⁶⁾.

Likewise, adherence to the quality criteria adopted in the form of protocols in 12 hospitals in the Netherlands indicated progress in the communication between the staff and patients. Additionally, safety measures proposed in the protocol resulted in more adequate recommendations for cesarean deliveries, and consequently in the reduction of unnecessary

Chart 1 - Publications distributed by analysis variable. Brasília, DF, Brazil, 2014

Publication Titles	Author/Year Professional Field	Journal/ Type of study	Database/Language/ Country
Can items on an aviation-style checklist for preparation of cesarean delivery under general anesthesia present a threat for patient safety?	Schwarz SKW, 2006. Anesthesiology/ Obstetrics/Gynecology	Anesth Analg. Letters to the editor	PubMed / English/ Netherlands
Improved outcomes, fewer cesarean deliveries, and reduced litigation: results of a new paradigm in patient safety	Clark SL et al., 2008. Obstetrics/Gynecology	Am J Obstet Gynecol. Specialists' opinion	CINAHL/ English/ United States
Patient Safety in Obstetrics and Gynecology	American College of Obstetricians & Gynecologists, 2009. Obstetrics/Gynecology	Gynecol Obstet. Specialists' opinion	PubMed / English/ United States
Patient Safety in the Surgical Environment	American College of Obstetricians & Gynecologists, 2010. Obstetrics/Gynecology	Gynecol Obstet. Specialists' opinion	PubMed / English/ United States
The introduction of a surgical safety checklist in a tertiary referral obstetric centre	Kearns RJ et al., 2011. Anesthesiology	BMJ Qual Saf. Descriptive study	CINAHL/ English/ United Kingdom
Does use of a World Health Organization obstetric safe surgery checklist improve communication between obstetricians and anesthetists?	Mohammed A et al., 2012. Surgery/Obstetrics Gynecology	BJOG. Descriptive study	PubMed / English/ England
Protecting patient safety in resource-poor settings	Galadanci HS, 2013. Obstetrics/Gynecology	Best Pract Res Clin Obstet Gynaecol. Systematic Review	PubMed / English/ Nigeria
Surgical Safety Checklist in Obstetrics and Gynecology	Singh SS et al., 2013. Obstetrics/Gynecology	J Obstet Gynaecol Can. Reflexion	PubMed / English/ Canada
Implementation of recommendations from international evidence-based guidelines on cesarean sections in the Netherlands	Melman et al., 2013. Obstetrics/ Gynecology	Implement Sci. Randomized controlled clinical trial	MEDLINE/ English/ Netherlands
Checklist for cesarean and vaginal deliveries	Rosado JP et al., 2013. Pediatrics	Medwave. Letter to editors	LILACS/ Spanish/ Spain
Antibiotic prophylaxis versus no prophylaxis for preventing infection after cesarean section	Smaill FM, Grivell RM, 2014. Pathology and Molecular Medicine	Cochrane Libr Systematic review	Cochrane Library/ English/ United Kingdom

prescriptions⁽²⁷⁾.

Poor communication among the surgery staff reflects a certain disconnection of activities and this is a major challenge for health institutions in the implementation of a safety culture⁽²⁸⁾.

Hesitation to speak can contribute to errors and incidents in the health care field. It is essential that professionals express their concern over patient safety, that they are aware of the risks and therefore perform their duties in a confident manner⁽²⁹⁾.

Therefore, it was seen that it is extremely effective and necessary to create and use checklists for maternal health, and this procedure must be applied in line with the characteristics of each health service⁽³⁰⁾.

Worthy of note is that checklists are available in different situations of health care. Evidence supports that patients benefit from these instruments when they are used by the surgery staff in a conscious and effective manner. However, implementation requires training and a continuous evaluation of results⁽¹⁶⁾.

Chart 2 - Publications distributed by analysis variable. Brasília, DF, Brazil, 2014

Authors	Results	Level of evidence
Schwarz SKW	The author reports that in a recent systematic review there are strong recommendations to remove potentially harmful drugs, in cases of general anesthesia for cesarean deliveries, in order to minimize errors and damages.	VII
Clark SL et al.	Concern with patient safety, by means of the application of checklists in obstetrics, has obtained satisfactory results that lead to a decrease in cesarean deliveries, litigations and improvement of quality of care.	VII
American College of Obstetricians & Gynecologists	It defines the objectives for patient safety, which involves communication, safe medication practices, creation of a committee to promote a safety culture and avoid surgical errors.	VII
American College of Obstetricians & Gynecologists	The need for protocols for surgical delivery is pointed out, since it reduces the possibility of errors in cases of obstetric emergencies, such as blood transfusion, among others.	VII
Kearns et al.	After the introduction of the checklist at the obstetric center, there were significant improvements in staff communication and a decrease of anxiety in patients.	VI
Mohammed A et al.	Study data revealed that after the introduction of the WHO checklist communication between obstetricians and anesthesiologists improved significantly.	VI
Galadanci HS	The study revealed that, in order to improve patient safety in developing countries, it is necessary to improve the quality of service infrastructure and health care processes.	V
Singh SS et al.	It revealed the importance of recommendations for the implementation of an adapted WHO checklist, for all procedures of cesarean deliveries oriented toward the mother and the newborn, in order to promote quality and surgical safety.	VII
Melman et al.	Quality criteria adopted in the form of protocols in hospitals showed a greater safety and a decrease in the number of cesarean deliveries, improving obstetric care.	II
Rosado, JP	The author proposes a model in the form of a checklist, for both normal and cesarean deliveries, as it has proved to be efficient in several studies.	VII
Smaill FM & Grivell RM	The study proved that the prophylactic use of antibiotics prior to the cesarean delivery reduces the incidence of infection.	I

In studies conducted in several hospitals and countries with different economic situations, the use of surgery safety checklists has been successful; however, difficulties in implementation are observed in terms of acceptance by the surgical staff⁽³¹⁾.

In that sense, as leaders of the unit, nurses may adopt this tool, which will bring benefits to professionals and patients, in addition to encouraging everyone to participate in this initiative.

Recommendations to improve the quality of care in cesarean deliveries

In order to promote the use of protocols, patient safety programs, and checklists in health services, it is important for researchers to reach a consensus about patient safety and related areas,

because conduct should be scientifically based, as in studies that involve the safe use of medication and adequate procedures in cesarean deliveries. Prophylaxis of infections for cesarean deliveries is one of those procedures and has been fulfilled according to the existing protocols in different countries⁽³²⁾.

In a systematic review of a randomized controlled study, two groups of women were studied; one group was given antibiotics before a cesarean delivery and the other only placebo. Results pointed to a significant decrease in infections after delivery in women who took antibiotics, which became a global recommendation for quality of care in cesarean deliveries⁽³³⁾.

In another study, it was shown that there are strong indicators to remove potentially harmful

drugs in cases of general anesthesia for cesarean deliveries, in order to minimize errors and harm⁽²²⁾.

Other issues that involve cesarean deliveries are taken into consideration, such as patient identification, planning for body fluids and airways, planning of anesthesia, proper management of the mother and the newborn, training of all members of the surgical staff, and making sure that materials and equipment are functioning properly⁽²³⁾.

In hospitals in Nigeria that had adequate human resources and proper equipment, the mortality rate appeared to be lower. In contrast, those with a poor infrastructure had a higher maternal mortality. The study concluded that, without improvements in health unit infrastructure, interventions in maternal health will not have a positive impact. Therefore, developing countries are faced with these challenges, and this requires the improvement of services provided to these populations⁽³⁴⁾.

Problems related to surgical safety are well recognized in both developed and developing countries. In the latter, factors that contribute to difficulties are: poor infrastructure and inadequate equipment, supplies and drugs; badly organized health services; failure to control infections; lack of training for staff; and limited resources allocated to health care⁽³⁵⁾.

The need for protocols for cesarean deliveries is pointed out, because they reduce the possibility of errors in cases of obstetric emergencies, such as blood transfusion during delivery, among others. It is also essential to establish safe medication practices and to foster the creation of committees that promote a safety culture within health units⁽³⁶⁻³⁷⁾.

Improving maternal outcomes and promoting quality of care in terms of surgical safety implies not only actions that support patient safety, but also a decrease in AEs and harm to patients' health, as well as the prevention of possible litigation resulting from mistakes made by the surgical staff that can be properly prevented⁽³⁸⁾.

CONCLUSIONS

Promoting surgical safety in cesarean deliveries implies achieving quality in maternal health care. Studies showed that all actions that involve patient safety in cesarean deliveries are intended to establish rules, protocols, and programs that raise awareness among health professionals about

the importance of creating a safety culture. Such protocols may be presented in the form of surgical safety checklists adapted to the particularities of obstetrics in different settings.

Moreover, results obtained by the analyzed studies indicated significant changes in communication between professionals of the surgical team following the recommended changes in conduct. In addition, these advances reduced the number of AEs in obstetrics.

Another aspect that was highlighted refers to the scarcity of articles on the topic, in that it appears to be at an early stage in relation to more strict levels of evidence. Above all, there was a noticeable absence of studies conducted by nurses.

In that sense, it is essential for nurses, as leaders and drivers of the nursing team, to contribute significantly to conducting studies on the topic. In this way they can contribute to the improvement of actions in health and promote the internalization of a surgical safety culture in cesarean deliveries for all parties involved, especially in this moment of change in the unified health system, as a result of the worldwide movement for patient safety and quality of health care services.

REFERENCES

1. Flores PL, González GJP, Trejo JF, Vega GL, Cabrera CEP, Campos A, et al. Risk factors in cesarean section. *Ginecol Obstet Mex.* [Internet] 2008; 76(7) [acesso em 02 out 2015]. Disponível: <http://www.ncbi.nlm.nih.gov/pubmed/18798440>
2. Wiley J, Sons INC. Debo tener una cesárea? *J Midwifery Womens Health.* [Internet] 2013; 58(4) [acesso em 27 Jun 2015]. Disponível: <http://onlinelibrary.wiley.com/doi/10.1111/jmwh.12048/epdf>
3. Ministério da Saúde (BR). Secretaria de Vigilância em Saúde. Uma análise da situação de saúde e a vigilância da saúde da mulher. Brasília: Ministério da Saúde; 2012.
4. Betrán AP, Meriáldi M, Lauer JA, Bing-Shun W, Thomas J, Van Look P, et al. Rates of caesarean section: analysis of global, regional and national estimates. *Pediatric and Perinatal Epidemiology.* [Internet] 2007; (21) [acesso em 10 out 2014]. Disponível: <http://onlinelibrary.wiley.com/doi/10.1111/j.1365-3016.2007.00786.x/epdf>
5. MacDorman M, Declercq E, Menacker F. Recent trends in cesarean delivery in the United States. *Clin. perinatol.* [Internet] 2011; 38(2) [acesso em 11 out 2014]. Disponível: <http://www.cdc.gov/nchs/data/databriefs/db35.pdf>

6. Manzo BF, Brito MJM, Corrêa AR. Implications of hospital accreditation on the everyday lives of healthcare professionals. *Rev. Esc. Enferm. USP*. [Internet] 2012;46(2) [acesso em 11 out 2014]. Disponível: <http://dx.doi.org/10.1590/S0080-62342012000200017>
7. Vendramini RCR, da Silva EA, Ferreira KASL, Possari JF, Baia WRM. Patient safety in oncology surgery: experience of the São Paulo State Cancer Institute. *Rev. Esc. Enferm. USP*. [Internet] 2010; 44(3) [acesso em 15 out 2014]. Disponível: <http://dx.doi.org/10.1590/S0080-62342010000300039>
8. World Health Organization (WHO). World alliance for patient safety. Guidelines for safety surgery. Geneva: World Health Organization; 2008.
9. Mendes W, Martins M, Pavão ALB, Moura MLO, Travassos C. The feature of preventable adverse events in hospitals in the State of Rio de Janeiro, Brazil. *Rev Assoc Med Bras*. [Internet] 2013; 59(5) [acesso em 10 out 2014]. Disponível: <http://dx.doi.org/10.1016/j.ramb.2013.03.002>
10. de Vries EM, Ramrattan M.A, Smorenburg SM, Gouma DJ, Boermeester MA. The incidence and nature of in-hospital adverse events: a systematic review. *Qual Saf Health Care*. [Internet] 2008; 17(3) [acesso em 21 nov 2014]. Disponível: <https://dx.doi.org/10.1136/qshc.2007.023622>
11. Bohomol E, Tartali JAA. Adverse effects in surgical patients: knowledge of the nursing professional. *Acta Paul. Enferm.* [Internet] 2013; 26(4) [acesso em 21 nov 2014]. Disponível: <http://dx.doi.org/10.1590/S0103-21002013000400012>
12. Paranaguá TT, Bezerra AL, Silva AE, Azevedo Filho FM. Prevalence of no harm incidents and adverse events in a surgical clinic. *Acta paul. Enferm.* [Internet] 2013; 26(3) [acesso em 17 nov 2014]. Disponível: <http://dx.doi.org/10.1590/S0103-21002013000300009>
13. Driver TH, Katz PP, Trupin L, Wachter RM. Responding to clinicians who fail to follow patient safety practices: perceptions of physicians, nurses, trainees, and patients. *J Hosp Med*. [Internet] 2014; 9(2) [acesso em 22 nov 2014]. Disponível: <http://onlinelibrary.wiley.com/doi/10.1002/jhm.2136/epdf>
14. Haynes AB, Weiser TG, William R, Berry WR, Stuart R, Lipsitz SC et al. A surgical safety checklist to reduce morbidity and mortality in a global population. *N. Engl. J. Med.* [Internet] 2009; 360(5) [acesso em 15 dez 2014]. Disponível: <https://dx.doi.org/10.1056/NEJMsa0810119>
15. American College of Obstetricians and Gynecologists (ACOG). Patient safety checklist n.º 3: scheduling planned cesarean delivery. *Gynecol Obstet*. [Internet] 2011; 118(6). [acesso em 20 ago 2015]. Disponível: <https://dx.doi.org/10.1097/AOG.0b013e31823ed20d>
16. Walker A, Reshamwalla S, Wilson IH. Surgical safety checklists: do they improve outcomes? *Br. J. Anaesth.* [Internet] 2012; 109(1) [acesso em 20 ago 2015]. Disponível: <http://bj.a.oxfordjournals.org/content/109/1/47.full.pdf+html>
17. De Freitas MR, Antunes AG, Lopes BNA, Fernandes FDC, Monte LDC, Gama ZASG. Assessment of adherence to the WHO surgical safety checklist in urological and gynecological surgeries at two teaching hospitals in Natal, Rio Grande do Norte State, Brazil. *Cad. Saúde Pública* [Internet] 2014; 30(1) [acesso em 16 dez 2014]. Disponível: <http://dx.doi.org/10.1590/0102-311X00184612>
18. Mendes KDS, Silveira RCCP, Galvão CM. Integrative literature review: a research method to incorporate evidence in health care and nursing. *Texto Contexto Enferm.* [Internet] 2008; 17(4) [acesso em 13 dez 2014]. Disponível: <http://dx.doi.org/10.1590/S0104-07072008000400018>
19. Souza MT, Silva MD, Carvalho R. Revisão integrativa: o que é e como fazer? *Einstein*. [Internet] 2010; 8 Suppl 1 [acesso em 11 nov 2014]. Disponível: http://www.astresmetodologias.com/material/O_que_e_RIL.pdf
20. Melnyk BM, Fineout-Overholt E. Evidence-based practice in nursing & healthcare: a guide to best practice. 2nd ed. Philadelphia: Lamp; 2012.
21. Ursi ES, Galvão CM. Prevenção de lesões de pele no perioperatório: revisão integrativa da literatura. *Rev. Latino-Am. Enferm.* [Internet] 2006; 14(1) [acesso em 12 nov 2014]. Disponível: <http://www.scielo.br/pdf/rlae/v14n1/v14n1a17.pdf>
22. Schwarz SKW. Can itens on aviation-style checklist for preparation of cesarean delivery under general anesthesia present a threat for patient safety? [Letters]. *Anesth Analg*. [Internet] 2006; 102(3) [acesso em 12 nov 2014]. Disponível: <https://dx.doi.org/10.1213/01.ANE.0000190877.56380.FE>
23. Singh SS, Mehra N, Hopkins L, Leyland N, Wolfman W, Allaire C, et al. Surgical safety checklist in obstetrics and gynaecology. *J Obstet Gynaecol Can.* [Internet] 2013; 35 Suppl 1 [acesso em 13 dez 2014]. Disponível: <http://sogc.org/wp-content/uploads/2013/04/JOGC-Jan2013-CPG286-ENG-Online.pdf>
24. Mohammed A, Wu J, Biggs T, Ofili-Yebovi D, Cox M, Pacquette S, et al. Does use of a world health organization obstetric safe surgery checklist improve communication between obstetricians and anaesthetists? A retrospective study of 389 caesarean sections. *BJOG*. [Internet] 2012; 120 [acesso em 13 dez 2014]. Disponível: <http://onlinelibrary.wiley.com/doi/10.1111/1471-0528.12041/epdf>
25. Rosado JP. Lista de verificación para cesáreas y partos. [Carta a los editores]. *Medwave*. [Internet]

2013; 13(2) [acesso em 13 dez 2014]. Disponível: <https://dx.doi.org/10.5867/medwave.e5629>

26. Kearns RJ, Uppal V, Bonner J, Robertson J, Daniel M, McGrady EM. The introduction of a surgical safety checklist in a tertiary referral obstetric centre. *BMJ Qual Saf.* [Internet] 2011; 20(9) [acesso em 13 dez 2014]. Disponível: <https://dx.doi.org/10.1136/bmjqs.2010.050179>

27. Melmann, Schoorel ENC, Dirksen C, Kwee A, Smits L, De Boer F, et al. Simple: implementation of recommendations from international evidence-based guidelines on caesarean sections in the Netherlands. Protocol for a controlled before and after study. *Implement Sci.* [Internet] 2013; (3) [acesso em 13 dez 2014]. Disponível: <https://dx.doi.org/10.1186/1748-5908-8-3>

28. Cauduro FLF, Sarquis LM, Sarquis LMM, Cruz EDA. Safety culture among surgical center professionals. *Cogitare enferm.* [Internet] 2015; 20(1) [acesso em 22 ago 2015]. Disponível: <http://ojs.c3sl.ufpr.br/ojs2/index.php/cogitare/article/view/36645/24860>

29. Okuyama A, Wagner C, Bijnen B. Speaking up for patient safety by hospital-based health care professionals: a literature review. *BMC Health Serv Res.* [Internet] 2014; 14(61) [acesso em 23 dez 2014]. Disponível: <https://dx.doi.org/10.1186/1472-6963-14-61>

30. Hang D O. Evaluating of primary outcomes W.H.O surgical safety checklist 2009 application in an obstetrics and gynecology hospital of Vietnam. *Am J Infect Control.* [Internet] 2012; 40(5) [acesso em 24 dez 2014]. Disponível: <https://dx.doi.org/10.1016/j.ajic.2012.04.231>

31. Pancieri AP, Santos BP, Avila MAG, Braga EM. Checklist de cirurgia segura: análise da segurança e comunicação das equipes de um hospital escola. *Rev. Gaúcha Enferm.* [Internet] 2013; 34(1) [acesso em 24 dez 2014]. Disponível: <https://dx.doi.org/10.1590/S1983-14472013000100009>

32. Costantine M, Longo M, Wen T, Hankins GDV, Saade GR. Timing of perioperative antibiotics for cesarean section: A meta-analysis. *Am J Obstet Gynecol.* [Internet] 2007; 197(6) [acesso em 24 dez 2014]. Disponível: <https://dx.doi.org/10.1016/j.ajog.2007.10.250>

33. Smaill FM, Grivell RM. Antibiotic prophylaxis versus no prophylaxis for preventing infection after cesarean section (Cochrane Review). *The Cochrane Library.* [Internet] 2014; 10 [acesso em 24 dez 2014]. Disponível: <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD007482.pub3/epdf>.

34. Galadanci HS. Protecting patient safety in resource-poor settings. *Best Pract Res Clin Obstet Gynaecol.* [Internet] 2013; 27(4) [acesso em 12 nov 2014].

Disponível: <http://www.sciencedirect.com/science/article/pii/S1521693413000370>

35. World Health Organization (WHO). More than words. Conceptual framework for the international classification for patient safety Version 1.1. Geneva: World Health Organization; 2009.

36. American College of Obstetricians and Gynecologists (ACOG). Committee Opinion. No 447 Patient Safety in Obstetrics and Gynecology. *Obstet Gynecol.* [Internet] 2009; 114 [acesso em 12 nov 2014]. Disponível: <https://dx.doi.org/10.1097/AOG.0b013e3181c6f90e>

37. American College of Obstetricians and Gynecologists (ACOG). Committee opinion No.464. Patient Safety in the Surgical Environment. *Obstet Gynecol.* [Internet] 2010; 116 [acesso em 12 nov 2014]. Disponível: <https://dx.doi.org/10.1097/AOG.0b013e3181f69b22>

38. Clark SL, Belfort MA, Byrum SL, Meyers JA, Perlin JB. Improved outcomes, fewer caesarean deliveries, and reduced litigation: results of a new paradigm in patient safety. *Am J Obstet Gynecol.* [Internet] 2008; 199 [acesso em 12 nov 2014]. Disponível: <https://dx.doi.org/10.1016/j.ajog.2008.02.031>