

Improving Quality of Life, Symptom Burden, Psychological Distress, and Self-Care in Critically Ill Colorectal Cancer Patients: The Effectiveness of an Integrated Nurse-Led Home Palliative Care Program

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ABSTRACT

Background:

Critically ill patients with colorectal cancer frequently experience multiple symptoms, psychological distress, impaired self-care, and poor quality of life. Extending palliative care from hospital to home may provide continuous support and improve patients' ability to manage their illness.

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Aim:

To evaluate the effectiveness of an integrated nurse-led home palliative care program on quality of life, symptom burden, psychological distress, and self-care among critically ill patients with colorectal cancer.

Subjects and Methods:

A quasi-experimental one-group pretest–posttest design with follow-up was conducted among 100 critically ill patients with colorectal cancer, selected using a convenience sampling technique from the Sohag Oncology Institute, Sohag City, Egypt. Data were collected using Tool I: Structured Patient Assessment Tool, Tool II: Revised Edmonton Symptom Assessment System (ESAS-r), Tool III: Hospital Anxiety and Depression Scale (HADS), Tool IV: Self-Care Assessment Scale, and Tool V: European Organization for Research and Treatment of Cancer Quality of Life Questionnaire–Core 30 (EORTC QLQ-C30). The intervention included individualized symptom management, psychological support, self-care education, medication guidance, nutritional advice, caregiver education, and structured nurse-led home follow-up. Patients were assessed before the intervention, immediately after the intervention, and at follow-up.

Results:

The findings demonstrated significant improvements in the studied patients' outcomes following implementation of the program. Symptom burden and psychological distress decreased, whereas self-care and quality of life improved after the intervention. These improvements were generally maintained at follow-up, although slight changes from the immediate post-intervention assessment were observed. The differences across the three assessment periods were statistically significant ($p < 0.001$).

Conclusion:

The integrated nurse-led home palliative care program was associated with significant improvements in symptom burden, psychological distress, self-care, and quality of life among critically ill patients with colorectal cancer.

Recommendations:

Integrating nurse-led home palliative care into the continuum of oncology services is recommended, with emphasis on individualized symptom management, psychological support, self-care education, caregiver involvement, and continued follow-up after hospital discharge.

Keywords: Colorectal Cancer; Home Palliative Care; Nurse-Led Intervention; Psychological Distress; Quality of Life; Symptom Burden; Self-Care.

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Introduction

Colorectal cancer (CRC) is one of the most common malignancies worldwide and represents a major global health burden. Patients with colorectal cancer may experience substantial physical, psychological, and functional challenges throughout the disease

trajectory, particularly those with advanced or critical illness. The increasing burden of CRC highlights the need for comprehensive models of care that address not only disease management but also symptom control, psychosocial well-being, functional status, and quality of life. (International Agency for Research on Cancer [IARC], 2024).

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Patients with advanced colorectal cancer frequently experience multiple concurrent symptoms, including pain, fatigue, gastrointestinal disturbances, nausea, vomiting, constipation, diarrhea, appetite loss, and sleep disturbances. These symptoms may occur simultaneously and interact with one another, resulting in increased symptom burden and functional limitations. In addition, treatment-related effects, surgical complications, and the presence of a stoma may further affect patients' physical functioning and psychosocial well-being. Consequently, symptom burden represents an important target for palliative nursing care. **(Henson et al., 2020).**

Quality of life is a particularly important outcome for patients with advanced colorectal cancer because the disease and its treatment can affect physical, emotional, social, and role functioning. Patients receiving palliative care may experience impaired health-related quality of life as a consequence of symptom burden, psychological distress, reduced independence, and difficulties in performing daily activities. Therefore, palliative care interventions should adopt a multidimensional approach that aims to improve patients' overall well-being rather than focusing exclusively on disease-related outcomes. **(Flyum et al., 2021).**

Psychological distress is another important concern among patients with advanced cancer. Anxiety and depressive symptoms may arise from uncertainty about prognosis, physical deterioration, treatment demands, loss of independence, changes in body image, and concerns regarding family and future functioning. Psychological distress can coexist with physical symptoms and may negatively influence coping, treatment participation, self-care, and quality of life. Early identification and appropriate psychosocial support are therefore essential components of comprehensive palliative care **(Huda, 2022).**

Palliative care is an interdisciplinary approach that aims to improve the quality of life of patients and their families facing life-threatening illness through prevention and relief of suffering. It includes early identification and management of pain and other physical symptoms as well as attention to psychological, social, and spiritual needs. The World Health Organization emphasizes that palliative care should be integrated across health-care settings, including community and home-based services, to ensure continuity of care and support for patients and families. **(World Health Organization [WHO], 2020).**

Home-based palliative care can provide an important extension of hospital-based services for patients with advanced cancer. Care delivered at home may facilitate symptom monitoring, medication management, self-care support, caregiver education, psychological support, and early recognition of deterioration. It may also enable patients to remain in a familiar environment while receiving individualized care according to their needs and preferences. Evidence from home-based palliative care research indicates that coordinated community and home services can contribute to improved symptom management and patient-centered outcomes **(Lin et al., 2025).**

Nurses play a central role in the delivery of integrated palliative care because of their continuous contact with patients and caregivers and their ability to provide comprehensive assessment, symptom monitoring, health education, psychosocial support, and coordination of care. Nurse-led interventions can also strengthen patients' self-care abilities by providing individualized education regarding medication adherence, nutrition, symptom management, personal hygiene, activity, and recognition of warning signs. Such interventions are particularly relevant when patients transition from hospital to home. **(Alqaisi et al., 2026).**

Self-care is especially important for patients with advanced colorectal cancer because functional limitations and treatment-related symptoms may reduce their ability to independently manage medications, nutrition, elimination, stoma care when applicable, symptom monitoring, and daily activities. Providing patients and caregivers with individualized education and ongoing nursing support may enhance self-management and promote greater participation in care. Thus, self-care represents an important outcome within an integrated home palliative care model **(Alvarez Del Castillo Gonzalez et al., 2025).**

Recent oncology guidelines support the integration of palliative care with standard cancer care, particularly for patients with advanced cancer and those experiencing substantial symptom burden or psychosocial needs. Early and coordinated palliative care can address multiple dimensions of illness simultaneously, including symptom management, psychological support, communication, caregiver needs, and quality of life. This approach supports continuity

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between hospital-based treatment and community or home-based care. (Sanders et al., 2024).

The nurse plays a central role in integrated home palliative care for critically ill patients with colorectal cancer through comprehensive assessment of physical, psychological, functional, and social needs. The nurse regularly assesses pain and other symptoms, monitors treatment responses, provides symptom-management interventions, supports medication adherence, and identifies early signs of deterioration requiring medical referral. In addition, the nurse provides psychological support, therapeutic communication, and individualized health education to promote coping and improve patients' quality of life (Zhang & Fu, 2022).

The nurse also promotes self-care and continuity of care by educating patients and caregivers about medication use, nutrition, personal hygiene, symptom monitoring, daily activities, and warning signs that require professional assistance. The nurse supports caregivers emotionally, coordinates communication with the multidisciplinary healthcare team, facilitates referrals when needed, and provides structured follow-up at home. These responsibilities help maintain continuity between hospital and home care and address the patient's symptom burden, psychological well-being, self-care, and quality of life (Muhlare & Downing, 2023).

Significance of the Study

Colorectal cancer is associated with considerable symptom burden, psychological distress, reduced self-care ability, and impaired quality of life, particularly among patients with advanced or critical illness. Although palliative care addresses these multidimensional needs, continuity of care after hospital discharge remains an important challenge. Home-based palliative care may provide an opportunity to extend symptom management, psychological support, patient education, and caregiver support into the patient's home environment (Sanders et al., 2024).

Nurses are strategically positioned to provide continuous assessment, symptom management, self-care education, psychological support, caregiver education, and coordination of services. An integrated nurse-led home palliative care program may therefore provide a structured approach to addressing several

patient outcomes simultaneously rather than focusing on a single symptom ((Muhlare & Downing, 2023). Accordingly, evaluating such a program among critically ill patients with colorectal cancer at the **Sohag Oncology Institute, Sohag City**, may provide useful evidence regarding the contribution of nurse-led home care to improving symptom burden, psychological well-being, self-care, and quality of life.

Aim of the Study

To evaluate the effectiveness of an integrated nurse-led home palliative care program on quality of life, symptom burden, psychological distress, and self-care among critically ill patients with colorectal cancer.

Research Hypotheses

- Critically ill patients with colorectal cancer who receive the integrated nurse-led home palliative care program will demonstrate **lower symptom burden** after the intervention compared with baseline.
- Patients who receive the program will demonstrate **lower levels of psychological distress**, including anxiety and depression, after the intervention compared with baseline.
- Patients who receive the program will demonstrate **improved self-care abilities** after the intervention compared with baseline.
- Patients who receive the program will demonstrate **improved quality of life** after the intervention compared with baseline.

Subjects and Methods

Research Design:

A quasi-experimental **one-group pretest-posttest design with follow-up** was used .

Setting:

The study was conducted at the Sohag Oncology Institute, Sohag City, Egypt, which provides specialized diagnostic, therapeutic, and supportive oncology services for patients with different types and stages of cancer.

Subjects :

A convenience sample of 100 critically ill patients with colorectal cancer was recruited from the study setting. Eligible patients were

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selected and were followed from the baseline assessment through the post-intervention and follow-up assessments.

Data Collection Tools

Data were collected using five tools:

Tool I: Structured Patient Assessment Tool

A structured patient assessment tool was developed by the researcher after reviewing relevant literature on colorectal cancer, palliative care, symptom management, and home-based nursing care. The tool was used to obtain baseline demographic, clinical, and treatment-related information and to guide individualized nursing assessment.

The tool consisted of two parts:

Part I: Socio-demographic characteristics:

This part included items related to the patient's age, sex, marital status, residence, and educational level, occupation.

Part II: Clinical characteristics: This part assessed clinical characteristics including duration of colorectal cancer, Presence of comorbidities, Most common comorbidities, Previous hospitalization during the last 6 months, and Presence of cancer-related complications.

Tool II: Revised Edmonton Symptom Assessment System (ESAS-r)

The **Revised Edmonton Symptom Assessment System (ESAS-r)** by Watanabe et al., (2011) was used to assess the severity of common symptoms experienced by patients with advanced cancer and those receiving palliative care. The ESAS-r includes nine core symptoms: pain, tiredness, nausea, depression, anxiety, drowsiness, lack of appetite, and shortness of breath.

Each symptom is rated on an 11-point numerical rating scale from 0 to 10, where 0 indicates absence of the symptom or no problem and 10 indicates the worst possible severity.

Scoring system:

- Each symptom: **0–10**
- Nine core symptoms: **0–90 total score**

- Higher scores indicate **greater overall symptom burden**.

For individual symptoms, scores of **0 = no symptom**, **1–3 = mild**, **4–6 = moderate**, and **7–10 = severe** may be used for clinical description.

The total ESAS-r score was calculated by summing the scores of the nine core symptoms. A reduction in the total score following the intervention indicated improvement in symptom burden.

Tool III: Hospital Anxiety and Depression Scale (HADS)

The Hospital Anxiety and Depression Scale (HADS) developed by **Zigmond and Snaith (1983)** was used to assess psychological distress in the studied patients. It consists of 14 items, divided into two subscales: seven items for anxiety (HADS-A) and seven items for depression (HADS-D). Each item is rated on a four-point response scale scored from **0 to 3**. The scale was designed to assess anxiety and depression while minimizing the influence of physical symptoms that may occur because of medical illness.

Scoring system:

Each subscale ranges from **0 to 21**:

- **0–7**: Normal
- **8–10**: Borderline
- **11–21**: Abnormal

Thus:

- Anxiety score = **0–21**
- Depression score = **0–21**

Total HADS score = **0–42**

Higher scores indicate greater psychological distress. The anxiety and depression subscales were analyzed separately, while the total HADS score could be used as an overall indicator of psychological distress.

Tool IV: Self-Care Assessment Scale

A **researcher-developed Self-Care Assessment Scale** was used to assess the patient's ability to perform recommended self-care activities during illness and home-based

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palliative care (WHO, 2020). The scale consisted of **15 items** covering important areas of self-care, including medication adherence, symptom monitoring, pain-management practices, nutritional care, hydration, personal hygiene, bowel, bladder care, sleep, rest, physical activity according to tolerance, prevention of complications, recognition of warning signs, follow-up attendance, and appropriate communication with healthcare providers.

Scoring system:

Total Score	Percentage	Level
23–30	≥75%	Good
18–<23	60–<75%	Moderate
0–<18	<60%	Poor

The EORTC QLQ-C30 was used to assess health-related quality of life among patients with colorectal cancer. It is a validated 30-item cancer-specific quality-of-life instrument. The questionnaire assesses five functional dimensions, three symptom dimensions, global health status/quality of life, and six additional single symptom/impact items (Aaronson et al., 1993).

The five functional scales include:

- Physical functioning
- Psychological well-being
- Social functioning
- Symptom-related quality of life

The three symptom scales include:

- Fatigue
- Nausea and vomiting
- Pain

Additional six single items assess

- Dyspnea
- Insomnia
- appetite loss
- Constipation
- Diarrhea
- Financial difficulties.

Scoring system:

Items 1–28 are scored using a 4-point response scale, while items 29 and 30, which assess global health status/quality of life, use a 7-point scale. The raw scores are transformed linearly to a 0–100 scale according to the

Each item was scored as follows:

- 2 = Done adequately/regularly
- 1 = Done partially or sometimes
- 0 = Not done/never

The total score ranged from 0 to 30.

Tool V: European Organization for Research and Treatment of Cancer Quality of Life Questionnaire–Core 30 (EORTC QLQ-C30)

EORTC QLQ-C30 scoring manual (Fayers et al., 2001).

For interpretation:

- Functional scales: higher scores indicate better functioning.
- Global health status/quality of life: higher scores indicate better quality of life.
- Symptom scales/items: higher scores indicate greater symptom burden or problems.

Validity

The validity of the data collection tools was established to ensure that they adequately measured the intended study variables. The Structured Patient Assessment Tool and Self-Care Assessment Scale, which were developed by the researcher based on relevant literature, were reviewed by a panel of five experts in Medical-Surgical Nursing, Oncology Nursing, Palliative Care, and Community Health Nursing. The experts assessed the tools for clarity, relevance, comprehensiveness, appropriateness of items, and suitability for critically ill colorectal cancer patients receiving home palliative care. Necessary modifications were made according to their recommendations.

The Revised Edmonton Symptom Assessment System (ESAS-r), Hospital Anxiety and Depression Scale (HADS), and EORTC QLQ-C30 are established standardized instruments with documented validity and extensive use among patients with cancer and palliative-care populations. The HADS was originally developed by Zigmond and Snaith (1983),

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while the EORTC QLQ-C30 was developed and validated for assessing health-related quality of life in oncology patients by Aaronson et al. (1993). The ESAS-r has also been evaluated for use in palliative-care populations.

Reliability

The reliability of the researcher-developed tools was assessed to determine their internal consistency and stability. **Cronbach's alpha coefficient** was used to assess the internal consistency of the Self-Care Assessment Scale and relevant multi-item components of the Structured Patient Assessment Tool. A Cronbach's alpha coefficient of ≥ 0.70 was considered acceptable for research purposes. The standardized instruments used in the study have demonstrated acceptable reliability in previous research. The HADS has established internal consistency for both its anxiety and depression subscales, while the EORTC QLQ-C30 has demonstrated acceptable reliability and validity across different cancer populations. The ESAS-r is a clinically established symptom assessment instrument used extensively in palliative-care settings.

Pilot Study

A pilot study was conducted on 10% of the total study sample (10 patients) before commencement of the main data collection. The pilot participants were selected from the same setting and met the same inclusion criteria as the main study participants but were excluded from the final study sample to avoid possible contamination of the results. The pilot study aimed to assess the clarity, applicability, feasibility, sequence, and estimated time required for completing the data collection tools and implementing the home-based nursing intervention. It also helped identify any ambiguous or difficult items, assess the suitability of the assessment procedures, and determine whether any modifications were required before the main study. Based on the pilot study findings, the necessary modifications were made to improve the clarity and applicability of the tools and intervention procedures. The pilot study did not result in major changes to the study design or objectives.

Ethical Considerations

Before conducting the study, official approval and ethical committee were obtained from faculty of nursing and the responsible

authorities of Sohag Oncology Institute, Sohag City, Egypt, and the study was conducted in accordance with applicable institutional research requirements. The purpose and procedures of the study were explained clearly to each eligible patient. Participation was voluntary, and written informed consent was obtained before data collection and implementation of the intervention. Patients were informed that they had the right to refuse participation or withdraw from the study at any time without affecting the care or services they received. Confidentiality and privacy were maintained throughout the study. Patient information was coded rather than identified by name, and collected data were used only for scientific research purposes. Data were stored securely and were accessible only to the research team.

Phases of the Intervention

The integrated nurse-led home palliative care program was implemented through three main phases: **assessment and preparation, intervention implementation, and evaluation/follow-up.**

Phase I: Assessment and Preparation

Before starting the intervention, each patient underwent a comprehensive baseline assessment. The researcher collected socio-demographic and clinical data and assessed symptom burden, psychological distress, self-care abilities, and quality of life using the study tools.

The patient's functional status, medication use, nutritional condition, home-care needs, caregiver availability, psychological concerns, and priority palliative-care needs were also assessed. The findings were used to identify individual needs and formulate an individualized nursing care plan. The assessment phase was conducted **before the intervention sessions** and was not considered one of the intervention sessions. The researcher also explained the purpose, content, schedule, and expected benefits of the program to the patient and caregiver and obtained informed consent before participation.

Phase II: Intervention Sessions

The intervention consisted of eight structured nurse-led home palliative-care sessions delivered over four consecutive weeks, with two sessions per week. Each session lasted

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approximately 45–60 minutes, depending on the patient's clinical condition, tolerance, and

Session	Main Content	Duration
Session 1: Understanding Palliative Care and Symptom Monitoring	Explanation of home palliative care, patient's role in care, identification and monitoring of common symptoms, symptom diary, and when to report worsening symptoms	45–60 min
Session 2: Pain and Symptom Management	Pain assessment, pharmacological adherence, non-pharmacological approaches, management of fatigue, nausea, dyspnea, appetite loss, and other common symptoms	45–60 min
Session 3: Medication and Treatment Management	Medication schedule, correct medication use, adherence, prevention of medication errors, management of common adverse effects, and communication with healthcare providers	45–60 min
Session 4: Nutrition and Physical Self-Care	Nutritional and hydration advice, oral and personal hygiene, bowel care, activity according to tolerance, sleep and rest, and prevention of complications	45–60 min

During all sessions, the nurse used individualized education, demonstration, discussion, active participation, reinforcement, and feedback according to the patient's learning needs and clinical condition.

Phase IV: Evaluation and Follow-up Phase

At the end of the four-week intervention, the same study tools were reapplied immediately after completion of the intervention to assess changes in symptom burden, psychological distress, self-care, and quality of life. A follow-up assessment was conducted two months after completion of the intervention to determine whether the improvements achieved

individual needs.

Session	Main Content	Duration
Session 5: Psychological Support and Coping	Emotional support, anxiety and depressive symptoms, active listening, relaxation techniques, coping strategies, social support, and communication	45–60 min
Session 6: Self-Care and Caregiver Training	Activities of daily living, symptom observation, self-care skills, caregiver responsibilities, safe assistance, and prevention of caregiver burden and complications	45–60 min
Session 7: Home Safety and Continuity of Care	Home safety, fall and complication prevention, recognition of warning signs, appropriate response to deterioration, follow-up, and coordination with healthcare providers	45–60 min
Session 8: Reinforcement and Consolidation	Review and reinforcement of previous sessions, correction of difficulties, strengthening self-care and symptom-management skills, caregiver questions, and individualized recommendations	45–60 min

immediately after the program were maintained over time. During the follow-up period, the researcher maintained appropriate contact with patients and caregivers through scheduled telephone follow-up when needed to reinforce self-care practices, monitor symptoms, and identify any emerging problems.

Statistical Analysis

Data were coded, tabulated, and statistically analyzed using the Statistical Package for the Social Sciences (SPSS), version 26. Descriptive statistics were used to summarize the study variables. Categorical variables were

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presented as frequencies and percentages, while quantitative variables were presented as means and standard deviations (Mean $\pm$ SD). The Chi-square test (χ^2) was used to compare categorical variables when appropriate. For comparison of quantitative variables between two related measurements, the paired t-test was used when the data met the assumptions of parametric analysis. To compare the patients' outcomes across the three assessment periods (pre-intervention, immediately post-intervention, and two-month follow-up), Repeated Measures Analysis of Variance (Repeated Measures ANOVA) was used for

Results

Table (1): Distribution of the Studied Critically Ill Patients with Colorectal Cancer According to Their Sociodemographic Characteristics (N = 100)

Sociodemographic characteristics	No.	%
Age (years)		
40–<50	18	18.0
50–<60	32	32.0
60–<70	35	35.0
≥ 70	15	15.0
Mean $\pm$ SD	59.8 $\pm$ 8.7	
Sex		
Male	58	58.0
Female	42	42.0

Table (1) shows that more than one-third of the studied patients (35.0%) were aged 60–<70 years, followed by those aged 50–<60 years (32.0%), with a mean age of 59.8 $\pm$ 8.7 years. Males represented 58.0% of the studied patients, compared with 42.0% females. Regarding marital status, the majority were married (81.0%). Concerning educational level,

Table (2): Distribution of the Studied Patients According to Their Clinical Characteristics (N = 100)

Clinical characteristics	No.	%
Duration of colorectal cancer		
<1 year	19	19.0
1–<3 years	47	47.0
≥ 3 years	34	34.0
Presence of comorbidities		
Yes	72	72.0

normally distributed quantitative variables. When the assumptions of repeated-measures ANOVA were not met, the appropriate non-parametric alternative, the Friedman test, was used. Post-hoc pairwise comparisons were performed when the overall repeated-measures test was statistically significant to identify the specific time points at which significant differences occurred. The level of statistical significance was set at $p < 0.05$, while $p < 0.001$ was considered highly statistically significant. A $p \geq 0.05$ was considered statistically non-significant.

Sociodemographic characteristics	No.	%
Marital status		
Married	81	81.0
Widowed	11	11.0
Divorced	5	5.0
Single	3	3.0
Educational level		
Illiterate	28	28.0
Read and write	21	21.0
Basic education	26	26.0
Secondary education	17	17.0
University education	8	8.0
Residence		
Rural	67	67.0
Urban	33	33.0

28.0% of patients were illiterate, while only 8.0% had university education. In relation to residence, approximately two-thirds of the studied patients (67.0%) were from rural areas. These findings indicate that the studied group was predominantly older, married, male, and rural-dwelling, with relatively limited educational attainment.

Clinical characteristics	No.	%
No	28	28.0
Most common comorbidities*		
Hypertension	43	59.7
Diabetes mellitus	36	50.0
Cardiovascular disease	18	25.0
Chronic respiratory disease	11	15.3
Previous hospitalization during the last 6 months		
Yes	64	64.0

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Clinical characteristics	No.	%
No	36	36.0
Presence of cancer-related complications		

*Percentages for comorbidities are calculated from patients with comorbidities (n = 72) and therefore may exceed 100% because more than one response was allowed.

Table (2) illustrates that nearly half of the studied patients (47.0%) had been living with colorectal cancer for 1–<3 years, while 34.0% had a disease duration of three years or more. **Table (3): Distribution of the Studied Patients According to Their Overall Symptom Burden Before, Immediately After the Intervention, and at Follow-up (N = 100)**

Level of symptom burden	Pre-intervention No. (%)	Post-intervention No. (%)	Follow-up No. (%)
Mild	12 (12.0)	73 (73.0)	68 (68.0)

Table (3) demonstrates a pronounced improvement in the overall symptom burden following implementation of the integrated home palliative care program. Before the intervention, more than half of the patients (53.0%) had a high symptom burden, while only 12.0% had a mild symptom burden. Immediately after the intervention, the proportion with low symptom burden **Table (4): Total Mean Scores of the Symptom burden among the Studied Patients Before, Immediately After the Intervention, and at Follow-up (N = 100)**

Symp tom domain	Pre-intervention Mean $\pm$ SD	Post-intervention Mean $\pm$ SD	Follo w-up Mean $\pm$ SD	Repea ted Measures ANOVA (F)	p-value
Total	33.6 $\pm$	15.1 $\pm$	16.9	267.51	<0.0

*Statistically significant.

Table (4) reveals a substantial reduction in all assessed symptom domains after implementation of the intervention. The mean pain score decreased from 7.2 ± 1.5 before the intervention to 3.1 ± 1.2 immediately afterward and remained relatively low at follow-up (3.5 ± 1.3). Similar reductions were observed in fatigue, gastrointestinal symptoms, sleep

Clinical characteristics	No.	%
Yes	69	69.0
No	31	31.0

Comorbidities were reported among 72.0% of patients, with hypertension and diabetes mellitus being the most frequently reported conditions. Furthermore, 64.0% had experienced hospitalization during the previous six months, indicating considerable healthcare utilization. Cancer-related complications were present among 69.0% of the studied patients.

Level of symptom burden	Pre-intervention No. (%)	Post-intervention No. (%)	Follow-up No. (%)
Moderate	35 (35.0)	22 (22.0)	25 (25.0)
High	53 (53.0)	5 (5.0)	7 (7.0)
Test	$\chi^2 = 92.47$		
p-value	<0.001*		

increased markedly to 73.0%, whereas the proportion with high symptom burden decreased to 5.0%. At follow-up, the improvement was largely maintained, with 68.0% of patients classified as having low symptom burden and only 7.0% having a high burden. The observed differences were statistically significant ($p < 0.001$).

Symp tom domain	Pre-intervention Mean $\pm$ SD	Post-intervention Mean $\pm$ SD	Follo w-up Mean $\pm$ SD	Repea ted Measures ANOVA (F)	p-value
symp tom burden score	5.8	3.9	± 4.2		01*

disturbance, and psychological symptoms. The total symptom burden score decreased from 33.6 ± 5.8 at baseline to 15.1 ± 3.9 immediately after the intervention and remained improved at follow-up (16.9 ± 4.2). Repeated-measures ANOVA demonstrated statistically significant differences across the three assessment periods for all symptom domains and the total score ($p < 0.001$).

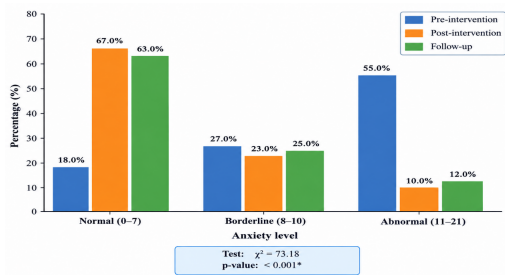


Figure (1): shows a clear improvement in anxiety levels following the intervention. Before implementation of the program, 55.0% of patients had abnormal anxiety levels, compared with only 18.0% who had normal scores. Immediately after the intervention, the proportion with normal anxiety increased to 67.0%, while abnormal anxiety decreased to 10.0%. At follow-up, 63.0% remained within the normal range, and only 12.0% had abnormal anxiety. The differences across the three assessment periods were statistically significant ($p < 0.001$).

Figure (1): Distribution of the Studied Patients According to Anxiety Level Before, Immediately After the Intervention, and at Follow-up (N = 100)

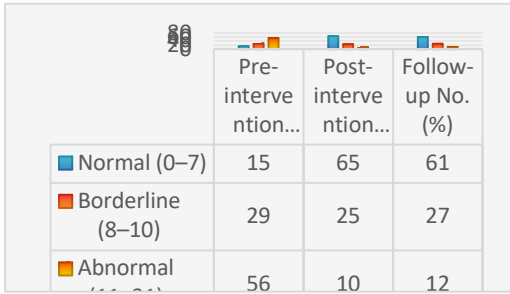


Figure (2): demonstrates a marked reduction in depressive symptoms following the integrated palliative care program. At baseline, more than half of the studied patients (56.0%) had abnormal depression scores, whereas only 15.0% had normal scores. Immediately after the intervention, normal depression scores increased to 65.0%, accompanied by a substantial reduction in abnormal scores to 10.0%. At follow-up, 61.0% of patients remained within the normal range and only 12.0% had abnormal depression scores.

the intervention, normal depression scores increased to 65.0%, accompanied by a substantial reduction in abnormal scores to 10.0%. At follow-up, 61.0% of patients remained within the normal range and only 12.0% had abnormal depression scores.

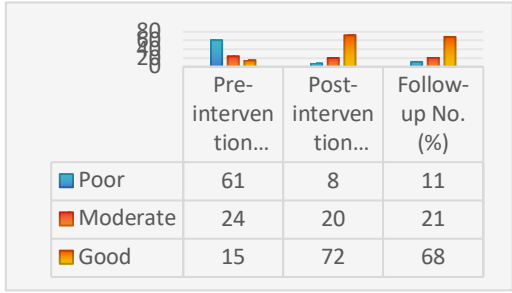


Figure (3) illustrates substantial improvement in patients' self-care abilities after receiving the integrated nurse-led program. Before the intervention, the majority of patients (61.0%) demonstrated poor self-care, whereas only 15.0% had good self-care. Immediately after the intervention, the proportion with good self-care increased markedly to 72.0%, while poor self-care decreased to 8.0%. At follow-up, the majority continued to demonstrate good self-care (68.0%), with only 11.0% remaining in the poor category.

Figure (3): Distribution of the Studied Patients According to Their Level of Self-Care Before, Immediately After the Intervention, and at Follow-up (N = 100)

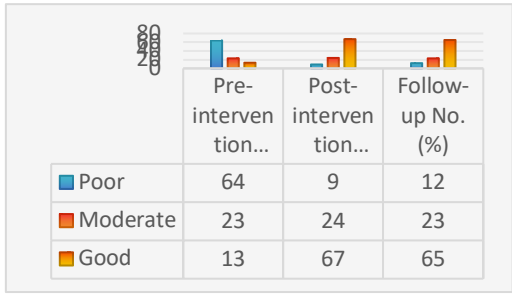


Figure (4): Distribution of the Studied Patients According to Their Overall Quality of Life Before, Immediately After the Intervention, and at Follow-up (N = 100)

Figure (4): indicates a substantial improvement in the overall quality of life of the studied patients following implementation of the home palliative care program. Before the intervention, nearly two-thirds of patients (64.0%) had poor quality of life, while only 13.0% reported a good level. Immediately after the intervention, the proportion with good

Table (5): Mean Quality-of-Life Domain Scores among the Studied Patients Before, Immediately After the Intervention, and at Follow-up (N = 100)

Quality-of-life domain	Pre-intervention Mean $\pm$ SD	Post-intervention Mean $\pm$ SD	Follow-up Mean $\pm$ SD	Repeated Measures ANOVA (F)	p-value
Physical functioning	42.6 $\pm$ 8.4	68.7 $\pm$ 7.5	65.9 $\pm$ 7.8	228.45	<0.001*
Psychological well-being	45.1 $\pm$ 9.1	70.3 $\pm$ 8.2	67.8 $\pm$ 8.5	214.72	<0.001*
Social functioning	47.3 $\pm$ 8.7	71.5 $\pm$ 7.9	69.1 $\pm$ 8.1	196.38	<0.001*
Symptoms	39.8 $\pm$	67.2 $\pm$	64.8	241.6	<0.001*

Table (5) shows significant improvement across all assessed quality-of-life domains. The total quality-of-life score increased from 43.7 $\pm$ 6.8 before the intervention to 69.4 $\pm$ 6.2 immediately after the intervention and remained relatively high at follow-up (66.9 $\pm$ 6.5). Improvements were also observed in physical functioning, psychological well-being, social functioning, and symptom-related quality of life. The repeated-measures ANOVA revealed statistically significant differences across the three assessment periods for all domains and the total quality-of-life score ($p < 0.001$).

Discussion

Colorectal cancer represents an important health challenge, particularly among patients with advanced or critical illness, because it may be accompanied by multiple physical symptoms, psychological distress, functional limitations, and impaired quality of life. Patients in the palliative phase of colorectal cancer commonly experience complex and interacting clinical and psychosocial needs, highlighting the importance of comprehensive

quality of life increased markedly to 67.0%, whereas poor quality of life decreased to 9.0%. At follow-up, the improvement was largely sustained, with 65.0% of patients maintaining good quality of life and only 12.0% remaining in the poor category. The differences were statistically significant ($p < 0.001$).

Quality-of-life domain	Pre-intervention Mean $\pm$ SD	Post-intervention Mean $\pm$ SD	Follow-up Mean $\pm$ SD	Repeated Measures ANOVA (F)	p-value
symptom-related quality of life	7.9	7.3	$\pm$ 7.6	3	01*
Total quality-of-life score	43.7 $\pm$ 6.8	69.4 $\pm$ 6.2	66.9 $\pm$ 6.5	286.57	<0.001*

*Statistically significant.

supportive care that extends beyond disease-directed treatment. A systematic review and meta-analysis reported that patients with colorectal cancer in the palliative phase generally experience reduced health-related quality of life and that their quality of life is influenced by multiple sociodemographic and clinical factors. (Flyum et al., 2021).

The importance of palliative care is further emphasized by the World Health Organization, which identifies palliative care as an essential approach for improving the quality of life of patients and families facing life-threatening illness through the prevention and relief of physical, psychological, social, and spiritual suffering. WHO also recommends integrating palliative care into primary health care, community, and home-based services to promote continuity and accessibility of care. (WHO, 2020). Within this context, nurse-led home palliative care is particularly relevant because nurses can provide ongoing symptom assessment and management, patient and caregiver education, psychological support, self-care guidance, and coordination of care within the patient's home environment.

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Therefore, developing and evaluating integrated nurse-led home palliative care interventions is highly important for addressing the multidimensional needs of critically ill patients with colorectal cancer and supporting their overall well-being and quality of life.

The present study indicated that the studied patients were predominantly older adults, with the highest proportion aged 60–<70 years and a mean age of 59.8 ± 8.7 years. Males constituted more than half of the sample, while most participants were married and lived in rural areas. The predominance of older patients may reflect the increasing burden of colorectal cancer and the accumulation of comorbid and functional health problems with advancing age. The relatively high proportion of rural residents also underscores the importance of developing accessible community- and home-based palliative services for patients who may encounter geographical or healthcare-access barriers. This observation corresponds closely with the WHO, (2020) perspective, which emphasizes that palliative care should be accessible across levels of care and integrated into primary, community, and home-based services rather than being restricted to hospitals.

The current findings further demonstrated a considerable clinical burden among the studied patients. Nearly three-quarters had comorbidities, almost two-thirds had experienced hospitalization during the preceding six months, and 69.0% had cancer-related complications. Such findings suggest that critically ill patients with colorectal cancer require comprehensive care extending beyond tumor-related management to include symptom control, comorbidity management, functional support, psychological care, and caregiver involvement. A similar clinical perspective is reflected by George et al.,(2021) defines palliative care as an approach addressing physical, psychological, social, and spiritual suffering through coordinated multidisciplinary care. Moreover, contemporary evidence concerning nurse-led palliative needs assessment supports individualized assessment of complex patient needs, although the magnitude of benefit varies across studies.

The present study demonstrated a pronounced reduction in overall symptom burden following implementation of the integrated nurse-led home palliative care program. In parallel, the mean total symptom burden score declined

from 33.6 ± 5.8 at baseline to 15.1 ± 3.9 immediately after the intervention, with only a modest increase at follow-up. This pattern is supported by recent evidence by Singh et al., (2025) indicating that systematic nurse-led palliative needs assessment may improve symptom burden in some patient populations, although the available evidence is heterogeneous. The present findings may therefore reflect the contribution of repeated assessment and individualized symptom-management strategies incorporated into the intervention.

The significant reductions in pain, fatigue, gastrointestinal symptoms, sleep disturbance, and psychological symptoms may be attributed to the multidimensional structure of the intervention. Rather than addressing symptoms separately, the program incorporated individualized assessment, medication guidance, nutritional counseling, psychological support, self-care education, caregiver training, and structured home follow-up. This interpretation is strongly echoed by recent qualitative evidence by Anita et al., (2026) on home-based palliative nursing, which identified holistic symptom management, psychosocial and spiritual support, patient and family education, and coordination of care as major nursing roles.

The current study demonstrated a substantial improvement in anxiety levels following the intervention. These findings are in line with Han et al., (2025), the broader evidence supporting nurse-led interventions across the colorectal cancer care continuum, where nursing interventions have been associated with improvements in several patient-related outcomes. The improvement observed in the present study may be related to the combined provision of psychological support, continuous communication, symptom control, individualized education, and home-based follow-up, which may help patients manage uncertainty and adapt to their illness.

A comparable improvement was observed in depression levels. Before implementation of the program, 56.0% of the patients had abnormal depression scores, whereas this proportion decreased after the intervention. At the same time, the proportion with normal depression scores increased at follow-up. The present results parallel findings from the colorectal cancer nursing literature, by Habtamu et al., (2023) suggests that structured nurse-led interventions can positively influence patient-related and

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psychosocial outcomes throughout different stages of cancer care. The observed reduction in depressive symptoms may additionally be related to the integrated nature of the program, particularly the combination of emotional support, improved symptom control, caregiver involvement, patient education, and continuing nurse contact after discharge.

The present study revealed a marked enhancement in patients' self-care abilities. These results accord with **Batool et al., (2026)** the established role of nursing interventions in strengthening patients' participation in cancer care, particularly through education, self-management support, communication, and continuity of care. Evidence from colorectal cancer nursing interventions similarly indicates beneficial effects across patient-related outcomes.

The improvement in self-care may also be attributed to the educational and supportive components of the present program, particularly medication guidance, nutritional counseling, symptom-management education, and caregiver training. These components may have strengthened patients' and caregivers' ability to recognize warning symptoms, adhere to prescribed treatments, manage common problems, and seek assistance appropriately at home. This explanation is compatible with **Abu Jasser et al., (2026)** conceptualization of palliative care, which emphasizes support for patients and families and the management of needs extending beyond physical symptoms.

The present study demonstrated a substantial improvement in overall quality of life. The proportion of patients reporting good quality of life increased **These findings closely resemble the direction of evidence from randomized controlled trials**, by **Rupang et al., (2025)** as a recent systematic review and meta-analysis found that home-based palliative care was associated with a significant improvement in quality of life among patients with cancer.

The improvement extended across physical functioning, psychological well-being, social functioning, and symptom-related aspects of quality of life. This multidimensional pattern is supported by **Qtait et al., (2026)** a recent systematic review of nurse-led palliative care interventions, which reported positive trends in several quality-of-life domains, particularly symptom management, emotional well-being, communication, and family engagement. The authors also noted that multi-component and

sustained interventions showed more consistent benefits, particularly in community and home-based settings. Thus, the broad improvement observed in the current study may be related to the intervention's simultaneous attention to physical, psychological, educational, nutritional, and family-care needs.

An important finding of the present study was that most of the observed improvements were maintained during follow-up. Although modest changes occurred between the immediate post-intervention and follow-up assessments, symptom burden and psychological distress remained substantially lower, whereas self-care and quality of life remained considerably better than baseline. This sustained pattern is compatible with **Smith et al., (2022)** emphasis on continuity and accessibility of palliative care across different healthcare settings, including community and home-based services. It may also indicate that repeated home contact helped reinforce the knowledge and skills acquired during the intervention and supported continued symptom-management and self-care behaviors.

Conclusion

Based on the findings of the present study, the present study concluded that the integrated nurse-led home palliative care program was associated with significant overall improvement in the supportive outcomes of critically ill patients with colorectal cancer. The intervention was accompanied by reduced symptom burden and psychological distress, together with improved self-care and quality of life. These improvements were generally sustained during follow-up, indicating the potential value of continuity of nursing support in the home setting. The findings highlight the importance of incorporating structured home-based nursing palliative care within the comprehensive management of patients with advanced colorectal cancer.

Recommendations

Based on the findings of the present study, the following recommendations are proposed:

- Integrating structured nurse-led home palliative care into the oncology care pathway for eligible patients with advanced colorectal cancer.

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- Establishing individualized follow-up plans based on each patient's symptoms, functional needs, psychological status, and home-care requirements.
- Providing patients and family caregivers with clear, practical instructions to support safe care and early recognition of clinical deterioration.
- Implementing regular nursing reassessment during home follow-up to identify emerging needs and facilitate timely referral to the appropriate healthcare professional.
- Strengthening communication between hospital-based oncology services and community/home-care providers to ensure continuity and coordination of care.
- Developing standardized nursing protocols for home-based palliative care that define assessment, follow-up, documentation, referral, and communication procedures.
- Providing continuing education and training for oncology and community health nurses in home palliative care and symptom management.
- Conducting future controlled and longitudinal studies with larger samples to evaluate the long-term effectiveness, sustainability, and broader outcomes of nurse-led home palliative care.

References:

- Aaronson, N. K., Ahmedzai, S., Bergman, B., Bullinger, M., Cull, A., Duez, N. J., Filiberti, A., Flechtner, H., Fleishman, S. B., & de Haes, J. C. (1993). The European Organization for Research and Treatment of Cancer QLQ-C30: a quality-of-life instrument for use in international clinical trials in oncology. *Journal of the National Cancer Institute*, 85(5), 365–376. <https://doi.org/10.1093/jnci/85.5.365>
- Abu Jasser, N. F., Hayajneh, F. A., & Abdalrahim, M. S. (2026). The Effect of Educational Programs on Self-Care Behaviors Among Patients with Heart Failure: An Integrative Literature Review. *SAGE open nursing*, 12, 23779608251410981. <https://doi.org/10.1177/23779608251410981>
- Alqaisi, O., Al-Ghabeesh, S., Masalha, H., Thachuthara, A. J., Joseph, K., Tai, P., Yu, E., & Koul, R. (2026). Nursing Roles in Early Integration of Palliative and Supportive Care for Adults with Advanced Cancer: A Scoping Review. *Current oncology (Toronto, Ont.)*, 33(6), 312. <https://doi.org/10.3390/curroncol33060312>
- Alvarez Del Castillo Gonzalez, J., Bansal, S., Nassar, L., Plete, N. K., Bellen, S. J., Nelson, V., Carter, N., Hargreaves, H., Qiu, S., & Rasheed, S. (2025). Enhancing Self-Care Confidence Among Colorectal Cancer Patients: Insights From Postoperative Experiences. *Cureus*, 17(10), e95525. <https://doi.org/10.7759/cureus.95525>
- Anita, A., Septian, R. B., & Ghazali, L. (2026). Nurses' Roles and Challenges in Interprofessional Home-Based Palliative Care: A Systematic Review of Qualitative Studies. *The American journal of hospice & palliative care*, 43(10), 1126–1139. <https://doi.org/10.1177/10499091251371145>
- Batool, S., Suhonen, R., Gul, R., Yasmeen, S., & Stolt, M. (2026). Effectiveness of nurse-led interventions on self-care behaviors of patients living with cancer: A systematic review. *European journal of oncology nursing : the official journal of European Oncology Nursing Society*, 80, 103107. <https://doi.org/10.1016/j.ejon.2026.103107>
- Fayes, P. M., Aaronson, N. K., Bjordal, K., Groenvold, M., Curran, D., & Bottomley, A. (2001). The EORTC QLQ-C30 scoring manual (3rd ed.). European Organisation for Research and Treatment of Cancer.
- Flyum, I. R., Mahic, S., Grov, E. K., & Joranger, P. (2021). Health-related quality of life in patients with colorectal cancer in the palliative phase: a systematic review and meta-analysis. *BMC palliative care*, 20(1), 144. <https://doi.org/10.1186/s12904-021-00837-9>
- George, M., Smith, A., Sabesan, S., & Ranmuthugala, G. (2021). Physical Comorbidities and Their Relationship with Cancer Treatment and Its Outcomes in Older Adult Populations: Systematic Review. *JMIR cancer*, 7(4), e26425. <https://doi.org/10.2196/26425>
- Habtamu, K., Birhane, R., Demissie, M., & Fekadu, A. (2023). Interventions to improve the detection of depression in primary healthcare: systematic review. *Systematic reviews*, 12(1), 25. <https://doi.org/10.1186/s13643-023-02177-6>

Improving Quality of Life, Symptom Burden, Psychological Distress, and Self-Care in Critically Ill Colorectal Cancer Patients: The Effectiveness of an Integrated Nurse-Led Home Palliative Care Program

- Han, Y., Han, Y., Huang, W., Liu, Y., Wang, Z., Zhao, W., & Zhang, W. (2025). Effects of nurse-led interventions on enhancing patient-related outcomes in colorectal cancer management throughout the cancer care continuum: A systematic review and meta-analysis. *International journal of nursing studies*, 168, 105100. <https://doi.org/10.1016/j.ijnurstu.2025.105100>
- Henson, L., Maddocks, M., Evans, C. J., & Davidson, M. (2020). Palliative care and the management of common distressing symptoms in advanced cancer: Pain, breathlessness, nausea and vomiting, and fatigue. *Journal of Clinical Oncology*, 38(9), 894–904. DOI:10.1200/JCO.19.00470
- Huda, N., Shaw, M. K., & Chang, H. J. (2022). Psychological Distress Among Patients With Advanced Cancer: A Conceptual Analysis. *Cancer nursing*, 45(2), E487–E503. <https://doi.org/10.1097/NCC.0000000000000940>
- International Agency for Research on Cancer (IARC). (2024). *Colorectal cancer*. World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/colorectal-cancer>
- Lin, C. P., & Chu, W. M. (2025). Home-Based Palliative Care: Benefits, Challenges, Opportunities and Future Directions in a Super-Aged Society. *Journal of hospice and palliative care*, 28(3), 81–88. <https://doi.org/10.14475/jhpc.2025.28.3.81>
- Muhlare, M. L., & Downing, C. (2023). Self-care behaviours and practices of professional nurses working in primary health care clinics. *African journal of primary health care & family medicine*, 15(1), 4188. <https://doi.org/10.4102/phcfm.v15i1.4188>
- Qtait, M., Alqaissi, N., Jaradat, Y., AlAli, M. F., & Mesk, Z. (2026). Effectiveness of Nurse-Led Palliative Care Interventions on Patient Quality of Life: A Systematic Review. *SAGE open nursing*, 12, 23779608261447464. <https://doi.org/10.1177/23779608261447464>
- Rupang, E. R., Kurniawati, N. D., Tzeng, H. M., Tarihoran, D. E. T. A. U., Saragih, I. S., & Saragih, I. D. (2025). Effect of Home-Based Palliative Care on Quality of Life in Patients With Cancer: A Systematic Review and Meta-analysis of Randomized Controlled Trials. *Cancer nursing*, 10.1097/NCC.0000000000001512. Advance online publication. <https://doi.org/10.1097/NCC.0000000000001512>
- Sanders, J. J., Temin, S., Ghoshal, A., Alesi, E. R., Ali, Z. V., Chauhan, C., Cleary, J. F., Epstein, A. S., Firn, J. I., Jones, J. A., Litzow, M. R., Lundquist, D., Mardones, M. A., Nipp, R. D., Rabow, M. W., Rosa, W. E., Zimmermann, C., & Ferrell, B. R. (2024). Palliative Care for Patients With Cancer: ASCO Guideline Update. *Journal of clinical oncology : official journal of the American Society of Clinical Oncology*, 42(19), 2336–2357. <https://doi.org/10.1200/JCO.24.00542>
- Singh, G. K., Virdun, C., Rattray, M., Prichard, R., & Wynne, R. (2025). The effectiveness of nurse-led palliative care needs assessment on patients' quality of life and symptom burden: a systematic review. *International journal of nursing studies advances*, 8, 100343. <https://doi.org/10.1016/j.ijnsa.2025.100343>
- Smith, O. R. F., Sæther, S. M. M., Haug, E., & Knapstad, M. (2022). Long-term outcomes at 24- and 36-month follow-up in the intervention arm of the randomized controlled trial of Prompt Mental Health Care. *BMC psychiatry*, 22(1), 598. <https://doi.org/10.1186/s12888-022-04227-0>
- Watanabe, S. M., Nikolaichuk, C., Beaumont, C., Johnson, L., Myers, J., & Strasser, F. (2011). A multicenter study comparing two numerical versions of the Edmonton Symptom Assessment System in palliative care patients. *Journal of pain and symptom management*, 41(2), 456–468. <https://doi.org/10.1016/j.jpainsymman.2010.04.020>
- World Health Organization (WHO). (2020). *Palliative care*. Geneva: World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/palliative-care>
- Zhang, A., & Fu, H. (2022). The Impact of Palliative Care and Nursing Intervention on the Psychology and Quality of Life of Elderly Patients with Colorectal Cancer. *Journal of oncology*, 2022, 7777446. <https://doi.org/10.1155/2022/7777446>
- Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Acta psychiatrica Scandinavica*, 67(6), 365–371.

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Colorectal Cancer Patients: The Effectiveness of an Integrated Nurse-Led Home Palliative Care
Program

361–370. <https://doi.org/10.1111/j.1600-0447.1983.tb09716.x>