PREVENTIVE STRATEGIES OF SSI: NURSES’ KNOWLEDGE IN PRE-OPERATIVE AND POST-OPERATIVE SURGICAL SITE CARE

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ABSTRACT

Some patients’ condition occasionally necessitates medical surgical operations. However, in some cases, the proper care of such resultant surgical sites fails to meet the professional standards due to diverse reasons and knowledge inadequacy. As such, infections are prone to manifest. Nonetheless, many researchers across the globe have sought to determine best nursing practices and ways of preventing such surgical site infections. Hence, this review purposed to detail the current prevention strategies of the surgical site infections and the subsequent improvement approaches within the hospital setups. The previous literature was thus obtained from three major journal databases; CINAHL, PubMed and Medline. Subsequently, the resultant journal articles from the previous researchers consistently confirm the need for strict adherence to the standard operation protocols for the prevention of both pre-operative and post-operative infections. Other measures revolve around hygiene; hand cleaning using antiseptic substances, use of sterile wound dressing materials, use of antiseptic soaps to clean surface. Some studies also confirm the need to remove the wound dressing materials between 24 and 48 hours. Nonetheless, studies also confirm that essence of training to bolster nurses’ knowledge about the prevention strategies of the surgical site infections. Based on such empirical data, it becomes apparent that the prevention measures rotate around the adherence to policies, inculcating strict hygiene and also improving nurses’ knowledge.

Keywords: Surgical site infection; Nurses’ Knowledge; SSI; Pre-operative; Post-operative; Preventive Strategies of SSI


1.0 INTRODUCTION

This article presents the vast review of the previous research about the prevention strategies of the Surgical Site Infections (SSIs). Literature was accordingly sought from three nursing journal databases; CINAHL, PubMed and Medline. Across, the literature, it was evident that SSIs are persistent challenge across many nations due to inadequate knowledge among nurses among other causes. Nonetheless, researchers have sought to formulate prevention measures through an empirical approach. The relevant research articles are thus discussed in the sections below.
1.1 Preventive strategies of SSI

Qasem and Hweidi (2017) conducted a study to identify the level of knowledge of SSI prevention standard guidelines among nurses in Jordan. They also sought to explore the relationship between nurses’ knowledge and some socio-demographic characteristics as well as the predictors of knowledge regarding prevention of SSIs. They observed a significant difference in the level of knowledge regarding prevention of SSI guidelines between nurses who were attending courses in surgical training and those who were not. Also, there were two significant predictors for knowledge regarding SSI which are the number of attended hours of surgical training and experience period of the nurse.

Another researcher, Gregson (2011) implemented changes to practice and improved protocols for dressings postoperatively and changed hair removal to hair clipping in an attempt to comply with the National Institute for Health and Clinical Excellence (NICE) guidelines. The study decreased infection rates in two clinical site which averaged between 5.7-9.0% down to 1.3% and 3.8% based on the two interventions. As such, shifts in protocol plays significant roles in the prevention of SSIs. Hickson, Harris and Brett (2015) also expressed some ways of reducing the chances of infections; maintaining hand hygiene and basic infection prevention to patients, hair removal by clipping rather than shaving, use of makeup or jewelry, changing pre-op skin prep changed to CHG, careful removal of drapes, utilizing sutures instead of staples, and standardizing pre and post-op protocols. By implementing these interventions, the SSI rate fell from 2.13% to 0.10%.

Changing preoperative skin preparation and antibiotics were found effective in a study by Henman et al. (2012). Changing current practices and implementing suggested guidelines, the Australian hospital was able to decrease SSI rates from 6.9% to 3.3%. The researchers found a decrease in the incidence of SSIs, readmission rates, length of stay, and improved patient outcomes.

Several other studies have implemented changes and found success related to small modifications in their current SSI bundle. Holland, Foster, Ulrich and Adkins (2017) focused on patient and staff hand hygiene education, CHG skin preparation, development of numerous educational pieces for staff, including postoperative wound care videos. The quality improvement project was successful and was able to decrease the rates of infection from 1.35% to 0.36% in two years. A study focused on gynecologic surgeries was performed to assess intervention beyond recommended SSI guidelines and was found to be successful. The retrospective and prospective study performed by Johnson et al. (2016) utilized new closing trays, glove changes for fascia and wound closure, dressing removal between 24 and 48 hours, and patients were discharged with 4% CHG solution for wound care, and given a follow-up call from nursing. Overall reduction was evident as the overall rate of SSI was 6.0% before additional bundled interventions was decreased to 1.1%. This study was particularly intriguing as the facility was already following best-practice guidelines.

In Netherlands, Crolla et al (2012) tested the implementation of a care bundle among colorectal surgery patients and how it impacted the rate of SSI infections. The study used a pre-test-post-test approach at a single hospital and included 1537 colorectal procedures. Some of the interventions adopted include the use of an isolation blanket on patient prior to transportation to the ward; replacement of razorblades with clippers; adherence to explicit and uniform protocol for perioperative prophylaxis; and critical assessment and determination of door openings close monitoring of patient temperature from the ward to the operating
room and back to the ward. The researchers reported an increase in the bundle compliance rate (10%–80%) during the course of the study. There was a higher compliance with antibiotic prophylaxis and significant improvements were also made in compliance and hair removal and normothermia protocols. Among the 1537 procedures conducted during the study phase, 300 SSIs occurred whereby 124 (8.1%) were superficial, and 176 (11.5%) were deep SSIs. The researcher also reported higher rates of SSIs in open as compared to laparoscopic procedures, among surgeons who had executed a lower number of colorectal procedures and among high ASA score or wound class patients in nonselective procedures. This translated to a 36% reduction rate to the SSI incidence rates observed in the period leading up to the study.

1.2 Post-operative preventive measures

Several studies have focused on the post-operative measures of preventing SSIs. For instance, Webster and Alghamdi (2015) sought to assess the effect of adhesive drapes used during surgery on surgical site infection mortality, morbidity and cost, using a randomized controlled trail. The results revealed that the group of patients with adhesive drapes had a significant high proportion of surgical site infection compared with the group with no adhesive drapes.

Elsewhere in India, Maurya and Mendhe (2012) assessed the effect of evidence based practice norms on the prevention of surgical site infection, the study included 15 nurses working in female surgical ward. The data for nursing knowledge, attitude and practice were assessed before implementing the new routine and after implementation. The results showed that there was a 93% improvement in nurses’ knowledge of post-operative surgical site prevention, and for the attitude scale the 78.13% of participants answered the baseline scale and 97.6% answered the posttest scale, with regard to skills 58.57% answered the pretest but the percent rose to 100% in the post test and this results indicates that the evidence paced skills made a significant improvement in preventing SSI.

A study conducted by Bajracharya, Maharjan and Shrestha (2014) to assess the knowledge of patients regarding post-operative site infections in Nepal using a cross sectional, descriptive design including 100 patients admitted into various hospital wards. The data collected from patients via structured interviews revealed that 74% of participants considered weak immune system as a risk factor of SSI, 60% of the participants considered malnutrition as a risk factor and 48% indicated that increased visitors will be a source of SSI. When patients were asked about symptoms of SSI, 95% agreed that fluid leakage from the surgical area is a symptom of infection, 85% of patients answered that bad odor is a symptom of infection and swelling of the incision were chosen by 65% of participants, 81% of participants answered that healthcare workers are suspected to wash their hands before and after the surgical wound dressing.

1.3 Pre-operative preventive strategies measures

Almost similar to the post-operative measures, scholars have also sought to determine best practices to prevent the pre-operative infections by diverse approaches. For instance, a study by Sickder, Lertwathanawilat, Sethabouppla and Viseskul (2017) expressed that the pre-operative care faced many barriers whose solution would lead to effective prevention of the SSIs. Their results showed that nurses faced critical knowledge deficiency regarding preoperative shaving, hand hygiene updated guidelines, and prophylactic antibiotics
administration. Inadequate recourses was also mentioned as a barrier including lack of shaving and skin preparation equipment’s and products. The third barrier was the inadequate performance monitoring system like insufficient monitoring for hand hygiene and dressing process, and lack of SSI surveillance system. For the facilitators, the participants indicated that willingness of the health care team to work professionalism is a big facilitator for perfect work, and also the support from the working team for the prevention of SSI.

2.0 CONCLUSION

This review has confirmed diverse evidence-based measures to prevent the SSIs. The strategies largely revolve hygiene for both the nurses’ hand and gloves as well as for the surgical site. Other policy measures also advocate for the adherence to the hospital standard operations procedures and the professional nursing practices to prevent the infections. Nonetheless, nurses need an apt knowledge and practical skills about the prevention measures of the SSIs since the previous research have ascertained the practical benefits of nurses’ adequate knowledge on the prevention of the SSIs.

REFERENCES


