
EXAMINING ENHANCED RECOVERY AFTER SURGERY IN COLORECTAL PROCEDURES: PERSPECTIVES OF SURGICAL RESIDENTS AT KHYBER TEACHING HOSPITAL, PESHAWAR

Zarka Ahmad¹, Muslihuddin², Khalid Furqan³, Khan Shahzeb³,
Maroof Asad³, Saeed Sarmad³, Fazal Rabbi⁴, Tawseef Ahmad^{*5}

¹ Department of surgery, Kuwait Teaching Hospital, Peshawar Khyber Pakhtunkhwa, Pakistan

² Department of General Surgery, Saidu Group of Teaching Hospitals Swat Khyber Pakhtunkhwa, Pakistan

³ Department of Surgery, Khyber Teaching Hospital, Peshawar Khyber Pakhtunkhwa, Pakistan

⁴ Intensive Care Unit Saidu Group of Teaching Hospital Swat, Khyber Pakhtunkhwa, Pakistan

^{5*} Department of Clinical Pharmacy, Faculty of Pharmaceutical Sciences, Prince of Songkla University, Hat-Yai, Thailand

Corresponding Author Email: tausifsafi95@gmail.com

ABSTRACT:

This study aimed to explore the concept of enhanced recovery after surgery (ERAS) in colorectal surgical procedures among surgical residents at Khyber Teaching Hospital (KTH), Peshawar. This study focused on the residents' knowledge, attitudes, and practices (KAP) regarding ERAS. Data collection took place from August 2022 to September 2022 using a self-administered questionnaire. The study included a total of fifty residents who met the inclusion criteria and were actively working across four general surgery units, namely A, B, C, and D. Among them, 28 residents (56%) demonstrated familiarity with the Enhanced Recovery after Surgery protocol, while 22 residents (44%) were unaware of it. The majority of residents (70%) acquired their knowledge of the pathway from surgical textbooks. Only 42% of the participants recognized the ERAS program as an internationally recognized protocol for optimizing colorectal disease patients. Regarding the utilization of ERAS components, the pre-operative category was the most frequently implemented (72%), followed by post-operative (24%) and perioperative (4%) components. Early removal of nasogastric tubes and urinary catheters (8%) was the most commonly practiced component. A significant proportion of residents (42%) emphasized the importance of a pre-application protocol briefing. Additionally, most residents believed that incorporating and teaching each component of ERAS in regular clinical practice was essential. Overall, this descriptive study sheds light on the knowledge, attitudes, and practices of surgical residents at KTH regarding enhanced recovery after surgery in colorectal procedures. The findings highlight areas of strength and areas that need improvement, providing valuable insights for further implementation and education of ERAS protocols.

Keywords: Enhanced Recovery after Surgery, Protocols of surgery, colorectal procedures, Pakistan.

1. INTRODUCTION:

Enhanced Recovery after Surgery or ERAS is an amalgam of multimodal peri and post-operative care pathways. It is a program designed to attain early recovery after surgery by optimizing pre-operative body system functions, reducing peri-operative complications and decreasing post procedure stress (Kehlet & Dahl 2003; Wilmore & Kehlet 2001). The concept of ERAS was first introduced by Professor Henrik Kehlet in 1990 (Walter & Collin 2007). Since then, such protocol pathways have become an important part of surgical care management (Fearon et al 2005). It is an attempt to modify physiological and psychological response of the body to major stress conditions like surgery (Varadhan et al 2010).

The key components of this program have been divided into three parts pre, peri and post-operative care. Preoperative components are pre admission counselling, avoidance of mechanical bowel preparation, preoperative carbohydrate loading, avoidance of preoperative dehydration, antibiotic and anti-thrombotic prophylaxis. The Peri-operative care regimen includes short acting anaesthetic agents, mid thoracic or epidural analgesia, avoidance of opiate analgesia, short transverse incisions or laparoscopic procedures, avoidance of peri-operative fluid overload and maintenance of perioperative temperature. Post-operative care main components consist of prevention of post-operative nausea and vomiting, early mobilization, early introduction of fluids and diet, prevention of post-operative ileus, early removal of urinary catheters and nasogastric tubes and continual audit of outcomes (Walter et al 2009).

Enhanced Recovery Program is currently being used in all surgical specialities for optimum post procedural results and a smooth recovery. In the last decade such care pathways have been applied in colorectal surgeries and evidence has shown that it is now considered as a gold standard care regimen for patients undergoing colorectal procedures (Adamina et al 2011; Kehlet & Wilmore 2008). Despite that, the process of its implementation has been a slow process as it is a multidisciplinary approach, hence requires a shift in mindset and clinical approach to adhere to the protocols (Ahmed et al 2010; Eskicioglu et al 2009). The primary aim of our study is to have an insight on the concept of ERAS in colorectal surgeries among surgical residents as they act as pillars along with surgeons and nursing staff for its application. We want to have an overview of their knowledge, concepts and approach of clinical application of the program. As it's a new concept introduced in our part of the world, this study can be considered one of the first to be conducted on residents.

2. METHODS AND MATERIAL

A descriptive KAP (knowledge attitude and practice) study was conducted in Khyber teaching hospital (KTH) from August 2022 to September 2022. To conduct the study a formal permission was obtained from Hospital Director and Chairman of Department of Surgery, Khyber Teaching Hospital, Peshawar. A total of fifty residents working in the four general surgery units (A, B, C, D) that were present on duty were included in the study while the residents on rotation to different surgical speciality units or on official leave along with those not performing duty in their respective wards were excluded. During the mentioned time period, experience of the surgical residents in terms of pre, peri and post-operative components of the Enhanced Recovery after Surgery Program was recorded by a self-administered questionnaire. It also consisted

questions regarding their need of educating them about the key components, their designated role and on how to clinically implement the program in a standard applicable manner. Also, an overview about their knowledge and easy applicability of the different sub sections of the pathway was also a part of the questionnaire. The main components of the pathway in a tabulated version were a part of the questionnaire for the ease of residents to understand each section and hence can answer the questions with clarity. The demographic questions included was year of residency.

3. RESULTS

A total of 50 residents were a part of the study according to the inclusion criteria with a frequency of 18 (36%) first year, 5 (10%) second year, 12 (24%) third year and 15 (30%) fourth year resident surgeons. A total number of 28 (56%) residents were able to identify Enhanced Recovery after Surgery protocol while 22 (44%) could not recognize it. 36 (72%) resident surgeons correctly knew the meaning of the abbreviation ERAS and 14 (28%) could not comprehend it. According to 35 (70%) surgical residents their source of knowledge about the protocol came from text books of surgery. Another 10 (20%), 5(10%) declared internet/social media and clinical practice as their medium to gather knowledge about the regimen. Among the participants 29 (58%) did not know that ERAS is used as a standard protocol for optimizing patients of colorectal diseases (malignant and benign) and 21 (42%) had the knowledge obtained from various mediums that it is considered as an international standard protocol to optimize the patients suffering from colorectal diseases. 24 (48%) residents identified the fact that it is a multimodal regimen while 26 (54%) never knew that the program consist of a large number of applied interventional components and subsets. Participants who had pre-briefing of the components and technique of clinical application were 12 (24%) and 14 (28%). But a majority also never had the opportunity, comprising a total number of 38 (72%) not having pre-briefing of program and 36 (72%) techniques of application of the program components in clinical practice. Among subsets the pre-operative category was the most frequently used with a frequency of 36 (72%) followed by post-operative 12 (24%) and perioperative 2 (4%) respectively. According to the residents, early removal of nasogastric tubes and urinary catheters 8 (16%) was the component commonly practiced followed by preadmission counselling 7 (14%) and avoidance of mechanical bowel preparation 6 (12%). The frequency of the components like early introduction of fluids and diet, pre-operative carbohydrate loading and early mobilization was 5 (10%). 4 (8%), 3 (6%) was the frequency of the component's avoidance of peri-operative fluid overload and prevention of post-operative nausea and vomiting. Antibiotic prophylaxis had frequency of 2 (4%). Components like avoidance of pre-operative dehydration, short acting anaesthetic agents, maintenance of perioperative temperature, prevention of postoperative ileus and continual audit outcomes were the least applied in clinical practice with a frequency of 1 (2%). The clinical experience of residents with respect to application of ERAS on the outcome of patient recovery was considered beneficial by 9 (18%). 17 (34%) termed it to have a satisfactory response. A large number of participants with a frequency of 24 (48%) had no knowledge of impact on patients. Majority of the resident surgeons 42 (84%) emphasized on the specific need of pre application protocols briefing. Only 8 (16%) did

not agree with fact that a pre-briefing is required for a better application of Enhanced Recovery after Surgery.

4. DISCUSSION:

Enhanced Recovery after Surgery is considered as a standard protocol for pre, peri and post-operative optimization of patients not in only general surgery but also in other sub specialties of surgery in the present era. Program was first introduced for patients of colorectal diseases (Spanjersberg et al 2011). In 2011 a Cochrane review was performed which showed that application of Enhanced Recovery Program was associated with a decrease in the overall complications post operation in patients suffering from colorectal diseases (King et al 2006). Despite growing evidence from numerous randomized control trials, systemic reviews and meta-analysis suggest a tremendous beneficial impact of ERAS protocols, hindrance has been faced in application of these guide lines in clinical practice (Gouvas et al 2009; Walter et al 2006).

The current study gives an insight on the concept of enhanced recovery after surgery in colorectal surgeries among surgical residents of Khyber Teaching Hospital, Peshawar in terms of their knowledge, attitude and concepts with respect to application of each component of the program in clinical practice. A total number of fifty residents were a part of our study. The results of the study depict that Enhanced Recovery after Surgery is still a new concept in our clinical setup and it can be considered as a first study conducted on residents. Majority of the residents were not able to identify each component of the protocol and hence were not able to practice it. According to the participants it was text books of surgery which became a source of their knowledge of ERAS instead of clinical setup. It was the pre-operative part of the protocol to which most of the surgical trainees were familiar with. Half of residents could not appreciate the fact that ERAS has a beneficial impact on optimization of patients because of their inadequate knowledge and also due to failure of initiation of such protocols on regular basis in our tertiary care setup. Participants who have applied the program noted a better outcome. Another important factor which needs emphasis is most of the resident surgeons were not pre briefed about the components, their importance and how to apply them accurately for optimized results, due to which nearly all the participants were of the opinion to have pre-briefing sessions of ERAS. And it should be considered as a necessary step to be implanted, as residents are one of the prime pillars in providing patient care in our setup.

The study of Catherine Jane Walter et al showed that one-third of surgeons admitted that they had never heard about such protocols, while 40 consultants also expressed that inadequate interdisciplinary and community support is another reason for failure of implementation of the pathways (Walter et al. 2006)

Another study by Arman kahokehr et al showed that implementation of such protocols require trained team and experience of all the members has a pivotal role on the success of the program application (Kahokehr et al 2009).

5. CONCLUSION:

The current study gives an insight on the knowledge, concepts and current trends of the ERAS in resident surgeons. Most of the residents labelled it as a pre requisite to be taught about each component of the protocol and necessitate its use in regular clinical practice.

Table 1: Showing number of residents belonging to each level of residency program

First year	18 (36%)
Second year	5 (10%)
Third year	12 (24%)
Fourth year	15 (30%)
Total	50 (100%)

Table 2: showing percentage of residents knowing about Enhanced Recovery after Surgery

Knowledge about Enhanced Recovery After Surgery Protocol			Total
Residents identifying ERAS	Yes	No	50
	28 (56%)	22 (44%)	(100%)
Residents' knowledge of abbreviation ERAS	Yes	No	50
	36 (72%)	14 (28%)	(100%)

Table 3: showing residents source of acquiring knowledge regarding ERAS

Text Books of Surgery	35 (70%)
Internet/social media	10 (20%)
Clinical Practice	5 (10%)
Total	50 (100%)

Table 4: showing percentage of residents recognizing ERAS as a multimodal and standard protocol for

Standard and Multimodal Protocol for Optimization of Patients			Total
Standard Protocol for optimization of patients	Yes	No	50
	21 (42%)	29 (58%)	(100%)
Multimodal Regimen	Yes	No	50
	24 (48%)	26 (54%)	(100%)

optimizing patients of colorectal diseases (malignant and benign)

Table 5: showing an overview of residents being pre briefed about regimen of ERAS and on application in Clinical Practice for colorectal diseases

Pre-briefing of components and their application in clinical practice			Total
Pre briefing of regimen	Yes	No	50
Before application	12 (24%)	38 (72%)	(100%)
Application of ERAS in Clinical Practice	Yes	No	50
	14 (28%)	36 (72%)	(100%)

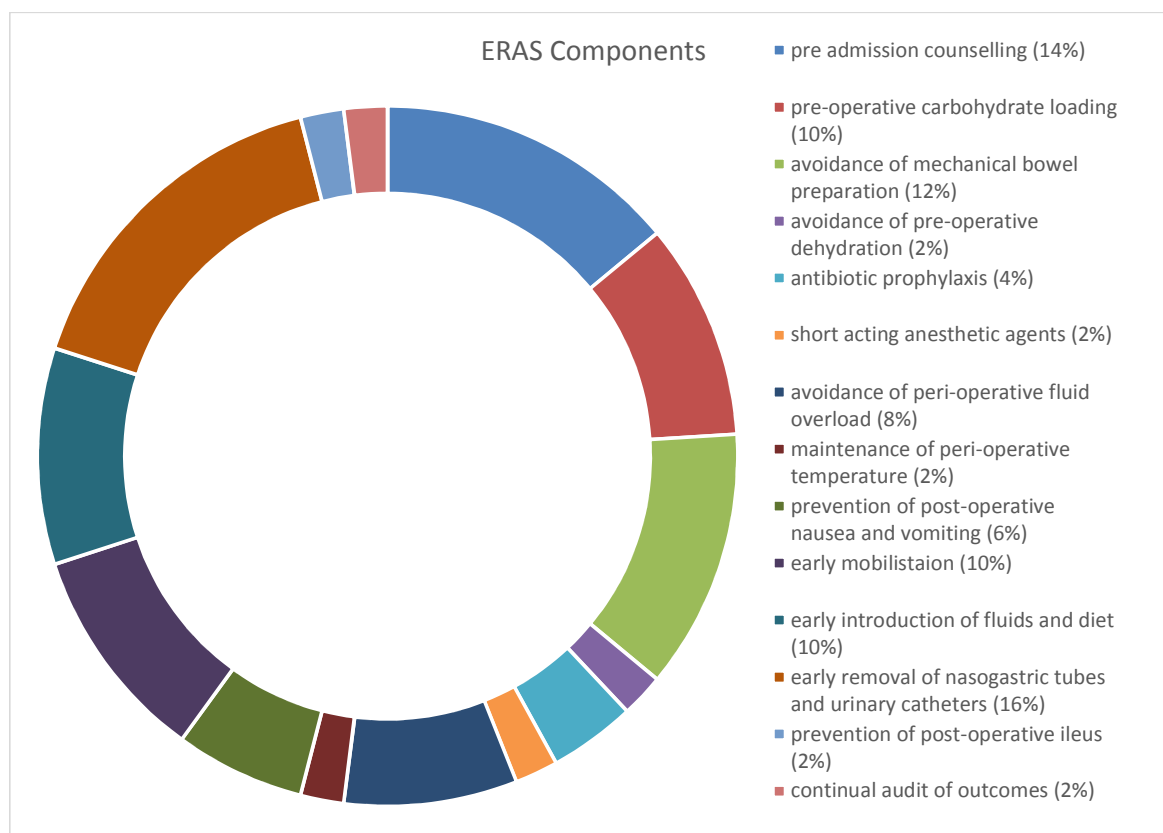


Figure 1: showing individual components of ERAS

6. REFERENCES

- [1]. Adamina M, Kehlet H, Tomlinson GA et al (2011) Enhanced recovery pathways optimize health outcomes and resource utilization: a meta-analysis of randomized controlled trials in colorectal surgery. *Surgery* 149(6): 830-840.
- [2]. Ahmed J, Khan S, Gatt M et al (2010) Compliance with enhanced recovery programmes in elective colorectal surgery. *Journal of British Surgery* 97(5): 754-758.
- [3]. Eskicioglu C, Forbes SS, Aarts M-A et al (2009) Enhanced recovery after surgery (ERAS) programs for patients having colorectal surgery: a meta-analysis of randomized trials. *Journal of gastrointestinal surgery* 13: 2321-2329.

- [4]. Fearon K, Ljungqvist O, Von Meyenfeldt M et al (2005) Enhanced recovery after surgery: a consensus review of clinical care for patients undergoing colonic resection. *Clinical nutrition* 24(3): 466-477.
- [5]. Gouvas N, Tan E, Windsor A et al (2009) Fast-track vs standard care in colorectal surgery: a meta-analysis update. *International journal of colorectal disease* 24: 1119-1131.
- [6]. Kahokehr A, Sammour T, Zargar-Shoshtari K et al (2009) Implementation of ERAS and how to overcome the barriers. *International Journal of Surgery* 7(1): 16-19.
- [7]. Kehlet H, & Dahl JB (2003) Anaesthesia, surgery, and challenges in postoperative recovery. *The Lancet* 362(9399): 1921-1928.
- [8]. Kehlet H, & Wilmore DW (2008) Evidence-based surgical care and the evolution of fast-track surgery. *Annals of surgery* 248(2): 189-198.
- [9]. King P, Blazeby J, Ewings P et al (2006) Randomized clinical trial comparing laparoscopic and open surgery for colorectal cancer within an enhanced recovery programme. *Journal of British Surgery* 93(3): 300-308.
- [10]. Spanjersberg WR, Reurings J, Keus F et al (2011) Fast track surgery versus conventional recovery strategies for colorectal surgery. *Cochrane Database of Systematic Reviews*(2).
- [11]. Varadhan KK, Lobo DN, & Ljungqvist O (2010) Enhanced recovery after surgery: the future of improving surgical care. *Critical care clinics* 26(3): 527-547.
- [12]. Walter C, & Collin J (2007) Systematic review of enhanced recovery programmes in colonic surgery (*Br J Surg* 2003; 93: 800–809). *Journal of British Surgery* 94(2): 248-248.
- [13]. Walter C, Collin J, Dumville J et al (2009) Enhanced recovery in colorectal resections: a systematic review and meta-analysis 1. *Colorectal Disease* 11(4): 344-353.
- [14]. Walter CJ, Smith A, & Guillou P (2006) Perceptions of the application of fast-track surgical principles by general surgeons. *The Annals of The Royal College of Surgeons of England* 88(2): 191-195.
- [15]. Wilmore DW, & Kehlet H (2001) Management of patients in fast track surgery. *Bmj* 322(7284): 473-476.

Cite this Article:

Zarka Ahmad, Muslihuiddin, Khalid Furqan, Khan Shahzeb, Maroof Asad, Saeed Sarmad, Fazal Rabbi, Tawseef Ahmad, "Examining enhanced recovery after surgery in colorectal procedures: Perspectives of surgical residents at Khyber teaching hospital, Peshawar", *International Journal of Scientific Research in Modern Science and Technology (IJSRMST)*, ISSN: 2583-7605 (Online), Volume 2, Issue 7, pp. 15 - 21, July 2023.

Journal URL: <https://ijstrmst.com/>