

SAFE AND EFFECTIVE NURSING CARE: ASSESSMENT OF SURGICAL RISKS IN PERIOPERATIVE CARE OF ELDERLY PATIENTS

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ABSTRACT: The present study aimed to examine the use of scales for assessment of surgical risks for elderly patients in the perioperative period. It involves a critical analysis of the principles of patient safety and care provided to elderly individuals undergoing surgical procedures, since nurses perform a comprehensive assessment in order to identify risk factors and prevent surgical complications. Search of scientific literature was performed in July and August 2015. The results obtained indicated that scales for predicting risks are patient care technologies that should be used by nurses in the perioperative period, in order to ensure a safe surgery. It is concluded that these scales can be used in the daily practice of nurses, through the establishment of an individualized care plan. Nursing should use this approach and contribute to the production of knowledge under this perspective, in order to implement interventions based on scientific evidence.

DESCRIPTORS: Nursing; Patient safety; Elderly; Perioperative period.

ASSISTÊNCIA DE ENFERMAGEM SEGURA E QUALIFICADA: AVALIAÇÃO DO RISCO CIRÚRGICO NO CUIDADO PERIOPERATÓRIO AO IDOSO

RESUMO: Objetivou-se discutir o uso de escalas para avaliar o risco cirúrgico de idosos no período perioperatório. Trata-se de comentário crítico fundamentado nos princípios da segurança do paciente e no cuidado à pessoa idosa submetida a procedimento cirúrgico uma vez que o enfermeiro realiza avaliação global, identificando os fatores de risco e prevenindo complicações cirúrgicas. A busca na literatura científica foi realizada entre os meses de julho e agosto de 2015. Os resultados evidenciam que escalas preditoras são tecnologias de cuidado que devem ser utilizadas pelos enfermeiros no cuidado ao idoso no período perioperatório com foco na cirurgia segura. Conclui-se que as escalas para avaliação de risco cirúrgico apresentadas podem ser incorporadas à prática cotidiana de cuidado dos enfermeiros, mediante o estabelecimento de plano de cuidados individualizado. A Enfermagem precisa instrumentalizar-se nesse processo e contribuir para a produção do conhecimento nesta perspectiva, a fim de fundamentar e implementar intervenções baseadas em evidências científicas.

DESCRIPTORIOS: Enfermagem; Segurança do paciente; Idoso; Período perioperatório.

ASISTENCIA DE ENFERMERÍA SEGURA Y CUALIFICADA: EVALUACIÓN DEL RIESGO QUIRÚRGICO EN EL CUIDADO PERIOPERATORIO AL ANCIANO

RESUMEN: Fue objetivo del estudio discutir el uso de escalas para evaluar el riesgo quirúrgico de ancianos en el periodo perioperatorio. Es un comentario crítico fundamentado en los principios de la seguridad del paciente y en el cuidado a la persona mayor sometida a procedimiento quirúrgico, considerando que el enfermero realiza evaluación global, identificando los factores de riesgo y preveniendo complicaciones quirúrgicas. La búsqueda en la literatura científica fue realizada entre los meses de julio y agosto de 2015. Los resultados muestran que escalas predictoras son tecnologías de cuidado que deben ser utilizadas por los enfermeros en el cuidado al anciano en el periodo perioperatorio con foco en la cirugía segura. Se concluye que las escalas para evaluación de riesgo quirúrgico presentadas pueden ser incorporadas a la práctica cotidiana de cuidado de los enfermeros, por medio del establecimiento de planes de cuidados individualizados. La Enfermería necesita de instrumentalización en ese proceso, así como contribuir para la producción del conocimiento en esta perspectiva, para fundamentar y implementar intervenciones basadas en evidencias científicas.

DESCRIPTORIOS: Enfermería; Seguridad del paciente; Anciano; Periodo perioperatorio.

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● INTRODUCTION

Surgical interventions in elderly patients are becoming more frequent due to population aging and increase in surgical resolution morbidities. Thus, acute exacerbations and chronic complications associated to aging-related changes are essential factors to be considered in the perioperative period⁽¹⁻²⁾. The complexity of the surgical environment and the risks inherent to surgery are domains that reflect the need for adequate organization to ensure safety in patient care⁽³⁾.

Nurses play a key role in this regard, since nursing care may help providing a better perioperative period with fewer complications and longer survival. Efficient resolutive care is provided ensuring patient, safety thanks to nursing technical expertise and commitment with systemic actions, in an attempt to reduce undesired outcomes and prevent complications⁽⁴⁾.

The incidence of perioperative complications is directly related to age, presence of comorbidities and surgical urgency. Consequently, elderly individuals are more likely to morbimortality, requiring greater attention from health professionals^(1,5-6). It should be noted that the elderly constitute a heterogeneous group, especially today when the concept of functional age is closely related with biological aging, which varies among individuals⁽⁷⁾.

Therefore, scales for assessment of perioperative risk are used by the health team who provide care to elderly. These tools allow determining the risk of postoperative complications for the patients⁽¹⁾.

Some scales were examined and used in this assessment of prognostic implications of surgical procedures⁽¹⁾. However, as they are not focused on elderly patients, other instruments should be simultaneously used for a more comprehensive understanding of the patient's clinical status.

Thus, the present study aimed to examine the use of scales for assessment of surgical risk in elderly patients, during the perioperative period, with a glimpse on comprehensive, safe and efficient nursing care.

● METHOD

Critical analysis understood as a critical-reflective and argumentative approach⁽⁸⁾. Thus, between July and August 2015, a literature search was conducted to identify studies on scales for assessment of surgical risks. Descriptors of risk assessment and perioperative care were used to search databases *Literatura Latino-americana e do Caribe em Ciências da Saúde* (LILACS) and Medical Literature Analysis and Retrieval System Online (MedLine) were the following descriptors. After the literature search, the studies were individually assessed, with focus on the type of risk assessed and weighing of each scale. Subsequently, the scales were summarized in a chart and their use for elderly in perioperative care was carefully examined.

● RESULTS

Several scales for assessment of surgical risk with prognostic implications of the surgical procedure are available, but none of them individually covers all the risks and care associated to elderly patients⁽¹⁾. Chart 1 shows the main scales identified in this study.

For a comprehensive assessment of elderly in perioperative care, nurses must be able to simultaneously administer several scales. Figure 1 includes the scales used to identify the most common surgical risks.

Chart 1 – Scales for assessment of perioperative risks. Florianópolis, SC, Brasil, 2016 (continues)

Assessed Risk	Instrument Code	Source
Risk of general complications	E1 – Goldman Index	Goldman L, Caldera DL, Nussbaum SR, Southwick FS, Krogstad D, Murray B, et al. Multifactorial index of cardiac risk in noncardiac surgical procedures. <i>N Engl J Med.</i> 1977;297(16):845-50 ⁽⁹⁾ .
	E2 - American Society of Anesthesiologists ASA	Owens William D. American Society of Anesthesiologists. Physical Status Classification System Is Not a Risk Classification System. <i>Anesthesiologist.</i> 2001;94(2):378 ⁽¹⁰⁾ .
Cardiac risk factors	E3 – Detsky Index	Detsky AS, Abrams HB, McLaughlin JR, Drucker DJ, Sasson Z, Johnston N, et. al. Predicting cardiac complications in patients undergoing noncardiac surgery. <i>J Gen Int Med.</i> 1986;1(4):211-9 ⁽¹¹⁾ .
	E4 – Risk stratification of the American College of Cardiology e pela American Heart Association	Antman E, Bassand JP, Klein W, Ohman M, Sendon JLL, Rydén L, et al. Myocardial infarction redefined - a consensus document of The Joint European Society of Cardiology/American College of Cardiology Committee for the redefinition of myocardial infarction. <i>J Am CollCardiol.</i> 2009;36(3):959-69 ⁽¹²⁾ .
Risk of Deep Vein Thrombosis (DVT) and Pulmonary Embolism (PE)	E5 – Program of Perioperative Risk Assessment in Elderly (PROAPI)	Sitta MC, Machado NA, Apolinario D, Leme DEG. Avaliação perioperatória do idoso. <i>Geriatrics & Gerontologia.</i> 2008;2(2):86-94 ⁽¹³⁾ .
Risk of pulmonary complications	E6 – Multifactorial Risk Index for Predicting Postoperative Respiratory Failure	Faresin SM, Barros JA, Beppu OS, Peres CA, Atallah AN. Aplicabilidade da escala de Torrington e Henderson. <i>RevAssocMed Bras.</i> 2000;46(2):159-65 ⁽¹⁴⁾ .
Risk of cognitive impairment	E7 - MMSE (Mini Mental State Examination)	Folstein MF, Folstein SE, McHugh PR. Mini-mental state: a practical method for grading the cognitive state of patients for the clinician. <i>J Psychiatric Res.</i> 1975;(12):189-98 ⁽¹⁵⁾ .
Risk of pressure ulcer (PU)	E8 – Escala de Braden (Braden Scale)	Bergstrom N, Braden BJ, Laguzza A, Holman V. The Braden Scale for predicting pressure sore risk. <i>Nurs Res.</i> 1987;36(4):205-10 ⁽¹⁶⁾ .
	E9 – Escala de Norton (Norton Scale)	Kwong E, Pang S, Wong T, Ho J, Shao-Ling X, Li-jun T. Predicting pressure ulcer risk with the modified Braden, Braden, and Norton scales in acute care hospitals in Mainland China. <i>ApplNurs Res.</i> 2005;18(2):122-8 ⁽¹⁷⁾ .
	E10 – Escala de Gosnell (Gosnell Scale)	Meesterberends E, Haffens R, Lohrmann C, de Wit R. Pressure ulcer guideline development and dissemination in Europe. <i>J ClinNurs.</i> 2010;19(11-12):1495-1503 ⁽¹⁸⁾ .
	E11 – Escala de Waterlow (Waterlow Scale)	Sayar S, Turgut S, Dogan H, Ekici A, Yurtsever S, Demirkan F, et al. Incidence of pressure ulcers in intensive care unit patients at risk according to the Waterlow scale and factors influencing the development of pressure ulcers. <i>J ClinNurs.</i> 2007;18(5):765-74 ⁽¹⁹⁾ .
Risk of falls	E12 – Escala de Morse (Morse Scale)	Morse JM, Morse RM, Tylko SJ. Development of a scale to identify the fall-prone patient. <i>Adaptação cultural e linguística, 2010. Centro de Estudos e Investigação em Saúde da Universidade de Coimbra (CEISUC). Canadian Journal on Aging.</i> 1989;(8):366-77 ⁽²⁰⁾ .
	E13 – Escala de Schmid (Schmid Scale)	Schmid NA. Reducing patients falls: A research-based comprehensive fall prevention program. <i>Military Medicine.</i> 1990;155(2):202-7 ⁽²¹⁾ .
	E14 – Escala de Downton (Downton Scale)	Summary of the updated American Geriatrics Society/British Geriatrics Society clinical practice guideline for prevention of falls in older persons. <i>Journal of the American Geriatrics Society.</i> 2011;59(1):148-57 ⁽²²⁾ .
	E15 – Escala de Hendrich II (Hendrich II Scale)	Hendrich AL, Bender SP, Nyhuis A. Validation of the Hendrich II Fall Risk Model: a large concurrent case/control study of hospitalized patients. <i>AppliedNursingResearch.</i> 2003;16(1):9-21 ⁽²³⁾ .

Risk of pain	E16 - Escala de Estimativa Numérica (Numeric Rating Scale - NRS)	Sousa FF, Silva JA. A métrica da dor (dormetria): problemas teóricos e metodológicos. Revista DOR. 2005;6(1):469-513 ⁽²⁴⁾ .
	E17 - Escala Analógica Visual (Visual Analogue Scale)	Collins SL, Moore RA, Mcquay HJ. The visual analogue pain intensity scale What is moderate pain in millimeters? Pain. 1997;(72):95-7 ⁽²⁵⁾ .
	E18 - Escalas de Categorias Verbais ou Visuais (Verbal - Visual Rating Scales)	Pimenta CI. Fundamentos teóricos da dor e de sua avaliação. In: Carvalho MMJ. (Org). Dor: um estudo multidisciplinar. São Paulo: Summus; 1999. p. 31-46 ⁽²⁶⁾ .
	E19 - Escalas (Categoria - Razão) de Borg para mensuração da dor (Borg CR Scales) E20 - Escala Multidimensional da dor (McGill)	Melzack R, Katz J. The McGill Pain Questionnaire: Appraisals and current status. In: Turk DG. e Melzack R. Handbook of Pain Assessment. New York: Guilford; 1992. p.152-65 ⁽²⁷⁾ .
Risk of Anesthetic complications	E21 - Escala de Aldret e Kroulik (Aldret and Kroulik scale)	American Society of Anesthesiologist (ASA). Physical status classification system Washington; 2011 ⁽²⁸⁾ .
Risk of Motor Deficit	E22 – Escala de Bromage (Bromage Scale)	PasinS,Schnath F. Cuidados de enfermagem na analgesia por cateter peridural. Rev HCPA. 2007;27(2):69-73 ⁽²⁹⁾ .

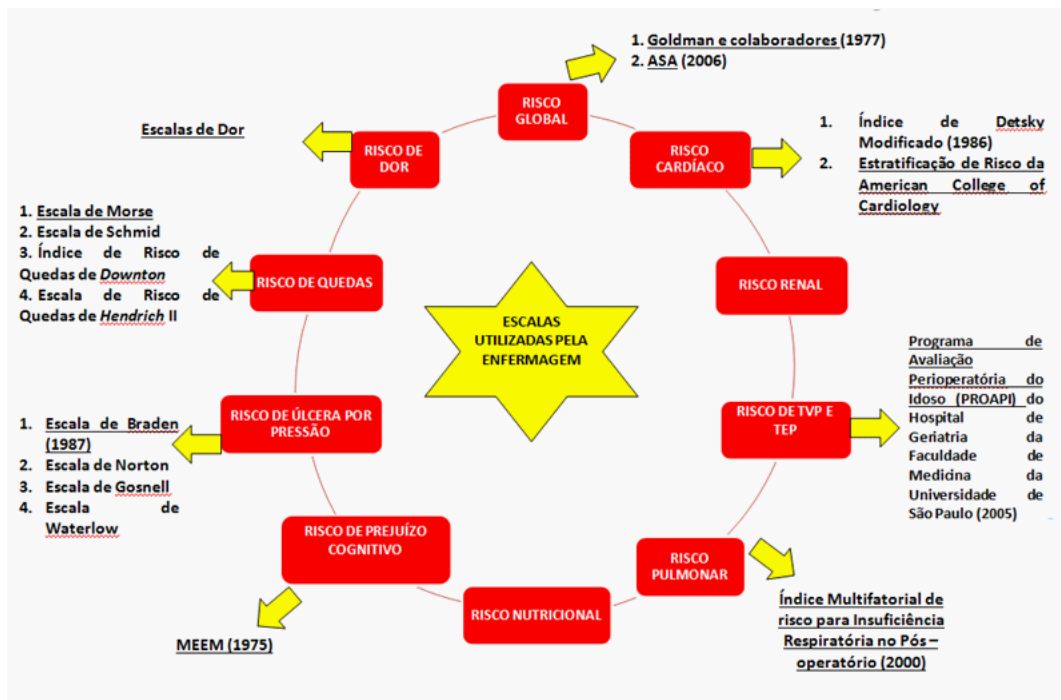


Figure 1 – Surgical risk and assessment scales. Florianópolis, SC, Brazil, 2016

● DISCUSSION

Regarding the assessment of risks inherent of surgeries in elderly, special attention should be paid to cardiac risks and associated cardiovascular risk factors (e.g. risk for vein thromboembolism) and medication history, as well as other aspects involving morphological and functional alterations related to senescence⁽¹⁾.

Cardiac risk is one key aspect to be assessed. The stress associated to surgical procedures may lead to reduction of the cardiac functional reserve in elderly individuals. Moreover, high blood pressure, highly prevalent among elderly, is common in these patients⁽¹⁾. One study on cardiovascular risks for patients with high blood pressure showed that the most individuals with cardiovascular risks were older than 70 years, and those with average risk were older than 60 years⁽³⁰⁾. Two scales were identified (E3, E4) with the purpose of assessing the cardiovascular item applicable to elderly patients.

The scale used to assess risks for pulmonary complications (E6) is also a valuable tool for nurses in the assessment of elderly patients, since these are most likely to respiratory complications associated to age-related physiological alterations⁽¹⁾.

The scale (E5) that assesses the risk for Deep Vein Thrombosis (DVT) and Pulmonary Embolism (PE), should be widely used in the assessment of elderly patients in perioperative care, since the incidence of DVT increases from 1.8/1000 individuals aged 65 to 69 years to 3.1/1000 individuals aged between 85 and 90 years; PE, in turn, is the most common thromboembolic complication in the postoperative period, and is often asymptomatic^(1,31).

The scales used in the assessment of risk of pressure ulcer (PU) (E8, E9, E10, E11) are essential, since the skin of older people is more fragile and more susceptible to pressures, especially during long surgical procedures and patient positioning during surgery. Pressure ulcers result from interruption of blood supply usually caused by pressure, shear or friction, or else a combination of these factors⁽³²⁾.

Regarding the risks of falls, nursing care is particularly important, since this event may be conditioned to patient-related factors (intrinsic), to the hospital environment and health professional work process (extrinsic)⁽³³⁾.

The other scales for assessment of pain, risk of motor deficit and anesthetic complications should also be implemented because elderly individuals are at higher risk of delirium and altered level of consciousness, particularly in the age group of 60 to 69 years⁽³⁴⁾.

Assessment of surgical risks is necessary to ensure the safety of elderly patients. Thus, nursing care provided to elderly in the perioperative period should be based on the recommendations of Brazil's National Patient Safety Program (PNSP). This approach attempts to rethink the current care processes, in order to anticipate the occurrence of errors before they cause harm to patients⁽³⁵⁾.

Older people are often more vulnerable when hospitalized, especially when they undergo surgery, which itself involves risks. Several studies indicate that this population is more susceptible to preventable adverse events and damage related to hospital stay⁽³⁶⁾. The surgical complications of elderly patients addressed in the study are associated with aging, i.e., lower adaptability to environmental changes, and homeostasis, due to general reduction of functional reserves⁽³⁷⁾. Therefore, effective and high-quality nursing care should be provided to these patients to ensure their safety⁽³⁸⁾.

● FINAL CONSIDERATIONS

The use of scales for assessment of risks for elderly patients in perioperative care by nurses reaffirms the principles of patient safety, with identification of risk factors and prevention of surgical complications. However, further studies are needed for the clarification of some issues.

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