Doctor of Nursing Practice Projects   School of Nursing

Preoperative Assessment of Patients in an Enhanced Recovery Program

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Executive Summary

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Introduction of the Problem

Surgery is a process with inherent risk for even the healthiest patients. All patients undergoing surgery are at risk for morbidity and mortality (Gabriel et al, 2018) and a patient's physical status plays a major role in patient outcomes (Hopkins et al, 2016). Some of these risk factors are modifiable such as smoking and exercise tolerance while others are nonmodifiable such as age. A small community hospital had no standardized preoperative evaluation tool to use for their enhanced recovery patients and requested the creation and implementation of such a surgical preassessment tool. This hospital already contacted patients prior to the day of surgery, but the assessment was not standardized and thus didn't easily allow them to identify patients at increased risk for perioperative morbidity and mortality. The purpose of this project was to create and implement a surgical preassessment tool which would be easy to use and would be able to identify patient risk factors which could be optimized prior to the patient's elective surgery.

Literature Review

A literature review was conducted to identify which preexisting risk factors should be assessed in patients undergoing surgery focusing on enhanced recovery programs. Enhanced recovery programs are intended to improve perioperative outcomes, speed up postoperative recovery, and reduce loss of patient's functional capacity (Feldheiser et al, 2016). Information was identified and evaluated based on retrospective studies, meta-analyses, and expert opinions. Patient health parameters to be assessed during preoperative evaluation were identified from multiple sources and consisted mainly of expert opinion (Chow, Rosenthal, Merkow, Ko & Esnaola, 2012; Feldheiser et al, 2016; Vetter, Boudreaux, Ponce, Barman, & Crump, 2016; Ward

et al, 2017). No studies were found that explored preoperative evaluation in a prospective study. A variety of modifiable and nonmodifiable risk factors which affect patient outcomes were identified including age, cardiac history, renal disease, severity of asthma, smoking, alcohol abuse, glycemic control, functional capacity, frailty, and nutritional intake (Ackland, Moran, Grocott, & Mythen, 2011; Agarwal et al, 2013; Botto et al, 2014; Dent, Kowal, & Hoogendijk, 2016; Eliasen et al, 2013; Frisch et al, 2010; Gillis, Nguyen, Liberman, & Carli, 2015; Grønkjær et al, 2014; Kheterpal et al, 2009; Lin et al, 2016; Oppedal, Møller, Pedersen, & Tønnesen, 2012; Schipper, Jiang, Chen, Koh, & Toolan, 2015; Sørensen, 2012; Tangvik, et al, 2014; Tsiouris et al, 2012; Ward et al, 2017). Novel approaches to reduction of risk which were explored included prehabilitation and malnutrition screening. Prehabilitation, a process of increasing a patient's physical resistance to stressful events (Gupta & Gan, 2016), has yet to be proven and warrants further research (Cabilan, Hines, & Munday, 2015; Gometz et al, 2018; Li et al, 2013). Nutritional screening and preoperative interventions have been shown to improve patient outcomes (Jie et al, 2012).

Project Methods

This project created a surgical preassessment tool for use on select patients undergoing elective surgery at a small community hospital. After identification of risk factors which could be modified, the patient was to be further evaluated and treated either by the surgeon or by other specialists. The surgical preassessment tool was created by modification of a pre-existing enhanced recovery preassessment tool using knowledge gained from the literature review as well as input from the stakeholder and clinical expert. The newly created surgical preassessment tool had 58 distinct questions which allowed the evaluator to assess potential risk factors including cardiac risk, nutritional status, and frailty. In addition to creating a surgical preassessment tool,

two adjuncts were created to help expedite evaluation. The first was an instruction tool with explanations of assessment parameters and the second was an Excel spreadsheet which automatically filled out the surgical preassessment tool and was intended to reduce the time it took staff to evaluate patients.

This project was declared exempt from the Institutional Review Board at Southern Illinois University Edwardsville due to its non-experimental nature, quality improvement design, and lack of patient information gathering. Project implementation took place at the small community hospital during a meeting with the stakeholder and the Enhanced Recovery coordinator. The surgical preassessment tool was explained, the adjuncts were shown, and questions were fielded. The author's contact information was shared with both parties and any questions they had were welcomed. No questions were asked after tool implementation.

Evaluation

A qualitative evaluation was chosen due to limited sample size of both the tool users and the quantity of patients who were enrolled in the Enhanced Recovery program. The questionnaire was developed in conjunction with the team lead and was approved by the stakeholder. This evaluation was in questionnaire format and included nine open-ended questions regarding tool use, effectiveness, and questions about how the surgical preassessment tool could be improved. A question using a Likert scale response was included to evaluate tool difficulty. Evaluation was initially scheduled three months after implementation. The stakeholder discouraged evaluation at that time due to the limited number of patients who had been evaluated, so evaluation was rescheduled two months later; therefore, five months after implementation evaluation questionnaires were sent to the hospital.

While a total of 13 patients were assessed using the new surgical preassessment tool during the five-month period, only two responses were returned, one from a nurse anesthetist and the other from the enhanced recovery coordinator. The respondents indicated patient assessment took approximately five minutes. When asked about benefits of using this tool, respondents reported it used an "objective risk stratification", allowed for "quick screening", had a "structured approach", and "easily flagged higher risk patients". On a 5-point Likert Scale for ease of difficulty, the tool scored 4.0 indicating the tool was easy to use. No patients were referred to other services, but one case was cancelled due to the results of the surgical preassessment tool. Overall this tool was well received, no significant changes were requested or made, and the stakeholders indicated this tool will continue to be used at the hospital.

The greatest limitation in this evaluation was the sample size, both in the number of practitioners evaluating patients and the number of patients evaluated. Only 13 patients were evaluated and only two practitioners evaluated patients. The author had initially wanted to reevaluate the surgical preassessment tool after three months, but the number of surgeries performed at this institution had decreased due to surgeons leaving. Another limitation of this project was surgeon buy-in, even if a patient was shown to have need for preoperative optimization getting the surgeon to agree was not certain. In the future it would be beneficial to evaluate more patients, increase the number of practitioners evaluating patients, and increase surgeon buy-in.

Impact on Practice

The purpose of this project was to assess and identify patients who are at risk for perioperative complications, assess their comorbidities, and then try to optimize those

comorbidities prior to surgery so that patients could increase their probability of a better outcome. The immediate impact of this project was that it created a standardized surgical preassessment tool to be used for patients coming in for surgery. One patient was identified by using the tool to be at high risk and surgery was cancelled. The participants who evaluated the surgical preassessment tool found it to be useful and relevant to this institution. The long-term impact of the surgical preassessment tool has yet to be seen. Depending on buy-in from surgeons and from others, this tool may have a long-term impact on patient outcomes. It has the potential to identify patients at risk who can then be further evaluated and treated prior to surgery. This author has a special interest in frailty and nutritional screening and interventions. Though this is an emerging field of research, it has great promise to improve patient outcomes. One other practitioner from another institution has requested to see the surgical preassessment tool and will possibly implement it at their facility. As of five months post-implementation, no alterations or changes were requested or made to the tool.

Conclusions

Preoperative optimization of patients having elective surgery is an emerging field of interest, especially for patients in enhanced recovery programs. Treatment of pre-existing comorbidities may help to improve patient outcomes and decrease length of stay in hospitals. Some areas of assessment have been thoroughly investigated and continue to be used while others are emerging fields of interest. This project aimed to create and provide a surgical preassessment tool which would easily assess patients prior to surgery and identify modifiable risk factors which could be referred to either the surgeon or another provider for evaluation. The results of the project were positively received, and this tool continues to be used. Future

recommendations when implementing a tool like this would be to increase buy-in from staff and physicians at institutions where new projects are implemented.

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