

Effect of Postoperative Nursing on Quality of Life in Patients with Gastric Cancer

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Abstract: Gastric cancer is a serious malignant tumor that poses a significant threat to human health, with surgery remaining a cornerstone of treatment. However, postoperative patients often experience various complications, including anxiety, limited mobility, and nutritional deficiencies, which significantly impair their quality of life (QoL). Enhancing postoperative care is therefore essential to improve patient outcomes and overall well-being. This review aims to evaluate the impact of different postoperative nursing strategies on the QoL of patients undergoing gastric cancer surgery. Special attention is given to approaches such as enhanced recovery after surgery (ERAS), individualized nutritional support, psychological care, and traditional Chinese medicine (TCM) nursing. Evidence indicates that these interventions can significantly improve both physiological and psychological recovery, reduce postoperative complications, and accelerate rehabilitation. Specific strategies such as emotional support and early enteral nutrition have been shown to be particularly effective. Comprehensive and individualized postoperative nursing care plays a critical role in enhancing both physical and emotional health outcomes. Future research should prioritize the development of personalized, integrative care models tailored to the diverse needs of gastric cancer patients.

Keywords: Nursing, Postoperative Care, Gastric Cancer, Quality of Life, Traditional Chinese Medicine

1. Introduction

Gastric cancer remains a major global health burden, ranking as the fifth most commonly diagnosed cancer and the third leading cause of cancer-related mortality worldwide [1]. In 2020 alone, approximately 1.1 million new cases and 769,000 deaths were reported globally [2]. Gastrectomy remains the primary curative treatment modality; however, patients often face significant postoperative challenges that adversely affect their quality of life (QoL). These include malnutrition, weakened immune function, increased susceptibility to infections, and a variety of physical and psychological complications [3].

Postoperative nursing care plays a vital role in promoting recovery by addressing nutritional deficits, psychological distress, and functional limitations [4]. Furthermore, evidence suggests that traditional Chinese medicine (TCM) nursing interventions can enhance physical rehabilitation and improve overall QoL in gastric cancer patients [5].

This review aims to explore various postoperative nursing strategies—including enhanced recovery after surgery (ERAS), individualized nutritional support, psychological interventions, and TCM-based approaches—and to assess their impact on both physical and psychological outcomes. The ultimate goal is to identify effective and patient-centered care models that can optimize recovery and improve long-term prognosis in gastric cancer patients.

2. The Concept and Assessment Methods of Quality of Life

Quality of life refers to an overall function, usually incorporated in terms of physical, psychological, social, and functional aspects of an individual health condition in the medical field. In terms of postoperative gastric cancer patients, quality of life assessment tools mainly consider the EORTC QLQ-C30 and the DAUGS20 questionnaires; both of these instruments are used to evaluate the physical, psychological, and social function of the patients [6].

The EORTC QLQ -30 (EORTC, 2024) questionnaire includes a general health status score, five

functional scores (e.g., physical functioning, role functioning, emotional functioning, cognitive functioning, and social functioning), and seven symptom scores (e.g., fatigue, nausea, vomiting, pain). The data collected by the C21HQ would be that functional scores stand for better health status, whilst symptom scores stand for severe symptoms. DAUGS20, on the other hand, entails the 20 items - ranging from the assessment of postoperative gastrointestinal functioning, each item scoring higher indicating more distress of dysfunction in the gastrointestinal tracts [7]. An additional one is the FACT-Ga (Functional Assessment of Gastric Cancer), which is a composite tool, and appraises on four domains - physical, emotional, social, and functional - to measure the patient's QoL [8].

Through these assessment tools, medical staff can accurately understand the different needs of patients in postoperative rehabilitation and thus formulate personalized nursing plans.

3. Impact of Postoperative Gastric Cancer on Patients

The impact of gastric cancer surgery extends beyond the physiological domain, affecting patients' psychological well-being, physical functioning, and social participation. Understanding these multidimensional effects is crucial for developing holistic postoperative care strategies.

3.1 Psychological Functioning

Postoperative gastric cancer patients are at high risk of experiencing psychological distress, including anxiety and depression, which significantly impair their overall quality of life. A prospective cohort study by Liu et al. (2022) identified several risk factors for postoperative anxiety and depression: being female, single or divorced, having a large tumor size, and advanced TNM staging. Moreover, the severity of anxiety and depression was shown to increase progressively between 12 and 36 months post-surgery [9]. These findings highlight the importance of integrating psychological care into postoperative nursing, especially for high-risk groups.

3.2 Physical Functioning

Surgical complications and nutritional deficits significantly affect patients' physical recovery and long-term QoL. In a study by Jang and Jeong (2023), patients who developed complications within 30 days of surgery—such as anastomotic leakage, postoperative bleeding, infection, bowel obstruction, and malnutrition—demonstrated significantly lower physical functioning and greater symptom burden. Although the impact of early complications diminished over time, patients with complications still reported poorer QoL outcomes six to twelve months postoperatively [10]. These findings underscore the necessity of timely clinical intervention and close monitoring to reduce complication-related morbidity.

3.3 Social Functioning

Postoperative limitations in mobility and self-care can severely restrict patients' social participation, particularly among older adults. A retrospective study by Okuyama et al. (2023) revealed that patients aged 80 years and older experienced a more significant decline in activities of daily living (ADLs) following gastrointestinal surgery compared to their younger counterparts. This decline negatively affected their ability to engage in social roles and enjoy post-treatment life [11]. These findings suggest that postoperative nursing should prioritize restoring functional independence in elderly patients through personalized rehabilitation programs and community-based support services.

3.4 Overall Quality of Life

A study investigating the outcomes of risk-reducing total gastrectomy (RRTG) in patients with pathogenic or potentially pathogenic CDH1 mutations evaluated QoL using multiple instruments, including the Health-Related Quality of Life (HRQoL) questionnaire and the NIH HEALS (Measurement of Psychosocial-Spiritual Recovery). Among 126 patients, 18.3% experienced severe complications, such as anastomotic leakage and the need for reoperation [16]. More than half of the patients who were followed up reported persistent symptoms including bile reflux, dysphagia, or micronutrient deficiencies, which substantially impaired long-term QoL [12]. This underscores the importance of long-term care strategies to manage chronic symptoms and support sustained recovery.

4. Postoperative Nursing Interventions and Their Impact

Effective postoperative nursing interventions are crucial to improving the physical and psychological recovery of gastric cancer patients. The following sections summarize key strategies that have demonstrated significant positive effects on patients' quality of life.

4.1 Early Enteral Nutrition Support

Early enteral nutrition (EEN) has been shown to promote gastrointestinal recovery and reduce postoperative complications. Chen et al. (2023) compared EEN with total parenteral nutrition (TPN) and found that patients in the EEN group experienced shorter durations of postoperative fever, faster return of bowel function, reduced hospital stays, and enhanced immune responses. Additionally, levels of serum proteins, such as albumin and transferrin, were significantly higher in the EEN group. The EEN group also scored significantly higher on the SF-36 quality of life assessment on postoperative day 7 [13]. These findings highlight the benefits of early enteral feeding in improving nutritional status, reducing complication rates, and enhancing overall QoL in the early recovery phase.

4.2 Traditional Chinese Medicine (TCM) Nursing Interventions

Traditional Chinese medicine nursing integrates herbal remedies, acupuncture, and auricular therapy to support holistic recovery. Wu et al. (2019) examined the effects of Jianpi Yangzheng Xiejie Decoction (JPYZXZ) using xenograft mouse models and demonstrated that this decoction suppressed epithelial-mesenchymal transition (EMT) and modulated the tumor microenvironment by altering macrophage phenotypes (M1/M2). Additionally, JPYZXZ appeared to reduce chemotherapy-related toxicity, enhance immune function, and improve QoL in patients with advanced gastric cancer [14].

In another study, Ren and Yang (2024) assessed the efficacy of a TCM "triple rehabilitation" approach combined with auricular acupressure in 82 patients post-laparoscopic gastrectomy. Patients in the intervention group showed earlier recovery of gastrointestinal function (e.g., gas and stool passage), shorter hospital stays, improved sleep quality, and reduced anxiety [15]. These findings suggest that integrative TCM nursing can accelerate postoperative recovery while improving patients' psychological and physical well-being.

4.3 Accelerated Rehabilitation Nursing

Enhanced Recovery after Surgery (ERAS) protocols aim to minimize surgical stress, preserve organ function, and expedite recovery by implementing evidence-based perioperative care strategies. These include optimal anesthesia, intraoperative temperature control, early mobilization, and early enteral feeding [16]. In a prospective study of 200 gastric cancer patients, those managed under ERAS protocols exhibited significantly shorter hospital stays, faster bowel recovery, earlier ambulation, and improved patient satisfaction compared to those receiving conventional care [17]. These results underscore the effectiveness of ERAS in promoting rapid functional recovery and improving postoperative QoL.

4.4 Postoperative Pain Management Model

Effective pain control is essential to promote recovery and prevent physical and psychological complications after gastric cancer surgery. Many patients require admission to intensive care units (ICU) for postoperative monitoring and management, where unrelieved pain can significantly impair both physical functioning and emotional stability.

Wang and Zhang (2024) conducted a study involving 70 post-gastrectomy patients admitted to the ICU. Participants were randomly assigned to either a control group receiving standard nursing care or an intervention group managed with a comprehensive pain management model that incorporated both pharmacological and psychological strategies. The intervention group received opioid-based analgesia, patient-controlled analgesia (PCA), music therapy, cognitive-behavioral therapy (CBT), massage, relaxation techniques, and psychological counseling. Patients in the intervention group demonstrated significantly higher QoL scores in physical, psychological, social, and environmental domains (mean score: 79.5 ± 7.4 vs. 71.6 ± 5.4 , $P < 0.05$). Moreover, treatment satisfaction was also higher (82.85% vs. 62.85%, $P < 0.05$) [18]. These findings indicate that an integrated pain management model can effectively alleviate discomfort, reduce emotional distress, and enhance overall QoL in postoperative

patients.

4.5 Health Education

Health education serves as a vital component of holistic postoperative care, empowering patients to actively participate in their recovery and self-management. Gao et al. (2020) investigated the impact of a comprehensive health education program on 80 gastric cancer patients who had undergone surgery [19]. Patients in the intervention group received tailored education that included disease awareness, behavioral and lifestyle guidance, rehabilitation planning, and psychological counseling. In contrast, the control group received routine nursing care.

One month after surgery, patients in the intervention group exhibited significant improvements in managing complications such as dysphagia, pain, and reflux. They also showed enhanced psychological resilience and a better understanding of their recovery process. These results underscore the importance of structured and personalized health education in supporting both physical and mental recovery following gastric cancer surgery.

5. Discussion

Substantial progress has been made in recent years regarding the role of postoperative nursing in improving the quality of life (QoL) of gastric cancer patients. However, several limitations remain in current research, which must be addressed to optimize future care strategies.

While numerous studies have demonstrated the effectiveness of various nursing interventions, many are limited by small sample sizes and short follow-up durations. For example, Fan et al. (2023) conducted a large-scale randomized controlled trial involving 1,032 patients, showing that Chinese herbal treatments significantly reduced complication rates, improved gastrointestinal and psychological function, and enhanced long-term survival. Despite its robust findings, this single-center study may be affected by selection bias and lacks the external validity necessary for broader generalization. Additionally, although a 60-month follow-up was conducted, the long-term biological mechanisms and sustained effects of the intervention require further investigation.

Although TCM-based interventions have shown positive clinical outcomes, their underlying mechanisms remain poorly understood. Studies by Fan et al. (2023) and Wu et al. (2019) suggested that TCM nursing can modulate immune responses and enhance psychological resilience, but the exact biological pathways responsible for these effects are yet to be clearly defined. Further in-depth research is needed to elucidate how TCM influences immunomodulation and antitumor activity, which could help integrate traditional and modern practices more effectively.

Many existing studies prioritize short-term recovery indicators, such as hospital stay duration or early complication rates, while neglecting the long-term trajectory of QoL. Lee and Lim (2020) emphasized that time is a significant factor affecting QoL in post-gastrectomy patients, and longitudinal changes in various domains—particularly emotional and social functioning—require more comprehensive evaluation. Future research should prioritize extended follow-up to capture delayed or persistent effects of nursing interventions on long-term outcomes.

Current research often evaluates isolated nursing strategies without adequately accounting for patient-specific needs and variability. While Li et al. (2024) demonstrated the benefits of ERAS protocols in enhancing recovery, there is limited guidance on how to integrate such strategies into personalized care pathways. Future studies should focus on designing adaptive, multi-modal nursing models that respond to individual differences in age, comorbidities, psychological resilience, and social support systems. Developing flexible, patient-centered frameworks will be key to optimizing long-term outcomes.

6. Conclusion

Postoperative nursing care is integral to enhancing recovery and quality of life in patients undergoing gastric cancer surgery. Evidence indicates that targeted interventions—such as early enteral nutrition, traditional Chinese medicine nursing, ERAS protocols, pain management, and structured health education—contribute significantly to improved physical, psychological, and functional outcomes. The integration of these strategies into individualized, evidence-based care models is

essential to meet the diverse needs of postoperative patients. Future research should focus on long-term outcomes and the development of optimized, patient-centered nursing frameworks to support sustainable recovery and survivorship.

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