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Review Article

Quality of Life of Colorectal Cancer Patients: A Literary Review

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Abstract

Colorectal cancer (CRC) is a major contributor to global cancer cases and deaths, making it a significant public health concern. As the number of CRC survivors continues to rise, understanding the impact of CRC and its treatment on their quality of life (QoL) has become increasingly important. The determinants of QoL in CRC patients are multifaceted and include physical health, physical fitness, physical activity, healthy eating, psychological health, social support, the availability of high-quality medical care, and QoL at the end of life. These factors interact to shape the overall well-being of CRC survivors. To enhance the QoL of CRC patients, a comprehensive approach is needed. This includes tailoring treatments to individual patient characteristics, providing psychological support and symptom management, promoting post-treatment rehabilitation, organizing support groups, emphasizing early detection, and effectively managing CRC-related symptoms. Addressing these aspects can significantly improve the QOL and well-being of CRC survivors, helping them adapt to life after treatment and thrive in the face of the challenges they may encounter.

Keywords: Colorectal cancer; Quality of life; Health-related quality of life; Quality of life assessment

Introduction

Colorectal cancer (CRC) is a significant contributor to the global cancer burden, accounting for a substantial number of cases and deaths (1). It ranks third among the most commonly diagnosed cancers, with over 1.9 million new cases and 900,000 deaths annually worldwide (2). As the number of CRC survivors increases, understanding and addressing the side effects of CRC and its

treatment on their quality of life (QoL) becomes crucial.

QOL of cancer patients encompasses physical health, emotional well-being, social relationships, and psychological state. It also includes aspects like sexual functioning, spiritual well-being, and professional performance. Assessing QoL in clinical trials can help differentiate between treatments with similar biological outcomes (3).

Given the growing population of CRC survivors (4), research focuses on identifying characteristics of CRC patients at higher risk of long-term poor QoL (5). This knowledge may lead to targeted interventions to prevent a decline in QoL.

Materials and Methods

Search strategy and selection criteria

The research question addressed in this descriptive review was: "What are the determinants of the QoL in colorectal cancer survivors?" For this review, CRC survivors were defined as individuals living with a diagnosis of CRC at any stage of the cancer, from diagnosis until the end of life.

PubMed, Embase, and Google Scholar were the databases used for literature search. The review selected studies from 2000 to 2022 based on specific criteria. Preference was given to studies with high credibility, such as systematic reviews, meta-analyses, and controlled clinical trials. These studies utilized standardized methods like EORTC QLQ-C30, FACT-C, or SF-36 to measure QOL. Additionally, selected studies had a sufficient follow-up period to capture information on survival duration and QOL.

Result of studies

Determinants of the QoL

The determinants of the QOL of cancer patients may differ from the determinants of the overall QOL. Some of the most important determinants of the QOL of cancer patients include:

Physical health

Cancer patients may face physical pain, fatigue, and mobility limitations due to the disease and its treatment. Including a healthy lifestyle in the treatment plan can improve their QOL and reduce the risk of disease recurrence (6).

Physical fitness (PhF) refers to a state of physical health achieved through regular exercise, a healthy diet, and adequate rest (7). PhF encompasses various aspects of health, such as cardiovascular endurance, muscle strength, flexibility, and body composition. Regular physical activity improves PhF, leading to overall health and well-being enhancement.

PhF is linked to reduced morbidity and mortality from CRC (8). Higher PhF levels were associated with decreased mortality risk from cancer of the digestive system, including colon cancer and CRC (9). Moreover, maintaining high PhF in middle age is related to a decreased risk of developing CRC and death from colon cancer, even in elderly CRC survivors (7).

Preserving PhF during CRC treatment and promoting physical activity can help patients engage in daily activities and improve QOL. Conversely, prolonged inactivity exacerbates fatigue and hampers recovery (10). Moreover, higher aerobic fitness and strength contribute to better overall health, functioning, and reduced symptoms like pain and fatigue in CRC patients after surgery (7). In elderly CRC survivors, PhF is associated with improved QOL, highlighting its potential impact on overall well-being. Furthermore, higher aerobic fitness and endurance are correlated with better cognitive function in CRC patients (7). Maintaining and enhancing cognitive abilities in elderly CRC survivors is essential, given their higher likelihood of cognitive impairments (11).

Physical activity

Physical exercise has been extensively studied for its beneficial effects on health, including improvements in PhF, body composition, biomarkers, and QOL, while reducing side effects associated with diseases (12, 13). Engaging in physical activity (PhA), especially during leisure time, is associated with better overall survival (14) and colorectal cancer (CRC)-specific survival (15). Encouraging a high level of PhA in CRC patients can increase their survival rates and re-

duce mortality risk (16). PhA after CRC diagnosis is linked to a 39% reduction in CRC-related mortality risk (17), and it positively impacts QOL in CRC survivors (18).

Physically active CRC patients report better QOL, improved functioning, and reduced symptoms like pain, insomnia, and fatigue (18, 19). Survivors of CRC may experience various physical and psychosocial symptoms after diagnosis, including intestinal problems, stress, and depression (20). Long-term physically active CRC survivors tend to have a better QOL compared to inactive survivors, regardless of the intensity of PhA (21).

A 12-week exercise program at home can improve QOL and psychological health in CRC survivors, particularly in those with increased PhA levels (22). Given the growing number of CRC survivors, evaluating overall and CRC-specific QOL in survivors is increasingly important, and promoting physical exercise can play a crucial role in their well-being.

Healthy eating

Diet and PhA have a strong impact on QOL of CRC patients (23). Embracing a healthy diet is vital for managing CRC treatment and side effects, leading to improved QOL (24). Scientific evidence indicates that PhA and fiber-rich foods reduce CRC risk, while high fat, red/processed meat, and alcohol intake increase the risk (25). Maintaining a long-term healthy diet, particularly limiting red/processed meat, is crucial for cancer survivors, who have a higher risk of chronic diseases like heart disease (26). Adequate calcium and milk intake after CRC diagnosis may reduce mortality risk in non-metastatic CRC patients (27).

While some CRC survivors follow dietary guidelines on fruit/vegetable consumption and BMI, adhering to alcohol intake and PhA recommendations may pose challenges (28). Many long-term CRC survivors are overweight/obese, physically inactive, and fail to meet fruit/vegetable consumption guidelines (19). However, visceral obesity and sarcopenia may not significantly impact long-term QOL in stage I-III CRC survivors (29).

Unfortunately, malnutrition affects up to 60% of CRC patients, and hypoalbuminemia is an independent predictor of complications (30). Preoperative hypoalbuminemia is associated with poorer postoperative outcomes in CRC patients, including overall survival and relapse-free survival (31,32).

Patients with eating disorders experience worse QOL, including depression, anxiety, pain, and social function. Malnutrition significantly affects CRC patients' QOL, including physical indicators like functional ability to walk (33).

Psychological health

Cancer patients often experience psychological challenges such as depression, anxiety, fatigue, pain, and cognitive deficits associated with the disease or its treatment (34). These symptoms may persist in cancer survivors for over a decade after treatment (35). In CRC patients, depression prevalence ranges from 13% to 57% due to factors like low 5-year survival rates, colostomy, intestinal obstruction, and chemotherapy side effects (36). Depression and anxiety significantly affect health functions and mortality risk in cancer patients (37).

In Saudi Arabia, using the EORTC QLQ-C30 questionnaire showed low scores in emotional scales, pain, fatigue, and insomnia as the most distressing symptoms in CRC patients (38,39). Research by Abu-Helalah et al. indicated low overall QOL and deteriorating psychological well-being in intermediate-stage CRC survivors, with a high proportion experiencing depression (55%) and anxiety (31%) (40).

High prevalence of anxiety symptoms is common in patients diagnosed at late cancer stages (III or IV), leading to lower QOL within the first six months after diagnosis (41). Although psychological stress affects up to 75% of cancer patients, physical and psychological symptoms, including pain, typically improve over time (42).

Female CRC survivors often report worse QOL, and psychological well-being compared to males, potentially due to higher levels of depression and

greater sensitivity to environmental factors (43). Women's experience of violence is associated with increased prevalence of anxiety, depressive disorders, and post-traumatic stress (44).

Sexuality and intimacy are vital aspects of QOL, and cancer treatments can affect sexual function physically and psychologically. Turkish CRC patients showed that anxiety and depression were closely linked to sexual dysfunction and poor QOL (45). While colorectal cancer surgery affects short-term physical aspects of QOL, emotional well-being improves significantly within 2 to 4 wk after surgery (46).

Social support

Social support from family, friends, and close individuals plays a vital role in improving the QOL of cancer patients. Psychological support is especially crucial for individuals who have had cancer (40). Psychosocial interventions effectively reduce distress and enhance QOL (47), often leading to resource savings (48).

During cancer treatment, patients benefit from support in understanding the disease, managing side effects, and coping with fears of relapse, which can negatively affect their QOL (49). Even during recovery, CRC patients may experience decreased QOL due to psychological and physical exhaustion, necessitating comprehensive multidisciplinary care (50). Implementing preventive monitoring programs can reduce psychological stress and improve the QOL of CRC patients (51).

Socially supported CRC patients with functional independence and higher QOL scores show better outcomes regarding anxiety and depression a year after surgery (52). Conversely, lower social support is associated with poorer psychological well-being and QOL in CRC patients (53), possibly leading to increased susceptibility to depression and anxiety (54).

Availability of high-quality medical care

Cancer patients require high-quality medical care to effectively combat the disease and improve their condition. Financial support can play a crucial role in reducing the financial burdens and enhancing the QOL of cancer patients. For CRC survivors, challenges may include increased risk of long-term unemployment and physical limitations in daily activities (55).

In Jordan, among CRC survivors, the most unpleasant symptoms are insomnia, constipation, and financial difficulties, despite receiving free cancer treatment services (56). However, patients may still face additional costs, such as expenses related to loss of productivity and transportation (57).

In Western countries like the United States, cancer patients often bear the majority of treatment costs, making financial difficulties a significant burden that may outweigh physical, social, family, and emotional suffering in terms of QOL (42). Variations in cancer treatment costs and social security systems between countries can contribute to such challenges (50).

QOL at the end of life

For cancer patients whose disease has reached the last stage, it is important to ensure a high QOL at the end of life, including pain management and dignity in care. Supportive therapy services should be targeted at those who are at risk of long-term high unmet needs, and the introduction of personalized and adapted services is likely to lead to an improvement in the QOL (58). Having identified the needs of patients with CRC, health care providers, in particular nurses, can develop comprehensive care programs adapted to the needs and priorities of these patients to improve their QoL and health (59).

QOL related to treatment

QOL is assessed across five main domains: physical functioning, role functioning, social functioning, cognitive functioning, and psychological functioning (60).

Key factors influencing the QOL, and psychological well-being of CRC patients include cancer stage, CRC localization, pathological coding, patient age, cancer recurrence, type of surgery, radiation therapy, chemotherapy or adjuvant chemotherapy regimen, and the use of stoma (61,62).

QOL indicators are poorer in patients with rectal cancer compared to those who have survived colon cancer, potentially due to differences in symptoms, treatment methods, including stoma removal, and therapy duration (63).

Patients diagnosed with early-stage CRC (stage I) tend to report more positive trends in health-related QOL compared to those diagnosed with later stages (stage III or IV) (64).

QOL after surgery

Surgical interventions can have significant effects on various aspects of patients' QOL. Postoperative complications are common and associated with higher morbidity, mortality rates, increased healthcare costs, and reduced health related QOL (65). (Neo) adjuvant therapy for CRC further impairs functional recovery and survival (66).

Accelerated recovery programs, including multimodal interventions, have shown promise in improving patient outcomes, leading to increased survival and improved QOL (67). Preoperative rehabilitation recovery protocols accelerate gastrointestinal tract function recovery and improve QOL and functional muscle strength after colorectal surgery (68). Urinary tract dysfunction is a common issue after CRC treatment, particularly with radiation therapy, and is closely associated with QOL deterioration (69,70). Social support is a crucial factor affecting QOL within the first 12 months after surgery (71). Self-efficacy influences patients' perceptions of the disease and fatigue levels after CRC surgery (72).

In older patients, QOL was lower following both laparoscopic and open surgery compared to younger patients, with only short-term differences observed between surgical approaches (73). Elderly patients experience slower QOL recovery after CRC surgery (74). Colorectal surgery integrated into geriatric cancer care positively impacts QOL in functionally dependent elderly cancer patients (75).

An important consequence of colorectal surgery is a stoma, which can negatively affect QOL. Living with a colostomy presents various challenges, including sexual problems, depression, gas, constipation, appearance dissatisfaction, mobility difficulties, fatigue, and stoma-related anxiety (76). Stoma-related life changes may lead to psychological disorders, affecting patients' coping abilities (77). Emotional and physical well-being, body image, and self-esteem play essential roles in patient care, stoma adaptation, and acceptance, influencing QOL outcomes (78). Postoperative evaluation requires endoscopic monitoring and psychological support to enhance QOL (79). Lavender essential oil in a stoma bag is a simple, cost-effective, and natural method that improves stoma adaptation, QOL, and eliminates odor in patients with permanent colostomy (80).

QOL after chemotherapy

CRC treatment, whether chemotherapy, surgery, or radiation therapy, can evoke negative feelings and affect health-related QOL (81). Monitoring QOL during chemotherapy is essential to assess treatment effects and side effects (82). Nursing staff should actively implement evidence-based strategies to address patients' individual needs, improve QOL, and reduce fatigue symptoms resulting from CRC and chemotherapy (83). Studies show satisfactory QOL overall, with the social sphere most preserved, and psychological/emotional and physical domains most affected (84). Patients undergoing outpatient chemotherapy may require better psychological support, especially females (85). Monitoring fatigue levels throughout treatment is crucial, as it is associated with QOL deterioration, affective and cognitive symptoms, and prolonged fatigue (83, 86). Fatigue and QOL changes can affect daily activities, cause psychological and emotional disturbances, and impair decision-making (83).

Conclusion

To enhance QOL of CRC patients, several key activities can be implemented:

- Individualized Treatment: Tailoring CRC treatment to each patient's specific characteristics, including selecting the optimal combination of drug therapy, surgical methods, and radiotherapy.

- Patient Support: Providing psychological support and teaching patients how to manage symptoms and emotions helps them adapt to life after treatment.
- Rehabilitation: Post-treatment rehabilitation may involve exercise, dietary adjustments, and lifestyle changes to aid patients in returning to normal life.
- Social Support: Organizing support groups for CRC patients facilitates communication with others who have faced similar challenges and provides expert guidance.
- Early Detection: Early screening improves prognosis and QOL by enabling prompt treatment initiation.
- Symptom Control: Effectively managing pain, nausea, diarrhea, constipation, and other CRC-related symptoms significantly enhances patient QOL.

CRC patients often encounter psychological, lifestyle, social, and physical challenges after treatment. Prioritizing QOL improvement through personalized treatment, considering psychosocial and economic factors, and offering psychological support and symptom management training are essential for successful adaptation to post-treatment life.

Journalism Ethics considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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Conflict of interest

The authors declare that they have no competing interests.

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