


BMJ Open Issues in patients' experiences of enhanced recovery after surgery (ERAS) : a systematic review of qualitative evidence

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ABSTRACT

Objective To explore patients' experiences of enhanced recovery after surgery (ERAS) and to identify issues in the implementation of ERAS from the patient's perspective.

Design The systematic review and qualitative analysis were based on the Joanna Briggs Institute's methodology for conducting synthesis.

Data sources Relevant studies published in four databases, that is, Web of Science, PubMed, Ovid Embase and the Cochrane Library, were systematically searched, and some studies were supplemented by key authors and reference lists.

Study selection Thirty-one studies were identified, involving 1069 surgical patients enrolled in the ERAS programme. The inclusion and exclusion criteria were formulated based on the Population, Interest of phenomena, Context, Study design criteria recommended by the Joanna Briggs Institute to determine the scope of article retrieval. The inclusion criteria were as follows: ERAS patients' experiences; qualitative data; English language and published from January 1990 to August 2021.

Data extraction Data were extracted from relevant studies using the standardised data extraction tool from Joanna Briggs Institute Qualitative Assessment and Review Instrument for qualitative research.

Data synthesis The themes in the structure dimension are as follows: (1) patients cared about the timeliness of healthcare professionals' help; (2) patients cared about the professionalism of family care; and (3) patients misunderstood and worried about the safety of ERAS. The themes in the process dimension are as follows: (1) patients needed adequate and accurate information from healthcare professionals; (2) patients needed to communicate adequately with healthcare professionals; (3) patients hoped to develop a personalised treatment plan and (4) patients required ongoing follow-up services. The theme in the outcome dimension is as follows: patients wanted to effectively improve severe postoperative symptoms.

Conclusions Evaluating ERAS from the patient's perspective can reveal the omissions and deficiencies of healthcare professionals in clinical care so that problems in patients' recovery process can be solved in a timely manner, reducing potential barriers to the implementation of ERAS.

PROSPERO registration number CRD42021278631.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This systematic review is the first to identify and synthesise the existing qualitative evidence on issues related to experiences of enhanced recovery after surgery implementation from patients' perspective.
- ⇒ A second reviewer repeated the initial search with a high level of agreement and reviewed the data extraction process and theme selection to ensure that the findings were representative.
- ⇒ Rigorous methods were applied, informed by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines and assessed using the Joanna Briggs Institute Qualitative Assessment and Review Instrument for qualitative research.
- ⇒ The qualitative studies included small, selected groups of participants whose expressed views were likely to be affected by both recall bias and social desirability bias.
- ⇒ The limitations of this study include the restriction to English-language articles, potentially restricting the transferability of the review findings and the evidence base.

INTRODUCTION

Enhanced recovery after surgery (ERAS), also known as 'fast-track surgery', was proposed by Kehlet in 1997.^{1 2} ERAS is a multimodal perioperative care pathway (<http://eras-society.org>), designed to achieve the goals of optimising perioperative management, reducing perioperative complications and enhancing postoperative recovery.²⁻⁴ At present, ERAS has been successfully applied to general, orthopaedic, urological and other operations, and many guidelines and expert consensus have been developed for each specialty, marking the maturity of the application of ERAS.³⁻¹⁰ However, previous studies have found that patients' low compliance with ERAS pathways limits the application and popularisation of ERAS.^{11 12}

The clarified definition of self-care is ‘the ability to care for oneself through awareness, self-control, and self-reliance in order to achieve, maintain, or promote optimal health and well-being’.¹³ Previous studies have shown that self-care is effective at reducing levels of distress and improving quality of life^{14 15} and that enhancing the self-care ability of ERAS patients is helpful in improving their prognoses.¹⁶ Because of the short length of hospitalisation, ERAS patients have fewer opportunities to consult with healthcare professionals and receive self-care education.¹⁷ ERAS patients need more care and support in resuming normal life than traditional patients.¹⁶ Therefore, improving the self-care ability of ERAS patients can have a positive impact on their quality of life and perioperative experience.

In fact, ERAS aims to improve patients’ perioperative experience and outcomes,¹⁸ and patients’ experience can affect their perceptions of care, treatment, rehabilitation and follow-up. A positive patient experience is associated with shorter hospital stays, lower readmission rates and lower costs.¹⁹ At the same time, fully understanding the patient’s point of view when assessing medical quality is considered as important as clinical effectiveness and patient safety.²⁰ In addition, patient compliance with all ERAS pathways is crucial but often difficult to accomplish.²¹ Therefore, understanding, analysing and solving the issues existing in the implementation of ERAS from the perspective of patients’ experiences are conducive to improving patient compliance, further improving the effect of ERAS implementation.

The commonly used quantitative research methods are often difficult to identify or quantify the subjective experience and attitude of patients.^{22 23} Therefore, qualitative methods that can more deeply understand the experiences and attitudes of ERAS patients have become an important area of clinical research.²² Presently, there is only sparse knowledge regarding patients’ experiences of participating in ERAS.²⁴ In 2017, Sibbern *et al* conducted a systematic review of 11 qualitative studies on ERAS patients’ experiences to advance knowledge of patients’ experiences of participating in ERAS programmes.²⁵ Unlike the previous study, this systematic review analysed the experience of ERAS patients from qualitative studies and the qualitative data of mixed studies, and further

refined and summarised the issues in the implementation of ERAS based on the SPO model.

The aim of this systematic review was to analyse the issues in the implementation of ERAS from the perspective of patients based on the SPO model, including the issues of patients themselves and the issues caused by medical resources, healthcare professionals and family members.

METHODS

In this systematic review, a thematic synthesis methodology of qualitative data was used to summarise, explain and interpret the existing evidence about the patient’s adverse experience in the ERAS programme.²⁶ This systematic review protocol was registered in the PROSPERO database (CRD42021278631).

Search strategy

This systematic review used a comprehensive search strategy to identify all available studies. Following a brief scoping search, the SPIDER tool (Sample, Phenomenon of Interest, Design, Evaluation, Research type) was used to develop the search strategy (table 1).²⁷ Relevant studies published in four databases, that is, Web of Science, PubMed, Ovid Embase and the Cochrane Library, from January 1990 to August 2021, were systematically searched. The reference lists of all included studies were also manually searched. The search strategy was reviewed by an information scientist in a medical library and was adapted for each database. Only English publications were included.

Selection criteria

The following inclusion and exclusion criteria were formulated based on the Population, Interest of phenomena, Context, Study design criteria recommended by the Joanna Briggs Institute (JBI) to determine the scope of article retrieval. This review considered studies that focused on qualitative data, including but not limited to designs, such as phenomenology, grounded theory, action research and ethnography. The inclusion and exclusion criteria of this systematic review are shown in box 1.

Table 1 Search terms used in the systematic review

1 S—Sample	Patient* OR Client* OR Consumer*
2 PI—Phenomenon of Interest (Subject)	Enhanced recovery after surgery* OR ERAS* OR Fast track* OR Enhanced recovery* OR ERP*
3 PI—Phenomenon of Interest (Sector)	Surgery* OR Nursing* OR Nutrition*
4 PI—Phenomenon of Interest (Setting)	hospital* OR home* OR community* OR discharge*
5 D—Design	Experience* OR Attitude* OR Opinion* OR View* OR Perspective* OR Feeling*
6 E—Evaluation	Semistructured interview* OR Phenomenolog* OR Grounded theor* OR discourse analys* OR Ethnograph*
7 R—Research type	qualitative* OR mixed methods*

Box 1 Inclusion criteria and exclusion criteria used in the systematic review

Inclusion criteria

- ⇒ P—Population: adult surgical patient populations (aged 18 years or over) participating in the ERAS programme, regardless of type of disease, and excluding caregivers.
- ⇒ I—Interest of phenomena: the patient's experience, attitude and feeling during the ERAS programme.
- ⇒ Co—Context: the perioperative period and after discharge from the hospital.
- ⇒ Study design: qualitative study or data from qualitative component of mixed-methods study.

Exclusion criteria

- ⇒ Quantitative methodology.
 - ⇒ The study did not clarify the experience after the application of the ERAS programme from the patient's perspective.
 - ⇒ Patients did not participate in the ERAS programme.
 - ⇒ Non-English-language publications.
 - ⇒ Opinion papers, editorials, literature reviews and dissertations.
 - ⇒ Full text not available.
- ERAS, enhanced recovery after surgery.

Study selection

After using EndNote Reference Manager software to remove duplicate studies, the two authors (DW and LC) independently performed a preliminary screening based on the title and abstract to identify potentially eligible studies. The full texts of studies that might meet the criteria were then reviewed to identify the final eligible studies. Potential disagreements between the two authors were resolved by discussion with a third author (YH). The literature search process for this systematic review adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines.²⁸

The results of the search and selection process are illustrated in figure 1. As shown, 3783 records were found in the database searches. After duplicates were removed, 3035 records remained. After titles and abstracts were assessed, 2688 records were excluded, and 347 records

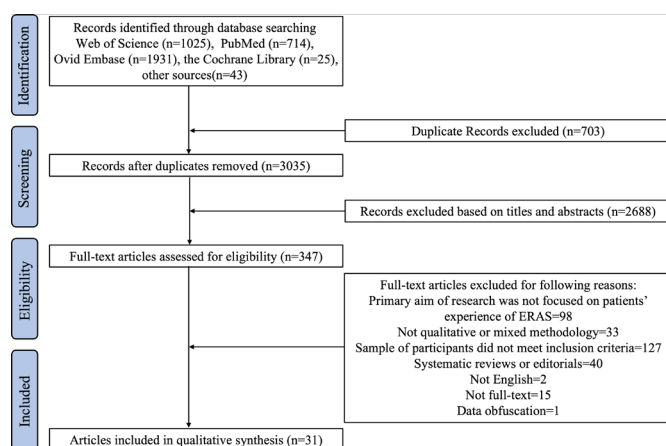


Figure 1 PRISMA flow diagram. ERAS, enhanced recovery after surgery; PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

that possibly met the inclusion criteria remained. Further full-text examination of these articles by team members was needed. Two authors independently read 347 full-text articles, and 31 articles^{29–59} were included in the final analysis. The results have been reported in line with enhancing transparency in reporting the synthesis of qualitative research guidelines.⁶⁰

Quality assessment

Methodological quality was assessed using the JBI Qualitative Assessment and Review Instrument for qualitative research (JBI-QARI) (online supplemental file 1). The JBI-QARI critical appraisal tool has a checklist outlining 10 criteria for establishing the appropriateness of the methodological approach, the methods used and the representation of the voices of participants in studies.⁶¹ Following the appraisal of the selected studies, two reviewers (DW and XC) met and clarified their interpretation of the appraisal tool and discussed discrepancies in scoring. Any disagreements that arose between the reviewers were resolved through discussion or with a third reviewer (ZL). The reviewers had all participated in qualitative research or published qualitative research articles. The agreed results of the primary and secondary reviewers using the JBI-QARI are summarised in table 2. Considering that critical appraisal of qualitative research remains controversial,^{62–65} hence it may not be fruitful to exclude studies which fail to meet certain/all questions in the critical appraisal.⁶¹ Thus, after consulting and reviewing the literature for current best practices for those engaged in qualitative synthesis and/or ideas around critical appraisal, no study was excluded for failing to meet all 10 questions. Certain questions that were essential to be met to be included in this systematic review were not specified.

Data extraction

Data that included statements or texts of interest were extracted from papers using the standardised data extraction tool from JBI-QARI. Descriptive data that were extracted included country, setting, participants, research methods and data analysis. Qualitative study findings were extracted as themes, declarations or statements identified by the authors of each study. The presentation of the themes varied, sometimes appearing as headings and subheadings in the paper.⁶¹

Theoretical framework

In this systematic review, the SPO model was used to analyse the issues of structure (S), process (P) and outcome (O) that potentially affect the implementation of the ERAS programme. The SPO model proposed by Donabedian considers various factors in evaluating medical quality.^{66 67} The SPO model is underpinned by a theoretical assumption that a good structure should promote a good process and a good process should promote good outcomes, which is conducive to guiding the effective improvement of medical quality.⁶⁸ Therefore, the SPO model is

Table 2 Basic methodological details in the included studies

Authors and year	Country	Participants	Methodology and data collection	Method of analysis
Galli <i>et al</i> , 2015 ²⁹	Italy	13 pancreatic surgery patients	Qualitative semistructured interview	Interpretative phenomenological approach
Svensson-Raskh <i>et al</i> , 2020 ³⁰	Sweden	23 abdominal surgery patients	Qualitative semistructured interview	Content analysis
Blazeby <i>et al</i> , 2010 ³¹	UK	20 colorectal surgery patients	Qualitative semistructured interview	Grounded theory
Reynolds <i>et al</i> , 2018 ³²	Australia	417 robot-assisted radical prostatectomy patients	Mixed-methods open-ended questions, focus groups and telephone interviews	Thematic analysis
Phillips <i>et al</i> , 2019 ³³	UK	7 non-cancer gynaecology patients	Qualitative interview	Interpretative phenomenological analysis
Poland <i>et al</i> , 2017 ³⁴	UK	97 colorectal surgery patients, 19 carers and 22 clinical staff	Qualitative observations, questionnaires, semistructured longitudinal interview, focus groups and documentation review	Thematic analysis
Rattray <i>et al</i> , 2019 ³⁵	Australia	16 colorectal surgery patients	Qualitative semistructured interview	Thematic analysis
Wennström <i>et al</i> , 2020 ³⁶	Sweden	65 colorectal surgery patients	Mixed-methods two open-ended questions in the questionnaire	Content analysis
Aasa <i>et al</i> , 2013 ³⁷	Sweden	12 colorectal surgery patients	Qualitative semistructured interview	Interpretative phenomenological analysis
Gillis <i>et al</i> , 2019 ³⁸	Canada	27 colorectal surgery patients	Qualitative narrative interviews and focus groups	Thematic analysis
Gillis <i>et al</i> , 2017 ³⁹	Canada	27 colorectal surgery patients	Qualitative narrative interviews and focus groups	Grounded theory
Krogsgaard <i>et al</i> , 2014 ⁴⁰	Denmark	7 colonic cancer surgery patients	Qualitative semistructured interview	Interpretative phenomenological analysis
Short <i>et al</i> , 2016 ⁴¹	UK	16 colorectal surgery patients	Qualitative semistructured interview	Thematic analysis
Evans <i>et al</i> , 2021 ⁴²	USA	14 minimally invasive sacrocolpopexy patients	Qualitative semistructured interview	Grounded theory
Liu <i>et al</i> , 2019 ⁴³	China	46 neurosurgical surgery patients	Mixed-methods semistructured interview	Interpretative phenomenological analysis
Jakobsson <i>et al</i> , 2017 ⁴⁴	Sweden	10 colorectal cancer surgery patients	Qualitative semistructured interview	Descriptive phenomenological analysis
Rydmark and Berterö, 2021 ⁴⁵	Sweden	16 abdominal gynaecological surgery patients	Qualitative interview	Thematic analysis
Lithner <i>et al</i> , 2015 ⁴⁶	Sweden	16 colorectal cancer surgery patients	Qualitative semistructured interview	Content analysis
Donsel and Missel, 2021 ⁴⁷	Denmark	15 thoracic surgery patients	Qualitative non-structured interview	Hermeneutical analysis
Samuelsson <i>et al</i> , 2018 ⁴⁸	Sweden	16 colorectal cancer surgery patients	Qualitative semistructured interview	Content analysis
Dos Santos Marques <i>et al</i> , 2020 ⁴⁹	USA	43 colorectal surgery patients	Qualitative focus groups	Thematic analysis
Norlyk and Harder, 2009 ⁵⁰	Denmark	16 colonic surgery patients	Qualitative in-depth interviews	Descriptive phenomenological analysis

Continued

Table 2 Continued

Authors and year	Country	Participants	Methodology and data collection	Method of analysis
Vandrevala <i>et al</i> , 2016 ⁵¹	UK	20 liver surgery patients	Qualitative semistructured interview	Thematic analysis
Archer <i>et al</i> , 2014 ⁵²	UK	14 cancer gynaecological surgery patients	Qualitative semistructured interview	Interpretative phenomenological analysis
Sjøveian and Leegaard, 2017 ⁵³	Norway	12 hip or knee arthroplasty patients	Qualitative semistructured interview	Content analysis
Fielden <i>et al</i> , 2003 ⁵⁴	New Zealand	33 total hip-joint replacement surgery patients	Qualitative in-depth and semistructured interviews	Thematic analysis
Heine <i>et al</i> , 2004 ⁵⁵	Australia	5 total hip replacement surgery patients	Qualitative in-depth unstructured interviews	Grounded theory
Webster <i>et al</i> , 2014 ⁵⁶	Canada	12 hip or knee replacement surgery patients	Qualitative interview	Secondary analysis
Fecher-Jones and Taylor, 2015 ⁵⁷	UK	11 colorectal surgery patients	Qualitative semistructured interview	Interpretative phenomenological analysis
Wagner <i>et al</i> , 2005 ⁵⁸	Denmark	10 hysterectomy surgery patients	Qualitative semistructured interview	Typical-type methodology
Jonsson <i>et al</i> , 2011 ⁵⁹	Sweden	13 colorectal surgery patients	Qualitative interview	Interpretative phenomenological analysis

valuable in organising medical quality evaluation and has been widely adopted in ERAS quality evaluation research.^{69 70} In this systematic review, the SPO model was used to analyse the issues of SPO that potentially affect patients' implementation of ERAS programmes. The 'structure' refers to the support of medical resources and the attitudes and needs for medical measures, such as reserves of in-hospital resources (facilities, equipment and funds), discharge resources and patient cognition. The 'process' refers to the specific execution quantity and quality of each link in a medical activity implementation plan, such as the execution rate and execution quality of each ERAS programme. The 'outcome' refers to the final evaluation results after the end of medical services, such as patient satisfaction, postoperative symptoms and medical costs.^{66 67}

Thematic synthesis

Thematic analysis was the method used in this study to analyse qualitative data collected from the systematic review. The main content of the selected research was analysed, the theme concepts were extracted, and the new findings related to this study were analysed and summarised.⁶² The new findings included identifiable themes, statements or declarations made by the authors of the reviewed studies. Studies without identifiable findings or elaborations of findings were excluded. Data extraction was performed by carefully reading and reflecting on the content of the reviewed studies, and the core themes of this study were formed by following the three stages described by Thomas and Harden.⁶²

In the first stage, the authors (DW and XC) repeatedly read the studies and found that patients generally had a positive attitude towards the implementation of ERAS programmes. However, ERAS patients also raised some of the issues encountered during the perioperative period and worked to effectively solve these issues for a better experience. Based on repeated reading and understanding of the results of all the studies, the two authors independently extracted the experiences of ERAS patients and analysed them line by line. As the aim of this systematic review was to explore the perioperative issues experienced by ERAS patients, the authors developed the problems into original concepts. Based on SPO theory, the authors constantly compared and classified the original concepts, summarised the same original concepts and coded the key components.

In the second stage, the authors (DW and XC) independently reviewed and analysed the coding content, and integrated and transformed the coding to form descriptive themes, which refer to a thematic view presented in descriptive sentences. The descriptive themes were discussed with the other two authors (ZL and YH) to ensure that the formed themes accurately reflected the results of the included studies. One author (YH) is a clinical registered nurse, and the other (ZL) is a researcher who mainly conducts qualitative research.

In the third stage, the four authors categorised all descriptive themes according to the three dimensions of the SPO model. They compared and analysed the descriptive themes of each dimension and summarised

similar descriptive themes. Finally, similar descriptive themes were condensed into eight analytical themes to form new findings.

Patient and public involvement

No patients were involved in this study. The public was not involved in the development of the research questions, research design or outcome measures.

RESULTS

Characteristics of the included studies

Thirty-one studies met the inclusion criteria. The studies were conducted in Sweden (n=8), the UK (n=7), Denmark (n=4), Canada (n=3), Australia (n=3), the USA (n=2), China (n=1), Norway (n=1), New Zealand (n=1) and Italy (n=1).

The sample included 1069 surgical patients enrolled in ERAS programmes. Sixteen studies included patients with colorectal surgery, five with gynaecological surgery, four with hip or knee replacement surgery, and the other six studies with patients who undertook pancreatic surgery, liver surgery, thoracic surgery, neurosurgical surgery, prostatectomy and abdominal surgery, respectively. A variety of data analysis methods, such as thematic analysis, interpretative phenomenological method, content analysis and grounded theory, were used (table 2). Additional details are provided in online supplemental file 2.

Methodological quality

As seen in table 3 (results of the critical appraisal of the 31 studies), only one of the studies (by a mark of 'Y') met all 10 of the criteria in the appraisal instrument. Four studies

Table 3 Final assessment of the methodological quality of the included studies

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Galli <i>et al</i> ²⁹	U	Y	Y	Y	Y	N	N	Y	Y	Y
Svensson-Raskh <i>et al</i> ³⁰	U	Y	Y	Y	Y	N	Y	Y	Y	Y
Blazeby <i>et al</i> ³¹	U	Y	Y	Y	Y	N	N	Y	Y	Y
Reynolds <i>et al</i> ³²	U	Y	Y	Y	Y	N	N	Y	Y	Y
Phillips <i>et al</i> ³³	U	Y	Y	Y	Y	N	N	Y	Y	Y
Poland <i>et al</i> ³⁴	U	Y	Y	Y	Y	Y	N	Y	Y	Y
Ratray <i>et al</i> ³⁵	U	Y	Y	Y	Y	Y	Y	Y	Y	Y
Wennström <i>et al</i> ³⁶	U	Y	Y	Y	Y	N	N	Y	Y	Y
Aasa <i>et al</i> ³⁷	U	Y	Y	Y	Y	N	N	Y	Y	Y
Gillis <i>et al</i> ³⁸	U	Y	Y	Y	Y	Y	N	Y	Y	Y
Gillis <i>et al</i> ³⁹	U	Y	Y	Y	Y	N	Y	Y	Y	Y
Krogsgaard <i>et al</i> ⁴⁰	U	Y	Y	Y	Y	N	Y	Y	Y	Y
Short <i>et al</i> ⁴¹	U	Y	Y	Y	Y	N	N	Y	Y	Y
Evans <i>et al</i> ⁴²	Y	Y	Y	Y	Y	N	N	Y	Y	Y
Liu <i>et al</i> ⁴³	U	Y	Y	Y	Y	N	Y	Y	Y	Y
Jakobsson <i>et al</i> ⁴⁴	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Rydmark and Berterö ⁴⁵	U	Y	Y	Y	Y	Y	Y	Y	Y	Y
Lithner <i>et al</i> ⁴⁶	U	Y	Y	Y	Y	N	N	Y	Y	Y
Donsel and Missel ⁴⁷	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Samuelsson <i>et al</i> ⁴⁸	U	Y	Y	Y	Y	N	N	Y	Y	Y
Dos Santos Marques <i>et al</i> ⁴⁹	U	Y	Y	Y	Y	Y	N	Y	Y	Y
Norlyk and Harder ⁵⁰	Y	Y	Y	Y	Y	N	N	Y	Y	Y
Vandrevala <i>et al</i> ⁵¹	U	Y	Y	Y	Y	N	N	U	Y	Y
Archer <i>et al</i> ⁵²	U	Y	Y	Y	Y	N	N	U	Y	Y
Sjøveian and Leegaard ⁵³	U	Y	Y	Y	Y	N	N	Y	Y	Y
Fielden <i>et al</i> ⁵⁴	U	Y	Y	Y	Y	N	N	U	Y	Y
Heine <i>et al</i> ⁵⁵	U	Y	Y	Y	Y	N	N	Y	Y	Y
Webster <i>et al</i> ⁵⁶	U	Y	Y	Y	Y	N	N	Y	Y	Y
Fecher-Jones and Taylor ⁵⁷	U	Y	Y	Y	Y	N	N	U	Y	Y
Wagner <i>et al</i> ⁵⁸	U	Y	Y	Y	Y	N	N	U	N	Y
Jonsson <i>et al</i> ⁵⁹	U	Y	Y	Y	Y	N	Y	Y	Y	Y
%Y	12.90	100	100	100	100	19.35	29.03	83.87	97.77	100

N, no; U, unclear; Y, yes.

(12.90%) met criterion one, which assessed congruity between the research methodology and philosophical perspectives. Six studies (19.35%) met criterion six, which included statements locating the researcher culturally or theoretically. Nine studies (29.03%) met criterion seven, which addressed the researchers' influence on the research. Twenty-six studies (83.87%) met criterion eight, which adequately represented participants' voices. Thirty studies (96.77%) met criterion nine, which evaluated whether a study was approved by the ethics committee. All studies met criterion two (assessed congruity between the research methodology and the research question), criterion three (assessed congruity between the research methodology and the methods of collecting data), criterion four (assessed congruity between the research methodology and the representation and analysis of data), criterion five (assessed congruity between the research methodology and the interpretation of results) and criterion ten (conclusions were derived from the analysis of the data).

Thematic synthesis

Eight analytical themes arose from the analysis of the included studies. Three themes fell under the 'structure' component of the SPO model: (1) patients cared about the timeliness of healthcare professionals' help; (2) patients cared about the professionalism of family care; and (3) patients misunderstood and worried about the safety of ERAS. Four themes fell under the 'process' component: (1) patients needed adequate and accurate information from healthcare professionals; (2) patients needed to communicate adequately with healthcare professionals; (3) patients hoped to develop the personalised treatment plan and (4) patients required ongoing follow-up services. One theme fell under the 'outcome' component: patients wanted to effectively improve severe postoperative symptoms.

Structure: patients' concerns about the timeliness and safety of ERAS

Patients cared about the timeliness of healthcare professionals' help

Staffing level was a concept noted from data to present barriers to ERAS patient care. Patients generally felt reassured and safe about the healthcare professionals responding promptly when they felt unwell.³⁰ However, heavy workloads kept healthcare professionals too busy, resulting in a lack of timeliness or continuity in some medical work and patients had to wait for assistance.^{36 57 63 64} If there was a delay in diagnosis or help, patients felt frustrated and angry and feared that their prognosis had worsened as a result^{48 57}: 'To begin with, I lost my breath and thought – this can't be true... You have to ring and ring.' In addition, patients complained that some questions were left unanswered in time, and they felt uncomfortable to switch to an unfamiliar healthcare professional for help^{45 53}: '...I thought I would speak to

the same doctor who was at the operation, but of course I never saw him again...'

Patients cared about the professionalism and safety of family care

Patients believed that although they were willing to leave the hospital early, there was a prerequisite for support, namely, the need for dedicated family members.^{29 37 42 44 45 51 52 55} However, they worried that their family members might not be able to take care of them at home as well as the healthcare professionals did at the hospital^{31 43 51 52 55–57}: '...but I was just a little bit worried about how I was going to cope as well...how (my partner) was going to cope with this...' In addition, patients felt that they could talk to healthcare professionals about their pain and worries when they were in the hospital, but it was difficult for family members to truly understand the patient's grief, and it was even more difficult for family members to provide professional guidance and support in the absence of healthcare professionals, which aggravated the patient's loneliness and anxiety: 'I could not truly explain to anyone at home how bad it was [during hospitalization]... Not because I truly was lonely or alone, but because I felt left alone with everything... You'd got used to being completely looked after and then suddenly you were totally alone in the world.'⁴⁷

Patients misunderstood and worried about the safety of ERAS

Since the ERAS programme is a new treatment concept, it is clearly different from traditional surgical treatment programmes. As a result, patients are easily worried about the safety of ERAS.^{35 38 41} The most frequently reported misconception was that the bowel needed to recover before oral food intake could be resumed, which conflicted with the standardised ERAS programme of early oral feeding: 'I vaguely remember them bringing me a full tray at suppertime... Are you guys nuts? I didn't touch it because I felt let's not overtax the bowel.'³⁸ Furthermore, the ERAS programme, with its emphasis on early mobilisation (started) rather than resting, contradicts the traditional post-surgery behaviours that patients were more familiar with because some ERAS patients had undergone traditional surgery in the past or had contact with someone else who had undergone a traditional surgical experience. Because of pain or their belief that patients should not be getting out of bed so soon, they thought it was dangerous to do so: 'I knew I had got to get off the bed as much as I could, but you truly don't want to. You don't want to.'⁵²

Process: patients' suggestions for improving ERAS implementation measures

Patients needed adequate and accurate information from healthcare professionals

Patients believed that healthcare professionals were only asking them to follow instructions, without giving them more reasons or detailed information^{33 36 37 41 49}: 'I think more information about food would be good ... what we should and should not be eating ...' Additionally, some

of the information provided was difficult to understand, or the healthcare professionals were too busy to provide detailed information to patients.^{34 48 59} For example, patients mentioned that they did not know what ERAS was, or even whether they were involved in the ERAS programme^{38 39}: 'I did it, but didn't know why...' Lacking information about the disease, the treatment produces feelings of insecurity and anxiety for patients^{39 46 48 59}: 'I don't feel that they gave me much information about what to expect [post op].' Patients mentioned that healthcare professionals did not provide enough information to their family members in the postdischarge period, and there was uncertainty about whom to contact about medical problems, resulting in family members being unable to provide effective and professional home care support.^{34 39 48} In addition, conflicting messages and different information sources caused confusion and mistrust for some patients^{34 37 38 41 45 49 54 55}: 'Actually, she [dietitian] did come and said you can eat what you want I thought no, this isn't right.'

Patients needed to communicate adequately with healthcare professionals

Patients needed to wait for a long time from the initial visit to the doctor to be admitted to the hospital for treatment and surgery. During this period, the healthcare professional did not take the initiative to contact patients to provide care and communication, which made patients feel that they had been abandoned by their doctors.^{34 46 48 56} During hospitalisation, patients believed that the main form of communication with healthcare professionals was one-way communication. Elderly patients, in particular, mentioned that healthcare professionals tended to simply tell them what to do, ignoring their views of their own diseases and needs in terms of treatment methods.⁴⁸ Sometimes, patients were too embarrassed or unsure to ask, or felt that it was inappropriate to bother healthcare professionals^{33 45 48 54 58}: 'You can see that the staff has a lot to do, so you feel reticent even though you need to ask a question.' Due to the natural dominance of healthcare professionals, patients felt that they had no chance to participate in decision-making treatment plans with healthcare professionals jointly, which reduced their initiative^{33-35 38 43 45 50}: 'I would say something to them [the doctors], and they weren't truly listening...and [they] just turned away and started talking to the other doctors.'

Patients hoped to develop a personalised treatment plan

Instead of being informed what to do by medical professionals, patients intended to be part of the ERAS team to jointly develop a more effective and personalised treatment plan. Patients believed that they should be treated as an individual who was doing his or her best, which allowed them to make more effort to follow the protocol.³⁹ Patients expected healthcare professionals to take the uniqueness of their condition into account when they formulated treatment plans to address the uncertainty that might arise in the perioperative period and to help

patients regain a sense of life control through personalised treatment^{29 34 38 39 43}: 'The nurses and doctors were pushing me to eat. I did not understand how important it was to eat as soon as possible. I thought the body needs healing...'³⁹ In addition, patients stated that dietitians needed to propose nutritional support programmes suitable for individual situations based on actual conditions so that they could feel at ease and actively cooperate with the proposed diet plan.³⁹

Patients required ongoing follow-up services

Despite having met all discharge criteria, patients mentioned they did not feel ready for discharge, which made them feel anxious and helpless.^{51 52 55 56 58 59} They complained that it was difficult to obtain healthcare professionals' treatments after discharge, and therefore, they felt vulnerable: 'There was no rehab in the hospital this time, you were just shunted out the door after four days, and so obviously that was cost-cutting.'⁵⁶ This disconnection was regarded by patients as the main barrier to self-care at home: 'Because I feel that after having such major surgery you need all the care and attention you can get from well trained staff that are there as a back up when you need them.'³¹ Although nearly all patients experienced nutritional problems (such as weight loss), only a few were able to receive guidance at home from clinical dietitians.^{31 48 51 52} Furthermore, patients said they would be grateful if healthcare professionals would call at different stages of their recovery at home: '...It would have been good to get another one [phone call] at a later stage when I was feeling more on top of things...'⁴⁷

Outcome: patients' demand for improving the postoperative recovery effect

Patients wanted to effectively improve severe postoperative symptoms

Healthcare professionals attached great importance to the prevention and treatment of postoperative symptoms of patients because patients would be unable to follow the ERAS programme on time or would have to deviate from the ERAS pathway due to severe postoperative symptoms (such as pain, nausea and vomiting), or they would experience worse clinical conditions (such as the protracted presence of drains). Suboptimal severe symptom relief resulted in slower recovery and longer hospital stays, which caused insecurity in patients and undermined their trust in professionals.^{29 33 35 36 40-42 45 50 53 59} For example, although ERAS recommends the minimal use of opioids, patients wanted better pain relief: 'I wouldn't say that I was in pain truly, so, I thought well if paracetamol and ibuprofen will do it then, yeah I was fine.'³³ And analgesics sometimes would induce nausea.⁴⁴ In addition, when healthcare professionals inadvertently ignored patients' less serious symptoms, the patients were disappointed and felt that they were not being taken seriously^{36 40}: 'It was ridiculous that no one bothered with the diary that I had filled in.'

DISCUSSION

Based on SPO theory, this systematic review aggregated and interpreted qualitative findings to further our knowledge of patients' experiences of participating in ERAS programmes. We coded and refined the themes from the three dimensions of SPO and summarised eight issues.

The implementation of the ERAS programme is a complex process involving the participation of various groups of people, and the ultimate core purpose is for patients to recover better and faster.⁷ The ERAS programme provides patients with a positive recovery experience. For example, setting expectations about surgery can improve patients' motivation to cooperate with treatment in the perioperative period.²⁹ Through preoperative education, patients can become familiar with the perioperative treatment plan for ERAS, increasing their confidence in surgical treatment results and reducing psychological pressure.³⁴ In addition, effective pain management enables patients to perform rehabilitation therapy as soon as possible after surgery to promote their physical recovery.³³ However, greater consideration of patients' negative experience can increase awareness of issues that patients experience but that are not easily identified by clinicians, such as the psychological burden of early discharge. At the same time, examining and evaluating ERAS from the patient's perspective can reveal the omissions and deficiencies of healthcare professionals in clinical care so that problems in patients' recovery process can be solved in a timely manner, reducing potential barriers to the implementation of accelerated recovery and providing patients with good perioperative support.^{48 49} Studies have shown that a better understanding of patients' perceptions and how these influence adherence to ERAS protocols can enable specific recommendations to be made for ERAS implementation, which has a positive effect on improving the quality of ERAS implementation.^{33 41 42} It is pertinent to highlight that the authors did not observe any demarcation of experience based on the year of publication. Patients' experiences with the ERAS programme from 2003 were consistent with experiences reported in articles published as recently as 2021. Therefore, although scholars in various specialised fields have reached a basic consensus on the ERAS pathway and striven to improve the recovery quality of patients, some important issues that patients experience remain unresolved or have not improved.^{33 71}

Patients' experiences with ERAS programmes were influenced by many factors. The patient's background and personality were thought to be factors that impacted their ability to comply with the ERAS requirements.⁷² For example, the discharge time of patients depended on whether their functional status met the discharge criteria of ERAS. Even when doctors believed that a patient's physical state met the discharge criteria and that the patient could be discharged, some patients still thought that early discharge was unsafe.⁷³ Previous studies showed that patients' different attitudes towards early discharge

were related to factors, such as the medical services policy, medical resource allocation, ERAS education, primary healthcare services and family support.⁷³ If these factors made patients feel worried and dissatisfied, they would have a negative experience with the implementation of the ERAS programme. Additionally, these issues might arise in different countries or regions and affect the subjective feelings of ERAS patients. Therefore, this systematic review analysed the common issues faced by patients in different countries or regions during the implementation of the ERAS programme from the three dimensions: structure, process and outcome. In the future, the relevant experience of ERAS patients in a certain country or region can be discussed in depth.

On the structure dimension, resources must be adequate before the ERAS programme is implemented. Due to the patients' vulnerability and sensitivity, they were extremely dependent on the assistance of healthcare professionals during treatment and recovery.³⁰ In this systematic review, patients mentioned that sometimes they had to wait a long time for help, feedback or responses from their healthcare professionals. After semistructured interviews with multidisciplinary team members, Pearsall *et al* found that insufficient human resources and unreasonable human resource structure were cited by most as barriers to the implementation of ERAS,⁷⁴ indicating that human resource management plays an important role in the implementation of ERAS programmes.⁷² Therefore, on the basis of existing medical human resources, how to rationally optimise the allocation of human resources and improve work efficiency are issues that need to be considered by hospital managers.

In addition, with the deepening of the patient-centred clinical treatment concept,⁷⁵ more attention has been paid to family support interventions for patients. Many studies have proven that family members can provide patients with support, resources, services and other forms of assistance to alleviate patients' mental stress and improve their quality of life.^{29 37 42 44 45} However, similar to the previous study results,²⁵ this systematic review found that both patients and family members were unprepared to deal with the medical problems faced in recovering at home, leading to fear and insecurity in patients, which might also cause issues in family relationships. On the process dimension, we found possible reasons for this negative experience. Patients believed that care from healthcare professionals for discharged patients was greatly reduced, and after being sent home, they sometimes received no professional help and treatment even if they encountered serious health problems. Therefore, postoperative follow-up is still the part of the ERAS programme that needs to be strengthened and improved, and healthcare professionals are required to provide corresponding medical support and assistance to patients and family members in a timely manner.^{30 43} However, based on the current level of medical resource allocation, there are still many challenges to solving this problem.

On the process dimension, there were issues related to doctor–patient information and communication. Doctor–patient communication is an integral part of ensuring compliance with all elements of the ERAS programme.^{72 73} Healthcare professionals provide patients with enough medical information to ensure that they fully understand their condition and why they should participate in the ERAS programme, which can increase patients' trust in healthcare professionals and improve their compliance with the ERAS programme.⁷⁶ Furthermore, it is important for the actions of healthcare professionals during a hospital stay to correspond with the information provided during preoperative ERAS conversations. Inconsistent information is more likely to lead to patient dissatisfaction with and questioning of the ERAS programme, adversely affecting ERAS implementation.^{45 49} Therefore, the ERAS multidisciplinary team members should unify the ERAS implementation standards and pathways and actively communicate with patients about the advantages of the ERAS pathways. Additionally, they should provide detailed information on how to implement these pathways so that patients can gain a sense of participation and to ensure the medical safety and quality of ERAS.

Patients who want to take control of their own health conditions need individualised information about the process they are going through.^{77 78} Each patient's condition is unique, and they should be treated as independent individuals who communicate and collaborate with healthcare professionals to obtain individualised treatment options.⁴⁹ This systematic review found that the implementation of individualised treatment remained difficult. Sibbern *et al* found that without personalised support, some patients viewed healthcare professionals as excessively authoritarian or as having a top-down attitude, which impeded recovery.²⁵ In particular, on the outcome dimension, some patients felt that their symptoms were not taken seriously by healthcare professionals, resulting in poor symptom control. In fact, the ERAS Group emphasises that the core concept of ERAS is to reduce the metabolic response caused by surgical injury to reduce complications, and ERAS multidisciplinary team members should develop treatment plans based on the patient's individual disease characteristics and focus on and treat the patient's postoperative complications and symptoms.⁷ Therefore, the reason for this negative experience may be that communication between the patient and the healthcare professionals is not timely and sufficient, causing the patient to assume that the healthcare professionals are not paying attention to his or her physical condition, which leads to anxiety and frustration.

To our knowledge, this is the first systematic review of qualitative evidence analysing issues related to ERAS implementation from the patients' perspective based on the SPO model. A comprehensive systematic search was conducted and strict inclusion and exclusion criteria were followed. Nevertheless, this systematic review has the following limitations. First, the analysis of themes across the literature was conducted on secondary data that had been interpreted and reported by

the original authors, and the selected studies did not include grey literature or non-English-language articles. While the search strategy was thorough, some studies may have been missed. Second, the relevant experiences of ERAS patients were first analysed and then summarised, and the issues or negative experiences reported by patients were condensed. Thematic analysis of these papers was an interpretative process, and although the results were validated by the collaborators, alternative explanations were possible. However, the consistency of our results with those of the patient's experience review supported our interpretation.^{25 79} In addition, patients' views are based on their feelings and needs, which have certain limitations. In the future, the scope of research objects, such as ERAS multidisciplinary team members, can be expanded to comprehensively evaluate the quality of ERAS implementation. Third, although this systematic review established strict inclusion and exclusion criteria, the included studies were from different countries and involved differences in disease course, symptoms and follow-up of different surgical procedures, which might have affected the findings and conclusions. In the future, these topics can be further discussed on the basis of a certain disease or a certain surgical procedure. Finally, future research should explore reflexivity in greater depth. That is, the researchers should clarify their philosophical basis, cultural background and values and should address the relationship between participants and researchers. Our appraisal of the included studies using the JBI-QARI indicated that the quality of the included studies was moderate. The quality of future studies could be improved by authors providing more information on the methodological approach that informed their analyses.

CONCLUSIONS

This systematic review analysed issues with the implementation of ERAS in the SPO dimensions from the perspective of patients. Patients needed timely help from healthcare professionals and support in self-care from family members, and they also needed adequate and accurate information from healthcare professionals and ongoing follow-up services to better improve severe postoperative symptoms and recovery quality after surgery. Therefore, this systematic review recommends that hospital administrators pay attention to optimising the complex ERAS process to reduce the unnecessary work of healthcare professionals so that they can have time to actively communicate with patients, meet the informational needs of patients and reduce the negative emotions of patients. At the same time, healthcare professionals should also have time to monitor and record patients' compliance with ERAS pathways in real time and to provide timely guidance and assistance to patients to improve the quality of ERAS implementation. In addition, healthcare professionals can follow up on time and even increase the number of follow-up visits, providing substantial help and guidance for patients' recovery outside the hospital and thereby reducing the incidence of complications and ensuring the application effect of the ERAS programme.

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