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Readmission from orthopedic surgical site infections: an integrative review

Readmissão por infecção do sítio cirúrgico ortopédico: uma revisão integrativa

Reingreso por infección del sitio quirúrgico ortopédico: una revisión integradora

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ABSTRACT

Objective: Characterizing readmissions from orthopedic surgical site infections. **Method:** An integrative review of literature in the LILACS, IBECs, MEDLINE, Cochrane, SciELO and PUBMED databases, using the descriptors Patient readmission, Wound infection, Cross infection, Orthopedic procedures, Orthopedics. **Results:** 78 studies were identified and 10 publications were selected. Surgical site infections are the most common cause of unplanned orthopedic readmissions, representing long periods of hospitalization, new surgical procedures and high costs, and greater possibility of subsequent hospitalizations. Most significant predictors have indicated average length of hospitalization, need for intensive care, emergency status at admission, risk of death, age > 65 years, males and higher body mass index. **Conclusion:** Readmission rates have increasingly become measures of quality and concerns about costs. New studies could involve issues related to indirect costs, specifically social and psychological costs.

DESCRIPTORS

Patient Readmission; Surgical Wound Infection; Cross Infection; Orthopedics Procedures; Orthopedics Nursing; Review.

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INTRODUCTION

Surgical site infections (SSI) are those resulting from invasive surgical procedures with important aspects related to quality in the provision of health care⁽¹⁻³⁾. Prevention and control of this condition constitutes fundamental steps for safety and improvement of health services⁽⁴⁾. The identification of risk factors related to patients and procedures is essential and should direct strategies to prevent this complication⁽⁵⁾. There is also the possibility of validating a new surgical site infection risk nursing diagnosis with the North American Diagnosis Association (NANDA), that may positively impact clinical practice⁽⁶⁾.

Due to the growing concern on the subject, the Centre for Diseases Control and Prevention (CDC) published a study in 2011 on the prevalence of health care associated infections in acute care hospitals in the United States, with results indicating that approximately one in every 25 hospitalized patients have at least one infection associated to health care, especially pneumonia and SSI⁽⁷⁾.

SSI are associated with increased morbidity and mortality⁽⁸⁾, they contribute to the need of new surgical procedures, increased hospital stay and use of antimicrobials, which means harm to patients and increased hospital costs⁽⁹⁻¹⁰⁾.

In the orthopedic specialization, surgical site infections can compromise the proposed initial treatment⁽¹¹⁾, considering aggressive debridement, late and polymicrobial infections, removal of implants, replantation and arthrodesis, in an attempt to avoid treatment failure⁽¹²⁾.

This condition is relevant taking into consideration projections on the volume of certain orthopedic procedures, for example, by 2030 in the United States, a significant increase is expected in the number of primary hip (174%) and knee (673%) arthroplasties and their reviews (in total, 601%). These are numbers that could support political decisions related to training of specialized personnel, targeting resources and quality of care⁽¹³⁾.

Post-operative infections in orthopedics are considered serious and devastating complications which generate economic, clinical and social impacts⁽¹⁴⁾, leading to subsequent hospitalizations and new surgical interventions. The whole multidisciplinary team should be involved in order to recognize conditions and risk factors already identified in the literature in advance. Nurses assume a strategic role for closely monitoring infections related to health care and for leading the establishment of preventive measures aimed at patient safety⁽⁶⁾.

Hospital readmissions have increasingly gotten the world's attention as a measure of quality, and one of the most important points in reducing associated costs^(1,3). According to WHO, when readmissions occur after specific hospital procedures, it is considered an undesirable result, and it must function as a starting point for analyzing care processes⁽¹⁵⁾. However, the data collected must be consistent enough for a more accurate analysis of planned and unplanned readmissions and to signify advantages in direct actions⁽²⁾. In recent years, efforts have arisen to reduce readmission rates because of the growing increase in reported

numbers as well as the financial implications that have been imposed on lenders⁽¹⁰⁾.

Scientific publications normally show unplanned readmission for orthopedic surgery patients through studies that analyze causes, the number of additional hospitalization days, predominant microorganisms and associated costs^(6,8,16-17). As research is presented and tends to reflect the quality of the first treatment, it needs to analyze the complexity of factors related to readmission in order to fill this gap of knowledge⁽³⁾. In addition, reinstatement is not desired by patients⁽¹⁰⁾.

Therefore, it is relevant to suggest an expansion on the focus of the approach, gathering and synthesizing of information to answer what characteristics are available in the literature on readmissions from orthopedic surgical site infections.

As a result, this integrative review aims to characterize readmissions from orthopedic surgical site infections in the last five years.

METHOD

Integrative literature review enables searching/finding/discovering the state of the art of a particular theme which has been presented empirically or theoretically. In this way, it becomes possible to identify trends or evidence underlying the proposed study. The steps for conducting it include six phases: preparation of the research question; search and definition of the sample through the selected descriptors; data collection; results analysis; discussion; and disclosure⁽¹⁸⁾.

For this integrative literature review, the identified descriptors from Medical Subject Headings (MeSH) were used, through the website <http://www.nlm.nih.gov/mesh/MBrowser.html>, which also coincided with Health Sciences descriptors of the Virtual Health Library (VHL): "patient readmission," "surgical wound infection," "cross infection," "orthopedics," "orthopedics procedures." The search for publications took place in December 2014 in the VHL Portal, through the site www.bvsalud.org, which includes the bibliographic index of Latin American and Caribbean Health Sciences (LILACS), Bibliographic Index on Health Sciences from Spain (IBECS), International Database for Medical Literature (MEDLINE), Cochrane Library and Scientific Electronic Library Online (SciELO).

The Boolean term "AND" was used for the following descriptor crossings: patient readmission AND surgical wound infection AND orthopedics; patient readmission AND surgical wound infection AND orthopedics procedures; patient readmission AND cross infection AND orthopedics; patient readmission AND cross infection AND orthopedics procedures; patient readmission AND orthopedics; and patient readmission AND orthopedics procedures.

Articles that addressed issues related to readmission from orthopedic surgical site infections published in Portuguese, English, Spanish, Italian and French during the past five years (2010-2014) were included. The period was defined in order to make it possible to condense the latest information on the formulated question. Publications without abstracts were excluded, along with those that did not meet inclusion criteria regarding language and defined

year of publication, or those which did not address the proposed topic.

To assess the methodological quality of the studies, tools from Joanna Briggs Institute were used, which are JBI Critical Appraisal Checklist for Comparable Cohort/Case control, and JBI Critical Appraisal Checklist for Descriptive/Case Series⁽¹⁹⁾.

RESULTS

From crossing the descriptors in the selected research databases 78 queries meeting inclusion criteria were identified. Of these, 19 publications were read in full and nine were excluded for not presenting specific data on readmissions from orthopedic surgical site infections; they only included the infections in the general data of the institutions that served as the stage for the various studies.

The search in the databases resulted in a sample of 10 scientific articles. Data were descriptively analyzed and synthesized in order to reach the objective. For this purpose, a form was used to collect information on the variables related to the characteristics of publications (publication year, journal, study objectives, research design) and on the variable of interest (aspects related to readmissions from orthopedic surgery site infections: incidence, predictors, more significant comorbidities, length of hospital stay).

Most of the research was published in 2013 (60%) and 2014 (20%). The studies had a total of 60 authors,

Figure 1 shows the diagram of the inclusion and exclusion process of studies by crossing the descriptors.

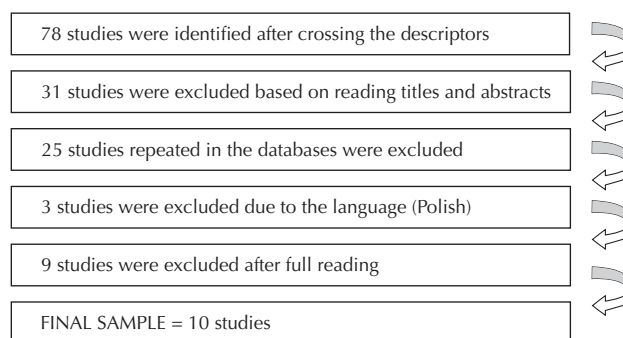


Figure 1 – Diagram of the inclusion and exclusion process of studies in the review.

averaging six per publication, one of which had 10 authors. Regarding the journals where the papers were published, more than half were related to the specialization of orthopedics (70%), and retrospective cross-sectional descriptive design was the most used (80%). All of the studies (100%) were in English and most of the investigations were conducted in American hospitals (60%), two in New York, two in Pennsylvania, one in California and one in Washington. Four studies had no reference to the location where the research was conducted (Chart 1).

Chart 1 – Characterization of the analyzed publications – Coimbra, Portugal, 2014.

Authors, Year of publication and Journal	Objectives	Design	Related aspects of readmission from orthopedic surgical site infections
McCormack, et al., 2012 ⁽²⁰⁾ Spine	Analyzing the causes of unplanned readmissions within 30 days after spinal surgeries.	Quantitative/ Descriptive/ Retrospective/ Cross	Most common cause of 45 unplanned early readmissions and reoperations was infection (32%), which occurred more frequently after Laminectomy for decompression, cervical spine arthrodesis, thoracolumbar/posterior access, and lower back. In 15.5% of revisions, the surgical infection was the second most common leading cause (76%).
Dailey, et al., 2013 ⁽²¹⁾ J Bone Joint Surg Am	Identifying incidence of orthopedic readmissions within 30 days and identify risk factors among the workers.	Quantitative/ Descriptive/ Retrospective/ Cohort	Cumulative incidence of unplanned readmissions was 4.2%. Of these, 73.9% are related to surgeries (34.3% due to SSI). Average time of permanence in the first hospitalization was higher for readmitted patients (5.9 days) in relation to non-readmitted (3.6 days). Need for intensive care ($p=0.002$) and longer average stay ($p=0.002$) significantly increased the likelihood of readmissions in 30 days (OR = 2.356 and OR = 1.038, respectively).
McCormack, et al., 2013 ⁽²²⁾ J Healthc Manag	Identifying causes of planned and unplanned readmission within 30 days.	Quantitative/ Descriptive/ Retrospective/ Cross	Unplanned readmissions totaled 70.6%. Of these, 57.8% were related to surgical causes (SSI = 40.6%, being the majority). Average stay of 9.9 days, which was increased by four days due to unplanned readmissions.
Nacke et al., 2013 ⁽²³⁾ Clin Orthop Relat Res	Characterizing readmissions for infection within 30 days after spine surgeries and joint arthroplasties.	Quantitative/ Descriptive/ Retrospective/ Cross	Readmission rates statistically higher in spine surgeries in relation to arthroplasties ($p=0.045$). There was no significant difference between readmissions after cervical and lumbar procedures ($p=0.31$). In 30 days, 80.4% of those undergoing spine surgery were readmitted and 62.2% after arthroplasty, with hips having a higher readmission rate compared to knees ($p=0.062$). Preoperative characteristics were similar with respect to age, gender, and comorbidities.

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Authors, Year of publication and Journal	Objectives	Design	Related aspects of readmission from orthopedic surgical site infections
Amin, et al., 2013 ⁽²⁴⁾ J Neurosurg Spine	Evaluating the relevance of global readmission rates in readmissions after spine surgery and identifying their predictors.	Quantitative/ Descriptive/ Retrospective/ Cross	Main reason for admission was infection (39.8%). Surgery cancellations and planned readmissions were excluded from the global calculations so as to not contaminate the data and rates of hospital readmission, indicating a reduction of 29% in the costs related to all readmissions. The predictors with statistical significance for readmission were elective status or emergency admission ($p < 0.0001$), staying after five days ($p < 0.0001$), risk of death ($p < 0.0001$) and age > 65 years ($p < 0.0021$).
Zmistowski, et al., 2013 ⁽²⁵⁾ J Bone Joint Surg Am	Identifying the incidence, causes and risk factors for unplanned readmission in 90 days after total arthroplasty.	Quantitative/ Descriptive/ Retrospective/ Cross	Unplanned readmissions in 90 days accounted for 84.7% of the total, and of these, 58.9% occurred within the first 30 days. The most common cause was infection, with 35.9% of them within the first 30 days. Knee arthroplasty, male, greater body mass index and increased hospital stay were significant predictors.
Kapadia, et al., 2014 ⁽²⁶⁾ The J Athroplasty	Assessing the impact of post-arthroplasty infections in the length of stay, readmissions and associated costs.	Quantitative/ Descriptive/ Retrospective/ Case-control study	Average hospitalization stay of the infected group was significantly greater than in the control group (5.3 days/3 days, $p = 0.0002$), as well as the average number of readmission events. Average number of hospitalization days of infected patients, post knee arthroplasty, in 1 year was 24 days, and in those undergoing general arthroplasty who were not infected was 3.4 days ($p < 0.0001$). Total costs were significantly higher in the infected group ($p < 0.0002$).
Walid, et al., 2010 ⁽²⁷⁾ J Clin Neurosci	Analyzing characteristics of spine surgery patients, both outpatients and hospitalized, in relation to demographic data, obesity, comorbidities and rates of infection.	Quantitative/ Descriptive/ Retrospective/ Cross	Approximately 1% of outpatients were attended with SSI and 2.8% of those operated under hospitalization developed SSI, however there was no statistically significant difference. There were seven readmissions by SSI and all were obese ($BMI > 30$), considered a predicting factor for infection, and had higher prevalence of chronic diseases.
Kane, et al., 2014 ⁽²⁸⁾ Orthopedics	Identifying correlation between seasonality and risk of infection in total arthroplasties.	Quantitative/ Descriptive/ Retrospective/ Cross	Incidence of post-operative infection was 2.2% (17 patients) followed during the first hospitalization and on subsequent visits. There was statistical significant difference between the seasons separately ($p = 0.031$), and also with the infection rates between summer/fall (3.6%), compared to winter/spring (1.0%), ($p = 0.013$).
Wang et al., 2013 ⁽²⁹⁾ Comput Inform Nurs	Assessing impact of setting goals and use of educational videos on patient satisfaction, average time of stay and readmission rates in 30 days.	Quantitative/ Descriptive/ Prospective/ Transverse	Families and patients discharged after spine surgery were divided into three groups in the same hospital unit. The first did not experience intervention, nor did they meet the program goals and educational video intended for discharge planning. The second group only received the goals. The third received the goals and watched the educational videos. 32 unplanned readmissions occurred in all three groups and the most common cause was SSI and there was no significant difference between them.

DISCUSSION

In analyzing the variable of interest of this review, meaning the readmission characteristics from orthopedic surgical site infection, it was found that the objectives of included publications varied between characterizing unplanned readmissions within 30 days after discharge⁽²⁰⁻²³⁾, identifying predictors of surgical readmission within 30 days in overall readmission rates⁽²⁴⁾, assessing their impact on costs, average stay and overall readmission rates, as well as its causes and risk factors^(20-21,25-26) and associated comorbidities⁽²⁷⁾. Studies analyzing the impact of seasonality⁽²⁸⁾ and influence of goals and educational video programs on events that also included readmission⁽²⁹⁾ were also performed. There is diversity among generating motives for research, even if the

publications have been selected by the inclusion criteria defined in this review.

As for the methodological quality assessed through Joanna Briggs Institute tools, all the articles were approved considering that at least half (50%) of the checklist for each instrument should be answered positive. The JBI Critical Appraisal Checklist for Comparable Cohort/Case control instrument assessed the similarity in the course of their condition or disease from the selection of patients, which for this literature review refers to orthopedic surgical site infection; and sample representativeness of the population as a whole. Also considered were the identification and treatment of potential confounders; sufficient time to follow cases to meet the objectives of the respective studies;

and choosing appropriate statistical methods. There was no mention in this sample of one of the aforementioned checklist items, which refers to inclusion in the analysis results of people who withdrew from the study. It is believed that this was due to the fact that most studies are based on registries of medical records and institutional reports. The other instrument, JBI Critical Appraisal Checklist for Descriptive/Case Series, also considered clarity in the definition of the inclusion criteria in addition to the above items, and existing comparisons if there was sufficient description of the groups. The criteria for evaluation of the results should be objective and reliable, to which all the articles met this issue by way of a detailed description of the analysis methodology⁽¹⁹⁾. The evaluation of the quality of publications including study sites, target, sampling methods, research tools, collection and analysis procedures, among others, are transformed into important points for the readers' evaluation as to the meaning of the study results⁽³⁰⁾.

In the global context of readmissions, there was a predominance in readmissions related to surgical services observed when compared to clinical⁽²¹⁻²²⁾. This fact is confirmed by a study that analyzed the unplanned readmissions and compared their causes between medical and surgical discharges, where it found that postoperative complications accounted for 70.5% of readmissions related to surgical discharges⁽³⁾. Surgical site infection was also the most common type of infection, with a predominance of those classified as deep⁽⁴⁾; and events related to the orthopedic site were the main reason for readmissions^(20-22,24-25,29), ranging from 32.0 to 40.6% in the group of unplanned readmissions.

Among the statistically significant predictors are: the average length of stay when evaluating all readmissions for orthopedic SSI⁽²¹⁾; those new admissions which occurred after arthroplasty in general⁽²⁵⁾, or just the knee⁽²⁶⁾; and, more specifically, when the stay is greater than five days in SSI readmission after spinal surgeries⁽²⁴⁾. The need for intensive care after the first procedure was considered significant when defining risk factors for orthopedic readmission in 30 days for infection⁽²¹⁾. In spinal surgeries with urgent admission status, the risk of death and age > 65 years were predictive factors for repeated hospitalizations⁽²⁴⁾. Knee arthroplasty, male gender and higher body mass index (BMI) are also among the predictors of re-hospitalization for unplanned causes, and also includes SSI when the infection is analyzed after arthroplasty in general⁽²⁵⁾. A multicenter prospective study in the context of spinal injury obtained an incidence rate and identification of risk factors for SSI equivalent to those found in the literature for spinal surgery⁽¹⁶⁾.

In an attempt to correlate between seasonality and risk of infection in total arthroplasties, there was a statistically significant difference between infections that occurred in the summer/fall compared to winter/spring. However, the authors point out limitations, especially with regard to classifying the potential for surgery contamination⁽²⁸⁾.

Among the comorbidities, obesity is a possible predictor of readmissions for SSI when analyzing the characteristics of patients operated on an outpatient basis and inpatient

management. Although there was no significant difference in readmissions for infection related to the type of service, all readmitted patients had a BMI > 30⁽²⁷⁾. Diabetes also emerged as a predictor of SSI in research that investigated the incidence and risk factors in the procedures related to spinal vertebrae injury⁽¹⁶⁾.

Readmission rates were significantly more expressive in spinal surgery compared to arthroplasties^(23,29). In the referred study, two types of surgeries were grouped into very low overall rates of infection in the institution, and therefore of readmissions for this reason⁽²³⁾. Educational videos and goals in the planning of discharge evaluated the influence on readmission rates for orthopedic SSI, so the study results show the comparison between spinal surgeries and arthroplasties⁽²⁹⁾. With regard to arthroplasties, in order to identify the incidence, causes and risk factors for readmission, the hip resulted in a higher percentage compared to the knee, but without statistical significance, despite similar preoperative characteristics such as age, gender and comorbidities⁽²³⁾. Also in relation to arthroplasties, SSI was the leading cause of readmission after hip surgery, while knee surgery had a predominance of stiffness in the joint⁽²⁵⁾. Regarding spinal surgery, more readmissions occurred due to infection after laminectomy for decompression, cervical spine fusion, thoracolumbar with posterior access and lumbar, in relation to the others⁽²⁰⁾. One study found no significant difference between readmissions by SSI after cervical and lumbar procedures⁽²³⁾. Regardless, in order to assess whether the preparation for discharge of elderly could reduce readmission rates and hospital stay, the WHO emphasizes that planning is the key to ensuring safe and effective continuity of health care⁽¹⁵⁾.

The average length of hospital stay increased by four days in comparing planned and unplanned readmissions, and between unplanned events, those resulting from surgical site infection presented an average of 9.9 days of stay⁽²²⁾. In another study that compared a group of patients with postoperative infection and a group who did not develop infection in order to assess the impact of post-arthroplasty knee infections for length of stay, readmissions and associated costs, it was found that the average hospitalization stay among those infected was significantly higher than in the control group, being composed of individuals who were not infected after primary knee arthroplasties. The number of subsequent hospitalizations or readmissions within one year of follow-up was higher in the uninfected group⁽²⁶⁾.

Two publications pointed out the need for further surgery depending on SSI and subsequent readmissions^(20,23). Secondary procedures were performed on most SSI patients readmitted after spinal surgeries and arthroplasties⁽²³⁾. In more than half of the unplanned readmissions the patients returned to surgery, most as a result of postoperative infection, which also comes as second cause of readmission after surgical revisions⁽²⁰⁾. Research that addresses the factors contributing to the SSI has confirmed that this complication allows for revision surgery, delayed wound healing and increased length of hospital

stay⁽⁹⁾. Another study to identify risk factors associated with treatment failures of SSI after spinal surgery indicates the prevalence of aggressive surgical debridement and prolonged antibiotic use⁽¹²⁾.

For analyzing costs it becomes important to properly characterize readmissions as planned and unplanned, considering that the actions or interventions in each group have different focuses. In addition, unplanned occurrences represent higher cost, and at the same time, the greatest potential for improving quality of care^(21-22,24), constituting an organizational challenge. Researchers that have examined causes of unplanned readmission affirm that interventions that improve the quality of care processes on the first admission tend to be more effective in reducing subsequent events of clinically-related hospitalization⁽³⁾. Other studies also consider that there is an increase of infections due to costs⁽⁸⁻⁹⁾; that efforts should be concentrated on patients with higher risk of readmission⁽¹⁰⁾; and that there would be a large annual savings by reducing infection rates related to health care⁽⁸⁾. The US Department of Health and Human Services considers that the approach to readmission causes becomes a useful measure for the accountability of health plans in the sense that it assumes the coordination of effective care with institutions and health professionals⁽¹⁾.

Readmission rates when stratified, and those unrelated to the assistance itself are eliminated (such as cancellations or suspension of surgeries), become more accurate for comparison between institutions and may set real readmission event costs^(22,24). Planned readmissions to perform surgical steps, among other reasons, can mean 25% of all readmissions⁽²⁴⁾. Those decided early should be used as an indicator of surgical care quality⁽²⁰⁾. In addition, one cannot fail to point out that there is still need for more studies involving surgery with implants, especially with regards to the safety of antibiofilm strategies to treat infections involving bone tissue and biomaterials⁽¹¹⁾. This would also be a point to consider in studies on readmission following orthopedic surgery, considering that infections associated with the use of biomaterials differ in epidemiology, etiology and severity in relation to procedures which are not used⁽¹⁴⁾. It is noteworthy here that there was no mention in any of the studies about extrinsic factors for surgical site infections, namely: hospital stay prior to the procedure, processing of items and materials for care, surgical techniques, or operating room environment. It is understood that these issues are already defined. Thus, it is considered that the studies have advanced towards knowledge and interventions of the intrinsic factors, i.e. age, severity and associated comorbidities, among others evaluated in the research that compose the sample for this review.

Finally, the administrative databases have been used frequently in comparative studies and setting improvement care goals^(22,24). However, attention must be turned to the quality of data available that suffer variations related to the type of record, specific causes of readmissions and quantitative information^(21-22,25,28). Otherwise, limitations are imposed on studies⁽²⁴⁾, such as those cited by the selected authors: size and definition of the sample⁽²³⁾ and data loss due

to inclusion criteria when patients are treated at other services other than those where the previous care occurred⁽²⁰⁻²²⁾. There is no doubt that measures or performance indicators from causes of readmission can be used in quality reports and accountability, given that their nature is multifactorial and responsibility must be shared⁽¹⁾.

This review also presents limitations due to the small number of selected publications, and in relation to the diversity of them, of assessing costs, sometimes comparing types of surgery, and always in very different situations. However, it is a first step in the multidisciplinary team of professionals that can provide the necessary importance to the data for better management and better qualification of the care provided.

Nurses in particular play an important role in improving the safety and quality of care, overseeing the results of critical managerial concepts throughout the historical movement of care⁽³¹⁾.

CONCLUSION

It is noted that readmission rates become an important reference for analyzing the quality of care, especially when stratified by causes and time of occurrence is evaluated and compared with the previous hospitalization.

In relation to unplanned readmissions, SSI are the most frequent cause in more than half of the studies, although quite specific actions and widely publicized for its prevention and control, as well as extrinsic factors or related to care processes. When orthopedic surgeries are done, new admissions represent long hospitalization, invariably associated with new surgical interventions, an increase in the number of subsequent hospitalizations, and new infections.

The study of predictive risk factors already known and a review of work processes can change readmission data for orthopedic surgical site infections, reducing costs and qualifying assistance. Nursing care, in particular their management skills already established for critical care involving a multidisciplinary team, has a fundamental role in care, from comparative and analytical data of surgical procedures, to getting to know other dimensions with potential actions that contribute to minimize such occurrences.

This review has shown that research focuses on causes, risk factors and comparisons between institutions. However, there is the emergence of new elements, such as differences in the incidence of SSI between the various types of surgeries, which influence the incidence of SSI in overall rates and their meanings in the same institutions.

Still, a higher volume of comparative studies and new research involving issues related to indirect costs are necessary, specifically the social and psychological costs, closer to patients who are the victims of readmissions.

Nurses are health professionals with a prominent role in the control and prevention of infections, with fundamental in-depth knowledge that impacts the delivered care, minimizing the risk for SSI and therefore readmissions resulting from them.

RESUMO

Objetivo: Caracterizar as readmissões por infecção do sítio cirúrgico ortopédico. **Método:** Revisão integrativa da literatura, nas bases de dados LILACS, IBECs, MEDLINE, Cochrane, SciELO e PUBMED, por meio dos descritores Readmissão do paciente, Infecção da ferida operatória, Infecção hospitalar, Procedimentos ortopédicos, Ortopedia. **Resultados:** Identificados 78 estudos e selecionadas 10 publicações. A infecção do sítio cirúrgico é a causa mais frequente entre as readmissões ortopédicas não planejadas, que representam longos períodos de internação, novas intervenções cirúrgicas e custos elevados, além de maior possibilidade de internações subsequentes. Fatores preditivos mais significativos apontaram tempo médio de internação, necessidade de cuidados intensivos, *status* de urgência na admissão, risco de morte, idade > 65 anos, sexo masculino e maior índice de massa corporal. **Conclusão:** Taxas de readmissão tornam-se cada vez mais medidas de qualidade e preocupação em relação a custos. Novos estudos poderiam envolver questões relacionadas a custos indiretos, especificamente os sociais e psicológicos.

DESCRITORES

Readmissão do Paciente; Infecção da Ferida Operatória; Infecção Hospitalar; Procedimentos Ortopédicos; Enfermagem Ortopédica; Revisão.

RESUMEN

Objetivo: Caracterizar los reingresos por infección del sitio quirúrgico ortopédico. **Método:** Revisión integradora de la literatura, en las bases de datos LILACS, IBECs, MEDLINE, Cochrane, SciELO y PUBMED, por medio de los descriptores Reingreso del paciente, Infección de la herida operatoria, Infección hospitalaria, Procedimientos ortopédicos, Ortopedia. **Resultados:** Fueron identificados 78 estudios y seleccionadas 10 publicaciones. La infección del sitio quirúrgico es la causa más frecuente entre los reingresos ortopédicos no planificados, que representan largas estancias hospitalarias, nuevas intervenciones quirúrgicas y costos elevados, además de mayor posibilidad de ingresos subsiguientes. Los factores predictivos más significativos señalaron tiempo de estancia media, necesidad de cuidados intensivos, *status* de urgencia en el ingreso, riesgo de muerte, edad > 65 años, sexo masculino y mayor índice de masa corpórea. **Conclusión:** Las tasas de reingreso se hacen cada vez más medidas de cualidad y preocupación con relación a los costos. Nuevos estudios podrían involucrar cuestiones relacionadas con costos indirectos, especialmente los sociales y psicológicos.

DESCRIPTORES

Readmisión del Paciente; Infección de Herida Operatoria; Infección Hospitalaria; Procedimientos Ortopédicos; Enfermería Ortopédica; Revisión.

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