ORIGINAL RESEARCH

A Qualitative Study on the Supportive Care Needs Preferences of Older Colorectal Cancer Patients: Insights from Patient Experiences

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Purpose: This study employs a qualitative research methodology to explore the genuine feelings of older patients with colorectal cancer (OPCRC) regarding their Supportive Care Needs (SCNs), to understand their specific care requirements and to inform the clinical implementation of targeted intervention programs.

Methods: Qualitative research was conducted from November 2024 to January 2025 in Zhengzhou, China. Data were collected through in-depth, semi-structured interviews with OPCRC. Thematic analysis was employed to identify key themes from the interview transcripts. Results: A total of 25 participants were recruited, comprising 18 males and 7 females. Thematic analysis revealed four themes and 13 sub-themes: 1) disease management needs, 2) information acquisition needs, 3) emotional support needs, and 4) practical needs.

Conclusion: It is essential to prioritize the care needs of OPCRC by enhancing symptomatic management and providing comprehensive information support. Additionally, addressing their emotional well-being is crucial, and effective social assistance should be offered to facilitate their reintegration into society.

Keywords: older people, care, colorectal cancer, qualitative research

Introduction

As one of the most prevalent gastrointestinal cancers, colorectal cancer (CRC) accounted for 1,926,118 new cases (9.6%) worldwide in 2020, along with 903,859 deaths (9.3%).¹ In 2022, China reported 517, 106 new cases of CRC and 240, 010 related deaths, with a large proportion of these cases occurring among older patients.² Surgery remained the primary method for effectively treating CRC; however, older patients postoperatively encountered significant challenges, including complex clinical symptoms, prolonged rehabilitation periods, and nutritional disorders related to postoperative exercise.³ The absence of high-efficiency care support diminished their quality of survival, elevated the risk of cancer recurrence, and potentially accelerated mortality in elderly patients.^{4,5} Therefore, it was crucial to enhance support for OPCRC.

SCNs referred to the physiological, informational, psychological, and emotional care required to support patients, excluding treatment.⁶ The SCNs of OPCRC were crucial for enhancing their quality of life and health outcomes. However, these needs were not adequately addressed. Older patients faced unique challenges, including complications, nutritional deficiencies, and the psychological burden associated with a cancer diagnosis and treatment, which further complicated their support requirements.⁷ Nutritional needs were important for reducing short-term complications after surgery, especially

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among patients aged 80 and above.⁸ OPCRC emphasized the importance of a comprehensive survival care plan. Many survivors did not undergo recommended follow-up investigations, such as colonoscopy, nor had they discussed the risks with their family members since their diagnosis. This indicated a significant gap in continuity of care and a pressing need for improved communication and subsequent strategies.⁹ Additionally, the unmet need for health and treatment information was a common complaint among elderly patients. A survey of CRC survivors revealed that many patients desired more information about life after treatment, highlighting a gap between patients' educational needs and the support they receive.¹⁰

Despite the increasing recognition of the prevalence and unique SCNs of OPCRC, significant gaps persisted in delivering comprehensive care and support. Specifically, the absence of thorough assessments of SCNs, coupled with a limited understanding of patients' experiences, and hampered the accurate identification of their requirements.¹¹ Researches on patients with CRC focused on quantitative methods, which vielded statistical data regarding prevalence and outcomes, ^{12,13} However, this approach overlooked the subjective experiences that influenced patient needs and preferences. In contrast, qualitative research could capture the nuanced experiences and perspectives of patients, with interviews offering an in-depth understanding of how older patients with CRC perceive the disease's impact on their daily lives and their expectations for care. This method pinpointed specific areas where patients felt unsupported or had unmet needs, thereby guiding healthcare providers in developing targeted interventions.¹⁴ Additionally, qualitative research illuminated the dynamics of caregiver support, which was particularly pertinent for older patients who frequently depended on family members for assistance.¹⁵ Caregivers faced considerable burdens, comprehending their needs and challenges could inform strategies to effectively support both patients and caregivers. By investigating the interactions between patients and caregivers, qualitative research could help identify gaps in support systems and emphasized the necessity of integrating caregiver needs into the overall care plan.¹⁶ Previous qualitative research on colorectal cancer patients had focused on healthcare,⁴ rehabilitation training,¹⁷ and psychological adaptation,¹⁸ effectively capturing their genuine experiences and emotions while providing guidance for enhancing intervention plans. Given that the SCN encompassed physical, emotional, social, and other dimensions, employing qualitative research methods could yield valuable insights into the experiences and needs of this vulnerable population. Consequently, this qualitative study was to explore the genuine feelings of the OPCRC regarding SCN, aiming to understand their specific nursing needs and establish a foundation for implementing targeted intervention strategies in clinical practice.

Methods

Study Design and Ethical Considerations

This qualitative study was conducted in an older patient ward at a tertiary hospital in Zhengzhou, China. All procedures adhered to the ethical standards established by Ethics Committee of Ninth People's Hospital of Zhengzhou, the Helsinki Declaration, and reporting criteria for qualitative research (COREQ-32).¹⁹ All participants were informed of the purpose, content, and other relevant details of the study, and they consented to the use of portions of the interview content for publishing anonymous responses and direct quotations. The ethics committee approved that all participants verbally provided informed consent prior to the interview.

Participants and Procedures

Data were collected from November 1, 2024, to January 12, 2025, using a purposive sampling method to recruit participants. The inclusion criteria for patients were as follows: 1) a pathologically confirmed diagnosis of colorectal cancer with concurrent chemotherapy; 2) age of 60 years or older; 3) a stable medical condition; 4) the ability to understand and express information adequately; and 5) informed consent and voluntary participation in the study. The exclusion criteria included: 1) the presence of other serious life-threatening cancers, as well as significant cardiovascular, neurological, or other diseases. The sample size was determined based on the criterion that no new information emerged from the interview data, indicating that data saturation had been reached.²⁰

Data Collection

The interviews were conducted in a designated room within the ward. The demographic information collected included age, gender, educational background, occupation, family income, area, and caregiver. Qualitative in-depth interviews

Box I Questions Guiding the Interview

I. What nursing services have you received following your cancer diagnosis?

- 2. Are you familiar with the term SCNS? (If the interviewees are unclear, the interviewer will provide a detailed explanation of the information and related content).
- 3. Based on your understanding of SCN, how would you describe the type of care you are currently receiving? Do these services adequately meet your needs? Why or why not?
- 4. How has the content of your nursing services influenced you? What specific outcomes have you observed?
- 5. Do you perceive any issues with the services you are currently receiving? What improvements would you suggest?
- 6. What types of care, support, and assistance would you like to receive?
- 7. Do you have any additional comments or insights?

were carried out by the researcher, utilizing an interview guide to facilitate discussions regarding participants' experiences in meeting care needs (Box 1). This interview guide was developed by the research team following a thorough literature review and pilot testing. Each interview lasted between 20 and 40 minutes. All interviews were audio-recorded with the consent of the participants and subsequently transcribed verbatim.

Data Analysis

This study employed a qualitative content analysis method developed by Graneheim and Lundman for the analysis of data.²¹ This method facilitated a systematic description and interpretation of data, providing a structured approach to examine the background, significance, and interrelationships of the participants' nursing needs. It enabled the identification of challenges related to patient nursing needs and offered insights into potential solutions for these issues. The analysis processed consists of several stages: 1) data preparation, 2) organization of language units (including words, phrases, sentences, or paragraphs), 3) classification of units through coding, 4) assessment of coding consistency, and 5) extraction and support for the key theme results within a consistent sexual care framework. All analyses were conducted by researchers utilizing NVivo 12 qualitative data analysis software.

Results

Characteristics of Participants

A total of 25 OPCRC participated in this study, comprising 18 males and 7 females. The ages of participants ranged from 60 to 97 years, with a mean age of 73.68 ± 19.80 years (Table 1).

The Framework of Thematic Analysis

Thematic analysis of the interviews revealed four themes and thirteen sub-themes, including 1) disease management needs, 2) information acquisition needs, 3) emotional support needs, and 4) practical needs. The specific contents are presented in Table 2.

Disease Management Needs

Chemotherapy Toxicity Management

Chemotherapy-related side effects, such as nausea and diarrhea, contributed to the adverse physiological experiences and treatment outcomes of colorectal cancer patients. Patients expressed the need for more effective management strategies to alleviate these side effects.

The most prominent feeling after each chemotherapy session is an inability to eat and a persistent dry mouth. The doctor prescribed Kangfuxin Liquid for mouth rinsing, but its effectiveness has been limited. (P4)

No.	Gender	Age	Educational Background	Diagnosis	Surgery	Stoma	Chemotherapy	Living Area	Caregiver
		(Year)							
ΡI	Male	69	Middle school	Malignant tumors of the rectum	Yes	No	Oral targeted chemotherapeutics	Rural	Spouse
P2	Male	70	Middle school	Malignant tumors of the colon	Yes	Yes	Combined chemotherapy drug infusion	Rural	Spouse
P3	Male	76	Senior school	Malignant tumors of the rectum	Yes	Yes	No	City	No
P4	Female	71	Senior school	Malignant tumors of the rectum	Yes	Yes	Combined chemotherapy drug infusion	City	Spouse
P5	Female	76	Senior school	Malignant tumors of the colon	No	No	Combined chemotherapy drug infusion	City	Spouse
P6	Male	70	Primary school or less	Malignant tumors of the colon	Yes	Yes	Oral targeted chemotherapeutics	City	Spouse
P7	Male	65	Middle school	Malignant tumors of the rectum	Yes	Yes	No	Rural	Spouse
P8	Male	66	Senior school	Malignant tumors of the rectum	Yes	Yes	Combined chemotherapy drug infusion	City	Children
P9	Female	85	Primary school or less	Malignant tumors of the rectum	Yes	Yes	Oral targeted chemotherapeutics	Rural	No
P10	Female	66	Primary school or less	Malignant tumors of the rectum	Yes	No	Oral targeted chemotherapeutics	City	Spouse
PII	Male	64	Middle school	Malignant tumor of ascending colon	Yes	No	Combined chemotherapy drug infusion	City	Spouse
PI2	Female	75	Middle school	Malignant tumors of the colon	Yes	No	No	Rural	Children
PI3	Female	72	Primary school or less	Malignant tumors of the rectum	Yes	No	Oral targeted chemotherapeutics	Rural	Children
PI4	Female	75	Primary school or less	Malignant tumors of the colon	Yes	No	Combined chemotherapy drug infusion	City	Spouse
PI5	Male	81	Primary school or less	Malignant tumors of the colon	Yes	No	Combined chemotherapy drug infusion	City	Children
P16	Male	74	Senior school	Malignant tumors of the colon	No	No	Oral targeted chemotherapeutics	Rural	No

Table I Demographic Characteristics of Patients

(Continued)

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Table I (Continued).

No.	Gender	Age	Educational Background	Diagnosis	Surgery	Stoma	Chemotherapy	Living Area	Caregiver
		(Year)							
P17	Male	74	Primary school or less	Malignant tumors of the colon	Yes	No	Combined chemotherapy drug infusion	Rural	Spouse
PI8	Male	73	Middle school	Malignant tumor of sigmoid colon	Yes	Yes	Combined chemotherapy drug infusion	City	Spouse
P19	Male	60	Primary school or less	Malignant tumors of the rectum	No	No	No	Rural	No
P20	Male	81	Primary school or less	Malignant tumor of transverse colon	Yes	Yes	Combined chemotherapy drug infusion	City	No
P21	Male	70	Primary school or less	Malignant tumors of the colon	No	No	Oral targeted chemotherapeutics	Rural	Children

Table 2 Themes of Participants' Interview

Theme	Sub-Theme			
Disease management needs	Chemotherapy toxicity management			
	Ostomy management			
	Fatigue			
	Capacity to foresee potential risks			
Information acquisition needs	Nutritional information			
	Scientific information and decision making			
	Established and consistent communication channels			
Emotional support needs	Accessibility of medical services			
	Looking forward to supportive communication			
	Improve intimacy: love and companionship			
Practical needs	Dependency on professional care			
	Economic support			
	Detachment from negative emotions			

I experienced continuous diarrhea during the last infusion. I attempted to use montmorillonite powder, but it was ineffective. Do you have any other effective methods? (P7)

While some patients acknowledged that chemotherapy side effects were unavoidable, they emphasized that these effects should be managed to a degree that did not compromise their overall quality of life.

It would be beneficial if I could regain my appetite or experience less fatigue after chemotherapy. (P1)

Ostomy Management

The topics concerning the oral diet, hygiene cleaning, and maintenance of the prefecture device were significant for patients.

I am unable to consume gas-producing and greasy foods. Furthermore, the daily maintenance of the stoma poses a challenge, and I require time to acclimate to these changes. (P9)

The long-term use of pouches also impacted the emotional well-being of patients.

It is a bit difficult; I usually wear very long clothes to conceal it. (P15)

Fatigue

Fatigue was a common symptom experienced by patients undergoing chemotherapy; however, its intensity varied over time and was not continuous. Furthermore, the duration and severity of fatigue differed among individuals.

I feel asthma after each chemotherapy session when going up the stairs. It lasts about a week.

I always feel tired. (P1)

I began to experience a clear sense of fatigue and significant lethargy after third times of chemotherapy. (P20)

Capacity to Foresee Potential Risks

Participants experienced a fear of cancer recurrence and were eager to acquire relevant knowledge about how to mitigate this risk, including understanding the risk factors associated with cancer and the likelihood of recurrence.

Sometimes I felt uncomfortable when I was busy, but I didn't understand why. (P2)

Doctor advised me to be vigilant regarding digestive system diseases. However, how do I assess the effectiveness and challenges of early identification and treatment? (P7)

Information Acquisition Needs

Nutritional Information

Participants expressed concerns regarding their postoperative diet, including the frequency of meals and necessary cooking precautions.

I am unsure which foods are edible and which are not. (P9)

Addressing dietary issues, such as diarrhea and flatulence following chemotherapy, had emerged as a significant need among participants.

I consumed a serving of protein powder, which was intended to enhance my immunity; however, it resulted in significant bloating and diarrhea. (P16)

Balancing a post-ostomy diet with stoma care was a significant source of dietary anxiety for patients.

Various foods impact stoma cleanliness, which raises my concerns. Additionally, there are Several foods that I particularly enjoy but can no longer consume in large quantities, unfortunately. (P25)

Scientific Information and Decision Making

Participants desired information channels that were convenient, truthful, and professional. While internet resources offered convenience for patients, concerns about their professionalism and authenticity persisted.

There are too many advertisements on the Internet, and many of them are contradictory. I don't know what is true and what is false. (P14)

I hope the doctor can help us identify the information available online. (P21)

Information decision-making was another need expressed by the respondent to address the issue of uneven information quality.

If you could provide us with more time to assist us in making a choice. (P19)

Established and Consistent Communication Channels

The Internet communication platform, such as WeChat groups, offered effective information support for patients receiving care at home. However, some groups lost their efficacy.

The frequency of responses to messages in the group is decreasing. (P22)

Some nurses exhibit a lack of professionalism, resulting in ambiguous information being provided. (P3)

Emotional Support Needs

Accessibility of Medical Services

Anxiety, depression, and irritability were the primary emotional responses experienced during chemotherapy. The adverse effects of chemotherapy, along with the progression of the disease, contributed to these negative emotions. Furthermore, the waiting period before chemotherapy exacerbated feelings of distress.

I'm pretty good now, but I am still afraid that one day I might suddenly have a recurrence (sigh). (P6)

I feel anxious when I come to the hospital for chemotherapy for the second time. I am also concerned about the potential impact of this chemotherapy. (P2)

Looking Forward to Supportive Communication

The psychological burden experienced by family members and the sense of illness could hinder patients from initiating conversations about their pain, which was exacerbated by the threats of cancer and the side effects of chemotherapy.

I do not want my families to know my thoughts. (P11)

This disease is actually very frightening, and people are afraid of infection and feel unlucky. (P15)

Improve Intimacy: Love and Companionship

Participants reported an increase in their connections with family and friends. Concerned that cancer might shorten their time with loved ones, they expressed a desire for more opportunities to be with them.

I am very clingy now. I fear that I will not have the chance to be with him in the future. (P8)

Every time chemotherapy let me to be away from home for ten days, I felt a strong reluctance to leave my families and friends. (P17)

I am deeply concerned because I have always enjoyed good health; how could I have developed it (transverse colon malignant tumor)? I hope my family remains by my side, never leaving me, even for a moment. (P18)

Practical Needs

Dependency on Professional Care

The inadequate professional knowledge and skills of the caregiver contributed to the development of psychological insecurities.

I believed my wife would be able to care for people better than a nurse from the outset (diagnosis), but her ability is far inferior to that of a nurse. (P8)

We should receive training on home care before discharge. This level of professionalism must be enhanced; otherwise, I am concerned about returning home. (P10)

Care based on telematics support and life-focused care content was insufficient to address the elevated care needs of the participants.

My family primarily focuses on daily necessities such as food, clothing, housing, and transportation; however, there is limited attention given to psychological well-being. (P12)

Economic Support

Treatment costs were a significant concern for all participants, who expressed a desire for economic assistance or a reduction in treatment expenses.

It's really money to spend quickly, and the family has been dragged down. (P2)

I hope that the country will provide us with some subsidies for cancer treatment, or at least increase the reimbursement quota slightly. (P9)

The medical insurance reimbursement is insufficient. (P20)

Detachment From Negative Emotions

Cumbersome regular review procedures for medical treatment contributed to a perception of inadequate medical experiences.

As an elderly individual, I find it challenging to schedule an online hospital appointment using a mobile phone. (P2)

Generally, I spend one to two days at the hospital because there are too many people who need to be reviewed. (P20)

Discussion

This study investigated the experiences and perceptions of OPCRC in supportive care, aiming to enhance our understanding of their unique challenges and needs. To the best of our knowledge, few studies had conducted qualitative interviews on the care needs of OPCRC. By extracting and synthesizing interview data, this study identified four key themes, indicating that OPCRC required increased support in symptom management, access to informational resources, emotional companionship, and practical guidance.

This study found that the side effects of chemotherapy, such as nausea and diarrhea, led to gastrointestinal disorders in OPCRC, ultimately affecting their quality of life. Participants expressed a desire for nurses to address both the side effects of chemotherapy and the associated cleaning procedures. Effective management of chemotherapy-related side effects was beneficial for alleviating patient symptoms, which positively influenced the reduction of chemotherapy complications, enhanced chemotherapy adherence, and improved overall quality of life.²² Furthermore, patients undergoing severe chemotherapy experienced compromised physiological functions and reduced immunity, accompanied by increased fatigue.²³ The results of this study also indicated that the side effects experienced by OPCRC were inadequately managed, and there was a prevailing pessimistic outlook regarding the disease recurrence rates. Despite positive treatment outcomes, a lack of awareness contributed to a poor perception of recurrence risk.²⁴ Enhancing the ability to identify the symptoms associated with chemotherapy thresholds mitigated the severity of side effects and improved the overall symptom experience.²⁵ This approach also played a significant role in alleviating the sense of disease recurrence. When patients experienced inadequate thresholds for managing their conditions, they encountered heightened negative emotions, which diminished their confidence and enthusiasm for treatment.²⁶ Nurses, as key monitors of both the patient and their condition, should be vigilant in recognizing the causes of recurrence and the threatening symptoms associated with disease relapse. It was essential to provide comprehensive health information resources that addressed changes in the patient's condition, enabling them to better understand aspects of diet, preparation management, and rehabilitation

training. This empowerment could enhance their symptom management capabilities and reduced feelings of uncertainty regarding their illness.²⁷

This study found that OPCRC lacked adequate health information support, exhibited deficiencies in dietary management and skills, and expressed a strong need for nutritional knowledge. These findings aligned with the result of Li et al.²⁸ Effective nutrition management played a crucial role in the prevention and maintenance of CRC patients.²⁹ Therefore, it was essential to enhance nutritional health guidance for these patients, starting from the time of admission, and to provide regular feedback and guidance regarding their dietary results and nutritional levels. However, the need for effective management information remained unmet, particularly for ostomy patients who lacked experience in the early postoperative period and possess inadequate understanding and attitude towards their ostomy, which directly impacted their care experience and treatment decisions.³⁰ Respondents indicated that having an ostomy exacerbates the challenges associated with dietary management, as most patients struggled with food choices and ostomy care. Making informed decisions regarding ostomy management was crucial and aligns with the postoperative management needs of these patients.³¹ Postoperative nutritional management for colorectal cancer patients was a long-term commitment, necessitating an increase in patients' awareness of the risks associated with disease treatment and the importance of nutritional intake.³² Additionally, establishing information support groups specifically for postoperative nutrition and ostomy management education was essential for this population. Utilizing platforms such as We-Chat and remote video communication could create effective channels for patient care, facilitating the continuous flow of information and enhancing their understanding of the balance between ostomy lifestyle and nutritional management.

This study found that patients experienced anxiety and depression due to changes in physiological symptoms during chemotherapy. As the duration of chemotherapy extended, patients began to fear disease progression or recurrence, which intensified their negative emotions. Although this phenomenon aligned with the findings of Gong et al,³³ a key distinction was that the patients in this study demonstrated a limited willingness to actively communicate with their families. Instead, they preferred that their families took the initiative in providing support. This preference might be influenced by the mindset of older people within the Chinese cultural context, who were reluctant to perceive themselves as a burden to their children. Notably, respondents with a shorter duration of illness actively sought emotional support from their families. After experiencing the distressing side effects of surgeries and chemotherapy, these patients exhibited a significant short-term increase in their dependence on family support. Psychological support assisted cancer patients in establishing effective coping mechanisms to mitigate negative emotions.³⁴ Therefore, it was recommended that communication frequency and duration with patients be increased during the later stages of chemotherapy. Attention should be paid to the patients' emotional fluctuations, and efforts should be made to redirect their focus from negative emotions to positive experiences.³⁵ The need for care and companionship from family members, as highlighted in this research, had significantly increased. Family support enhanced individuals' subjective assessments of family functioning and cohesion.³⁶ Implementing family-centered care improve patients' quality of life and foster emotional connection.

Participants in this study indicated that the most effective care arose from the therapeutic services delivered by registered nurses, followed by the improvement of professional nursing skills among caregivers. Caregiving ability was a critical factor influencing the rehabilitation outcomes of cancer patients and their adaptation to society.³⁷ Historically, the role of registered nurses in continuous home care had been limited. However, with the rapid advancement of "Internet + Nursing Services", online nursing platforms had empowered registered nurses to engage more proactively in educating and connecting with colorectal cancer patients and their caregivers.³⁸ Initiatives such as partner support programs and e-health support had demonstrated success in enhancing the capabilities of caregivers.^{39,40} This study found that OPCRC faced challenges in scheduling appointments for chemotherapy and regular follow-ups. The lack of accessible medical treatment options necessitated that some patients traveled across regions for chemotherapy, exacerbating the strain on regional medical resources and hindering timely follow-up care. Therefore, the medical department should proactively explore effective management strategies, offer targeted follow-up services, expedite the training of relevant personnel, and enhance both the medical service environment and the overall patient experience.

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Limitation

As far as we know, this study represented one of the few qualitative investigations into the care needs of older Chinese patients undergoing chemotherapy for colorectal cancer. However, this study did have certain limitations. Firstly, although the researchers possessed high-level qualitative research expertise, the findings might still be susceptible to subjective interpretations, which resulted bias. Secondly, the research was conducted at a single hospital, despite our efforts to include participants from diverse cities, rural areas, and varying socioeconomic backgrounds. The differences in sanitary conditions across regions might limit the generalizability of the results. Lastly, although the sample size was consistent with the research design, the relatively small number of respondents might limit the findings of the study and their generalizability across different regions and cultures.

Conclusion

This study discussed the preferences for supportive care demands among OPCRC. Symptom management, educational information, emotional support, and practical guidance were pivotal aspects of nursing care for OPCRC undergoing long-term chemotherapy. It was essential to enhance caregivers' abilities to recognize and prevent risks associated with symptom management, as well as to improve their emergency response capabilities for sudden symptoms. Establishing information support groups for discharged patients facilitated the promotion of continuous nursing education through collective information sharing. Encouraging family caregivers to engage in long-term life care and psychological support interventions was critical. Employing cognitive-behavioral therapy, positive psychology interventions, and other methodologies could empower family members to actively provide emotional support to patients. Additionally, government and medical institutions should optimize health support channels for cancer patients, improve the overall environment, and enhance the convenience of medical treatment.

Abbreviations

CRC, Colorectal cancer; OPCRC, Older patients with colorectal cancer; SCNs, Supportive care needs.

Data Sharing Statement

The study data have not been previously published. Data supporting the findings of this study are available from the corresponding author upon reasonable request.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis, and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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