

ERAS[®] Program - Nursing care for patients undergoing colorectal surgery

Programa ERAS[®] - Cuidados de enfermagem à pessoa submetida a cirurgia colorretal
 Programa ERAS[®]: cuidados de enfermagem para personas sometidas a cirugía colorrectal

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Descriptores

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Abstract

Objective: To identify the nursing care associated with the *Enhanced Recovery After Surgery*[®] program in the field of colorectal surgery.

Methods: According to the recommendations of the Joanna Briggs Institute, a Scoping Review of publications from 2009 to 2019 was carried out based on the research question: “What is the nursing care for patients undergoing colorectal surgery in the scope of the *Enhanced Recovery After Surgery*[®] program?”. The research took place between 12/02/2019 and 12/12/2019 through the boolean research in the following electronic databases: CINAHL Complete, MEDLINE Complete, Nursing & Allied Health Collection: Comprehensive, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, Cochrane Methodology Register, Library, Information Science & Technology Abstracts, MedicLatina, and in the b-ON repository with the MeSH descriptors “*nursing*”, “*colorectal*” and the key-word “*enhanced*”.

Results: We selected 13 articles that showed adaptation and complementarity with the nursing care ensured by the nurse coordinator of the program and stomatherapist nursing. In the preoperative period, instruction and person optimization stand out as an intervention, in the intraoperative period, a minimally invasive approach with multimodal pain management, and in the postoperative, a precocious return to feeding, rehabilitation, and telephone follow-up at the time of the hospital discharge.

Conclusion: The nurses perform a crucial role to the adoption and support of the suggested clinical practices of the program verifying a positive impact in patients submitted to colorectal surgery.

Resumo

Objetivo: Identificar os cuidados de Enfermagem associados ao programa *Enhanced Recovery After Surgery*[®] na área da cirurgia colorretal.

Métodos: Realizou-se uma *Scoping Review* de publicações no período entre 2009 e 2019, segundo as recomendações do *Joanna Briggs Institute*, com base na questão de pesquisa: “Quais os cuidados de Enfermagem à pessoa submetida a cirurgia colorretal, no âmbito do programa *Enhanced Recovery After Surgery*[®]?”. A pesquisa realizou-se entre 02/12/2019 a 12/12/2019 através da pesquisa booleana nas bases de dados eletrónicas CINAHL Complete, MEDLINE Complete, Nursing & Allied Health Collection: Comprehensive, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, Cochrane Methodology Register, Library, Information Science & Technology Abstracts, MedicLatina e no repositório b-ON, com os descritores MeSH “*nursing*”, “*colorectal*” e a palavra-chave “*enhanced*”.

Resultados: Foram selecionados 13 artigos que evidenciam uma adaptação e uma complementaridade nos cuidados de Enfermagem assegurados pelo Enfermeiro coordenador do programa e Enfermeiro

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Estomaterapeuta. No pré-operatório destaca-se como intervenção o ensino e otimização da pessoa, no intra-operatório, uma abordagem minimamente invasiva com gestão multimodal da dor e no período pós-operatório, um retorno precoce da alimentação, reabilitação e acompanhamento telefônico aquando a alta.

Conclusão: Os Enfermeiros desempenham um papel crucial na adoção e sustentação das práticas clínicas sugeridas pelo programa verificando um impacto positivo na experiência cirúrgica dos pacientes de colorretal.

Resumen

Objetivo: Identificar los cuidados de enfermería relacionados con el programa *Enhanced Recovery After Surgery*® en el área de la cirugía colorrectal.

Métodos: Se realizó una *Scoping Review* de publicaciones del período entre 2009 y 2019, de acuerdo con las recomendaciones del Joanna Briggs Institute, con base en la pregunta de investigación: "¿Cuáles son los cuidados de enfermería para personas sometidas a una cirugía colorrectal, en el contexto del programa *Enhanced Recovery After Surgery*®?". La investigación se llevó a cabo del 02/12/2019 al 12/12/2019 mediante una búsqueda booleana en las bases de datos electrónicas CINAHL Complete, MEDLINE Complete, Nursing & Allied Health Collection: Comprehensive, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, Cochrane Methodology Register, Library, Information Science & Technology Abstracts, MedicLatina y en el repositorio b-ON, con los descriptores MeSH "nursing", "colorectal" y la palabra clave "enhanced".

Resultados: Se seleccionaron 13 artículos que evidencian una adaptación y una complementariedad en los cuidados de enfermería garantizados por el enfermero coordinador del programa y el enfermero estomaterapeuta. En el preoperatorio se destaca como intervención la enseñanza y optimización de la persona, en el intraoperatorio, un enfoque mínimamente invasivo con gestión multimodal del dolor, y en el período posoperatorio, un retorno precoz de la alimentación, rehabilitación y seguimiento telefónico después del alta.

Conclusión: Los enfermeros desempeñan un papel crucial para adoptar y sustentar las prácticas clínicas sugeridas por el programa, lo que confirma un impacto positivo en la experiencia quirúrgica de los pacientes de cirugía colorrectal.

Introduction

Adjusting and developing nursing practices in light of the scientific progress as a constant necessity leads to constant modifications of the developed practices in some services. This progress encompasses the field of Perioperative Nursing requiring increasingly technical and formative support to give adequate treatment to the patient's needs.

The *Enhanced Recovery After Surgery*® (ERAS®) program arises as a multimodal approach based on scientific evidence that contemplates a range of orientations referring to the perioperative period.⁽¹⁾ The early protocols emerged in the field of colorectal surgery and quickly expanded to other surgical specialties given the significant advantages for the patient and the organizations^(1,2) in which are listed: decrease in the rate of complications, reduction of hospitalization stay, and reduction of health costs.^(1,3) With respective administrative support, the implementation process presupposes the adaptations of protocols to the realities of each institution highlighting the importance of the engagement of a multidisciplinary team with the aim of increasing the adherence and sustainability of practices.⁽⁴⁾

Previously to the ERAS® program implementation, the average time for a colorectal surgery recov-

ery was around 10-14 days conditioning the patient to a late return to the intestinal transit, sense of hunger, and, consequently, a higher risk of malnutrition.⁽⁵⁾ Currently, the orientation provided by the program are contrary to this scenario indicating a hospitalization period of 3-5 days after surgery, and decrease of the complications without compromising the satisfaction of the patient.^(2,6)

With this new methodology, a new role in the nursing field emerges, namely the coordinator nurse of the *Enhanced Recovery After Surgery*® program (ERAS® nurse). Although their role is not totally clear, it is a preponderant element to the patient monitoring through the perioperative period, to the team training, and the auditing process.^(3,7)

The preoperative appointment is usually held by the ERAS® nurse that relies on their communicative and relational skills to inform and explore with the patient and the family anxiety triggering concerns, such as returning home.^(8,9) Throughout the appointment, the optimization criterion is addressed, as suggested by the program, to prevent complications associated with the surgery, and to increase the patient tolerance, given the physiological stress.^(6,9)

With regards to the anesthesia-surgical procedure, the program favors less invasive techniques

such as laparoscopic surgery and a rigorous monitoring.^(6,9) During the postoperative, some of the program's recommendations match the already prioritized care that the nurses provide, for instance, the discomfort relief caused by nausea, vomit, or pain in which other interventions as well as mobilizing the patient and prematurely returning the feeding are innovative.^(4,6,9)

As mentioned before, this set of procedures leads to a reduction of hospitalization period and, consequently, the reduction of risks related to hospitalization. On the other hand, in the case of ostomized patients, the nurse has less time to monitor and provide autonomy in the care of the patient.⁽¹⁰⁾

The advent of the orientations of colorectal surgery not only propelled new roles but also transversely altered the developed practices over the perioperative period being fundamental to comprehend what is the impact of the program in nursing care. In that sense, this scoping review is pertinent to map the existing knowledge about nursing care for patients undergoing colorectal surgery concerning the ERAS[®] program scope.

Methods

Given the recently-arrived^{*} ERAS program, developing a scoping review is relevant, according to the Joanna Briggs Institute methodology⁽¹¹⁾ aiming to identify the nursing care contemplated by the program in the field of colorectal surgery and, therefore, contribute to the production of knowledge for the benefit of patients that intend the elective surgery.

Therefore, we defined the research question based on PCC (Population, Concept, and Context) methodology: "What is the nursing care for patients undergoing colorectal surgery in the scope of the Enhanced Recovery After Surgery[®] program?" identifying the patients submitted to the surgery as (P), the nursing care as (C), and the *Enhanced Recovery After Surgery[®]* as (C). The research strategy was carried out between 02/12/2019 to 12/12/2019 in the following electronic databases: CINAHL Complete,

MEDLINE Complete, Nursing & Allied Health Collection: Comprehensive, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, Cochrane Methodology Register, Library, Information Science & Technology Abstracts, MedicLatina, and in the b-ON repository with the MeSH descriptors "nursing", "colorectal" and the key-word "enhanced" combined with the boolean operator AND. We defined inclusion criteria: full-text articles published in the last 10 years given the beginning of implementation of the ERAS[®] protocols, written in Portuguese, English and/or French, whose Population were constituted by patients submitted to the colorectal surgery, targets of nursing care in the ERAS[®] program. To systematize the inclusion process of studies we opted for the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses* (PRISMA) methodology.⁽¹¹⁾ We preselected the articles based on the titles, abstracts and we removed the duplicates. With the purpose of selecting the final sample of review we did a complete reading of the studies after the application of the inclusion criteria. Repeated articles were removed as well as the articles that did not address the nursing approach in the scope of the program.

Results

Regarding the research results, we obtained a total of 294 articles in which 274 were excluded due to the duplication, title and abstract, identifying 20 articles for reading according to the inclusion criteria. From this total, we included 13 in the review, as contemplated in the flowchart (Figure 1).

We presented the analysis systematization of the thirteen selected articles according to the adapted instrument of the Scoping Reviews methodological manual from the *Joanna Briggs Institute*, highlighting the main characteristics of the analyzed articles and their respective results (Chart 1).⁽¹¹⁾ The publication period of the articles was between 2009 and 2019 in which are mentioned the nursing intervention in the domain of the ERAS[®] program.

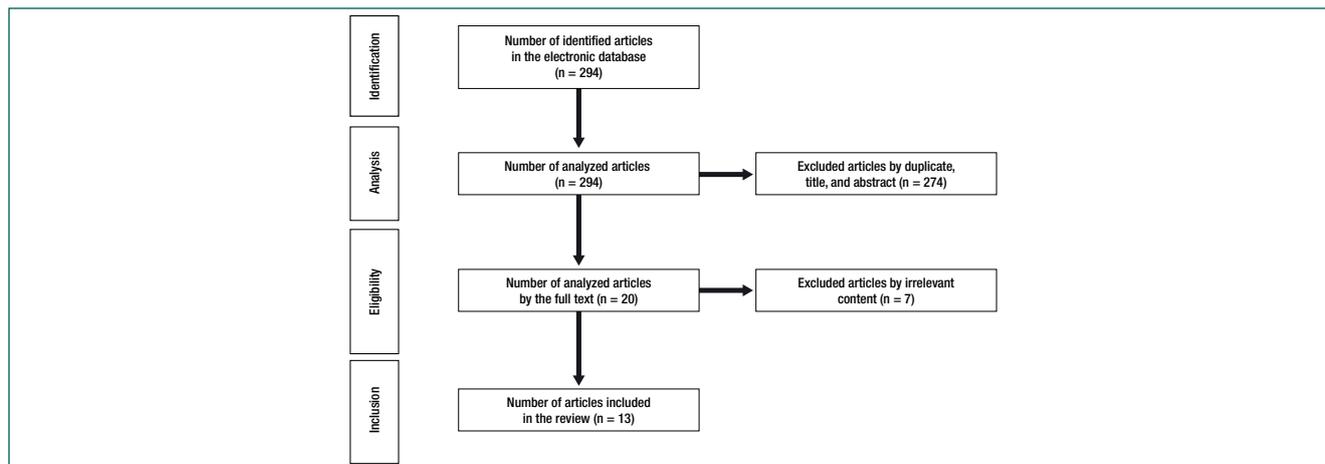


Figure 1. PRISMA flowchart (adapted) of articles’ selection process

Chart 1. Synthesis of the articles included in the Scoping Review

Authors/year	Sample/type of study	Objectives	Results
Burch J, Fecher-Jones I, Balfour A, Fitt I, Carter F. 2017 ⁽²⁾	- 89 nurses - Descriptive and qualitative	To identify the role of ERAS® nurse.	Specialists and/or senior nurses are the most suitable for the ERAS® nurse position due to their extra expertise.
Brown D, Khaja A. 2018 ⁽⁹⁾	- Opinion article	To explore the role of nursing in the implementation of the ERAS® program.	The nursing team leadership and coordination are essential to the dissemination of new practices and cultural changes.
Burch J, Taylor J. 2012 ⁽⁵⁾	- 100 patients undergoing colorectal surgery - Prospective and comparative	To understand the monitoring and recovery process of patients undergoing colorectal surgery in the ERAS® program	The patient monitoring is carried out through follow-up, allowing support and questions explanations related to the recovery process.
Brady KM, Keller DS, Delaney CP. 2015 ⁽⁷⁾	- 18 audited processes from 2013 and 15 audited processes from six months later - Retrospective and Comparative	To identify the nursing care integrated into the program along the perioperative period.	The preoperative nursing care is directed at the patient and family through instructions. In the hospital admission the fasting is minimum and the colic preparation is habitually discontinued. In the intraoperative period, there must be a confirmation of the clinical information, a assurance of the thromboembolism prophylaxis and antibiotherapy, and temperature monitoring. In the postoperative, the nurses have more autonomy to remove the devices and in fluid therapy and analgesia management.
Mitchell M. 2011 ⁽⁶⁾	- Opinion article	To describe the program approach and identify aspects related to nursing practices.	We highlight the instruction to the patient and family with an emphasis on psychosocial aspects and the establishment of contact between the hospital and community contexts as part of the nursing intervention.
Ruel MC, Lapierre A, Côté J, Arbour C. 2019 ⁽⁹⁾	- 1 patient undergoing colorectal surgery - Clinical case	To understand what are the practices of nursing care involved in physiological stress decrease, comfort promotion, and advanced recovery of the patient in the program.	Preoperative care: instruction and optimization, physiological stress decrease (minimum preoperative fasting, hypercaloric drinks ingestion, selective colic preparation). Intraoperative care: minimally invasive approach, normothermia and normovolemia application. Postoperative care: precocious feeding and mobilization, pain-management with multimodal analgesia.
Burch J, Slater R. 2012 ⁽¹⁰⁾	- Opinion article	To describe the concept of advanced recovery after surgery and its benefits to ostomy patients.	Apart from the preoperative appointment, the importance of the stomotherapy nurse care in the physical and psychological preparations of the patient stands out, as well as their effective recovery plan.
Aasa A, Hovbäck M, Berterö CM. 2013 ⁽¹²⁾	- 12 patients undergoing colorectal surgery - Structure interview	To identify and describe the importance of nursing care in the preoperative period according to the ERAS® program.	In the ERAS® program, pre-surgery nursing care focuses on patient empowerment and in the establishment of a collaborative care in order to identify the individual necessities in time and essential support for the post-surgery optimization.
Forsmo HM, Erichsen C, Rasdal A, Tvinnereim JM, Körner H, Pfeffer F. 2018 ⁽¹³⁾	- 80 patients targeted to structured instruction and 84 to traditional instruction. - Randomized controlled	To assess the impact of perioperative instruction in post-surgery recovery in groups of patients.	The patients who received detailed information in the pre and postoperative had a more positive behavior during the recovery period due to their understanding of the purposes of the care, resulting in a short period hospitalization compared to the other group.
Burton J, Allison J, Smart N, Francis N. 2011 ⁽¹⁴⁾	- 240 patients undergoing colorectal surgery - Descriptive and Quantitative	To describe what is the impact of the ERAS® program in the care of ostomized patient after elective surgery.	There was a positive impact in the hospitalization period of ostomized patients as an effect of the nursing care in pre and postoperative regarding instruction, training in ostomy management, and because of the effective and motivational communication.
Bernard H, Foss M. 2014 ⁽¹⁵⁾	- 4 patients undergoing colorectal surgery - Semi-structured interview	To analyze the means of communication between hospital and community context.	Patients recognized as reassuring the following nursing interventions: instructing, scheduling follow-up, providing phone contact, and adequate referencing to the primary healthcare.
Hübner M, Addor V, Sliker J, Griesser AC, Lecureux E, Blanc C, Demartines N. 2015 ⁽¹⁶⁾	- 50 patients undergoing colorectal surgery before the program, 69 during the implantation, and 148 after - Cohort Retrospective	To observe and measure the nurse’s workload before, during, and after the ERAS® program in colorectal surgery started.	With the implementation of the program, Nurses directed their interventions to instruct and empower patients, reflecting a decrease in the workload of nursing.
Burch J. 2009 ⁽¹⁷⁾	- Opinion article	To discuss advanced recovery principles and the workload of nurses from the community.	The nursing care associated with the ERAS® program enables patients to return home earlier with more autonomy and reduces the workload of nurses from the community.

Discussion

The majority of researches about the ERAS[®] program focus their perspective on the role of the surgeon, however, given the multidisciplinary characteristic of a patient's care, the role of the nurse has been increasingly highlighted as a key pillar of the program.

The ERAS[®] program implementation dethroned some of the traditional practices and brought with it a new care culture in light of the current knowledge. To overcome the initial barriers that challenged professional's mentality, leader nurses capable of training and educating teams about the theoretical and scientific basis included in the program stood out, promoting, therefore, quality and security in the care.⁽³⁾ In that sense, a new concept emerges, the ERAS[®] nurse. He/She is distinguished as a team training element, coordinator of the program through monitoring, introduction and promotion of the ERAS[®] *Interactive Audit System* (EIAS) platform data, and contributor of the nursing team patient care. The directed nursing team training was described as fundamental to understand the reasons that sustain the program and believe in its potentialities.^(2,3,7)

One of the analyzed studies suggests that the elements with greater competence to perform the role of the ERAS[®] nurse is the specialists and/or senior nurses. The tasks change according to the institution, but they are assigned to a schedule of 24 to 37,5 hours to fulfill the role in which they must lead the preoperative appointment, monitoring the patient while hospitalized, and providing support in his return home with the respective follow-up.⁽²⁾

In the preoperative period the focus is on the patient optimization and capacitation proposed to the colorectal surgery through instructions.^(6,7,12) During the preoperative appointment, the nurse should inform the patient and the family of all the phases of the surgical experience and clarify their concerns about the hospitalization time, the anesthetic-surgical procedure, the postoperative restrictions, and the referral to primary healthcare.^(12,13) Physical optimization measures are presented as: nutritional status evaluation, physical activity re-

inforcement, smoking and alcoholic cessation, and chronic disease management.⁽⁹⁾ In addition, We reinforce the importance of not only the physical optimization, as well as the psychosocial aspect of the patient and the family, emphasizing the communication for anxiety management and identification of needs.^(7,8)

A study has proved that instructed patients in the pre and postoperative period, allusive to the ERAS program, had a more positive behavior during recovery time because they understood the purposes of the care, resulting in a lower period of hospitalization.^(12,13) The recommendations also suggest a selective intestinal preparation because of the increasing risk of dehydration and hydro-electrolytic imbalance, apart from not existing any scientific evidence for decreasing infection risk. Patients are recommended to ingest a hipercaloric drink combined with a reduction of fasting, aiming to avoid the physiological stress and insulin resistance.^(6,9)

In the intraoperative context, the nursing activities suggested by the program aim the strict control of the body temperature, fluid therapy, vital parameters including monitoring the level of consciousness, neuromuscular relaxation, and pain management thought painkillers such as ketamine and ketorolac, avoiding the use of opioids.^(6,7,9) The antibiotic administration must respect the stipulated time before the surgical incision.^(6,7) The elective surgical approach is the least invasive to the patient, in which is recommended, at the end of the anesthetic-surgical procedure, the removal of the nasogastric tube and the weighting of the suction drains.^(6,7,9)

The constant evaluation and monitoring of nausea, vomit, pain, state of consciousness, and discomfort are the nurse's practices during the postoperative phase.⁽⁹⁾ It is also the nurse's responsibility to initiate the patient's recovery after two or four hours of the surgery through lifting and promoting the oral ingestion of water and tea.⁽⁶⁾ The diet progression is monitored by the multidisciplinary team and, until the patient becomes tolerant to oral ingestion, the intravenous medication should be suspended and, thus, less expensive to the institution.^(6,7) To prevent postoperative cardiorespiratory

complications, patients must remain active and go for a walk at least two times a day, besides practicing respiratory exercises with the assistance of an incentive spirometer.⁽⁷⁾ Targeting the risk of infection reduction, the program recommends the bladder catheter removal on the following day of the surgery if the approach were laparoscopic or in the second day if the approach were open surgery.^(6,7,9) All these parameters are monitored and habitually submitted in the EIAS database by the ERAS® nurse, and it is indispensable that all nurses register the clinical processes for a subsequent audit of the results.⁽³⁾

In the colorectal surgery, the patient may suffer a body image change that is not only related to the surgical incision, but also with a possible creation of an elimination ostomy. The ERAS® program recognizes that such procedure causes a substantial impact in the quality of life of the patient and, therefore, strives for the best service and to provide quality care.^(10,14) Some changes are suggested in the nursing care provided to the ostomized patient, to prepare them to face this new challenge with training resources and tools during the preoperative instruction and a reorganization of the postoperative monitoring.⁽¹⁰⁾ The completion of the ERAS® and stomatherapy appointment provides an adequate level of information to the patient before the surgery and incentives them to play an active role in their recovery, especially regarding stoma care.⁽¹⁰⁾ With program implementation, unlike the conventional approach, patients regain their autonomy, intestinal return, and appetite earlier, facilitating the monitoring and the consecutive postoperative training.^(10,14)

At the time of the clinical recovery, nurses must ensure that the patient feels safe and confident with the idea of returning home providing all the necessary support for the moment of hospital discharge.^(5,14,15) For the recovery to be quietly lived, some measures must be established to give continuity for the care. One of the measures proposed by the program is concerning the follow-up that habitually occurs two weeks after the hospital discharge and must be done by the ERAS® nurse or by a nurse that was involved in the project.⁽⁵⁾ The follow-up is seen as an asset to the patient and the family due to its objective of identify-

ing the necessities and maintaining the continuity of care.^(5,15) This stage will pass for effective communications between the hospital and community contexts through the delivery of all documentation of the hospitalization period.⁽¹⁵⁾ Another proposal suggested by the authors is training one more ERAS® nurse for the community.

Finally, and establishing a connection with all the data cited above, we could deduct that the suggested changes in the nursing interventions would result in an increased workload. However, two different studies counter that idea and determine that the higher the adherence of the protocol, the lower is the workload in both hospital and community context.^(16,17)

In short, the analyzed studies reported a range of interventions related to the ERAS® program that redirects perioperative practices in light of the current knowledge favoring patients undergoing colorectal surgery.

Conclusion

The findings obtained reinforces the importance of a preoperative appointment in which the nurse should instruct the patient and the family promoting a physical and psychological optimization in view of the health/disease transitional process. In the preoperative phase, the nursing care is directed at fast minimization and a more selective colic preparation. In the intraoperative context, nurses should guide their practices based on a minimally invasive approach with multimodal anesthesia and rigorous patient monitoring. In the postoperative, nurses should guide an advanced recovery strategy with a possible intervention of the stomatherapist nurse. Regarding the patient's return home, complementary interventions that aim effective monitoring of the patient and the family are implemented such as follow-up, concession of contact for support and referencing to the primary healthcare. Although some interventions match the habitually carried out practices, a few of them are new which contribute to the knowledge production of the perioperative nursing field.

Collaborations

Carrilho MPG, Pontífice-Sousa P and Marques RMD contributed to the conception of this project, analysis and data interpretation, writing of the article, relevant critical review of the intellectual content, and final approval for the version to be published.

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