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RESEARCH ARTICLE (ORIGINAL)

Edmonton Scale Symptoms and Comfort in Adult Cancer Patients Receiving Palliative Care: A Cross-Sectional Study

Sintomas da Escala de Edmonton e Conforto em Doentes Adultos Oncológicos em Cuidados Paliativos: Estudo Transversal

Síntomas de la Escala de Edmonton y Confort en Pacientes Adultos Oncológicos en Cuidados Paliativos: Estudio Transversal

Ana Luísa Teixeira da Costa Durante [1]
https://orcid.org/0009-0002-9190-3178

Danielle Copello Vaz [1, 2]
https://orcid.org/0000-0002-2536-2492

Marcelo Daher [2]
https://orcid.org/0000-0002-9975-558X

Rene Brandão [2]
https://orcid.org/0000-0002-0749-0634

Romero de Melo Silva [2]
https://orcid.org/0000-0002-5743-2336

Beatriz Nicácio Bahia [2]
https://orcid.org/0009-0003-7727-2602

Carlos Roberto Lyra da Silva [2]
https://orcid.org/0000-0002-4327-6272

[1] National Cancer Institute, Rio de Janeiro, Brazil

[2] Federal University of Rio de Janeiro State, Rio de Janeiro, Brazil

Corresponding author
Carlos Roberto Lyra da Silva
E-mail: carlos.lyra@unirio.br

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Abstract
Background: Cancer patients receiving palliative care experience physical and psychological symptoms that compromise comfort.
Objective: To analyze the intensity of symptoms assessed by the Edmonton Symptom Assessment System and their relationship with general comfort in hospitalized cancer patients receiving palliative care.
Methodology: Cross-sectional, quantitative and analytical study conducted with 155 patients admitted to a federal oncology referral hospital in Rio de Janeiro, Brazil, between July 2024 and January 2025. The Edmonton Symptom Assessment System and the General Comfort Questionnaire were applied. Data were analyzed using descriptive statistics and Spearman's correlation.
Results: Significant inverse correlations were observed between symptom intensity and general comfort, especially for total symptom score (r = -0.614; p < 0.001), reduced well-being (r = -0.535; p < 0.001), depression (r = -0.504; p < 0.001), anxiety (r = -0.448; p < 0.001), fatigue (r = -0.409; p < 0.001), and pain (r = -0.374; p < 0.001). Dyspnea showed no significant correlation (p = 0.193).
Conclusion: Greater symptom intensity was associated with lower comfort, reinforcing the importance of systematic assessment and integrated nursing interventions.

Keywords: palliative care; neoplasms; oncology nursing; symptoms; patient comfort; quality of life

Resumo
Enquadramento: Doentes oncológicos em cuidados paliativos apresentam sintomas que comprometem o conforto.
Objetivo: Analisar a intensidade dos sintomas avaliados pela Escala de Avaliação de Sintomas de Edmonton e sua relação com o conforto de doentes oncológicos hospitalizados em cuidados paliativos.
Metodologia: Estudo transversal, quantitativo e analítico com 155 doentes internados em hospital oncológico do Rio de Janeiro, entre julho de 2024 e janeiro de 2025. Aplicaram-se a Escala de Avaliação de Sintomas de Edmonton e o Questionário de Conforto Geral. Utilizaram-se estatística descritiva e correlação de Spearman.
Resultados: Houve correlação inversa entre intensidade sintomática e conforto geral para o somatório dos sintomas (r = -0,614; p < 0,001), bem-estar reduzido (r = -0,535; p < 0,001), depressão (r = -0,504; p < 0,001), ansiedade (r = -0,448; p < 0,001), cansaço (r = -0,409; p < 0,001) e dor (r = -0,374; p < 0,001). A dispneia não apresentou correlação significativa (p = 0,193).
Conclusão: Maior intensidade sintomática associou-se a menor conforto, reforçando a avaliação e intervenções integradas de enfermagem.

Palavras-chave: cuidados paliativos; neoplasias; enfermagem oncológica; sintomas; conforto do paciente; qualidade de vida

Resumen
Marco contextual: Los pacientes oncológicos en cuidados paliativos presentan síntomas físicos y psicológicos que afectan su bienestar.
Objetivo: Analizar la intensidad de los síntomas evaluados mediante la Escala de Edmonton y su relación con el bienestar general de los pacientes oncológicos hospitalizados en cuidados paliativos.
Metodología: Estudio transversal, cuantitativo y analítico, realizado con 155 pacientes ingresados en un hospital federal de referencia en oncología de Río de Janeiro, entre julio de 2024 y enero de 2025. Se utilizaron la Escala de Edmonton y el Cuestionario de Bienestar General. Los datos se analizaron mediante estadística descriptiva y la correlación de Spearman.
Resultados: Se observó una correlación inversa significativa entre la intensidad de los síntomas y el bienestar general, sobre todo en lo que respecta a la suma de los síntomas (r = -0,614; p < 0,001), bienestar reducido (r = -0,535; p < 0,001), depresión (r = -0,504; p < 0,001), ansiedad (r = -0,448; p < 0,001), cansancio (r = -0,409; p < 0,001) y dolor (r = -0,374; p < 0,001). La disnea no mostró una correlación significativa (p = 0,193).
Conclusión: Una mayor intensidad de los síntomas se asoció con un menor bienestar, lo que refuerza la importancia de la evaluación sistemática y de las intervenciones integradas de enfermería.

Palabras clave: cuidados paliativos; neoplasias; enfermería oncológica; síntomas; comodidad del paciente; calidad de vida

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Introduction

Cancer patients in palliative care often face a significant symptom burden, including physical and psychological issues that directly impact comfort and overall well-being (World Health Organization, 2020). These symptoms tend to worsen with disease progression, leading to functional decline and multidimensional suffering, which diminish the care experience and quality of life (Sanders et al., 2024). In hospitals, the simultaneous presence of pain, fatigue, anxiety, depression, and other symptoms necessitates regular assessment and ongoing interventions, posing clinical, ethical, and organizational challenges for healthcare services (Sanders et al., 2024).

Comfort is a key concept in palliative care, seen as a dynamic experience involving physical, psychospiritual, sociocultural, and environmental aspects (Souza et al., 2021). In nursing, it serves as a care-sensitive outcome, indicating how effective nursing interventions are and how well healthcare teams address patients' complex needs (Souza et al., 2021). Research indicates that increased discomfort correlates with higher emotional distress, poorer adaptation to illness, and decreased satisfaction with care (Watson et al., 2024).

The Edmonton Symptom Assessment System (ESAS) is a validated tool commonly used worldwide to evaluate symptom severity in palliative care, valued for its practicality, clinical sensitivity, and versatility across various settings (Instituto Nacional de Câncer, 2022; Henson et al., 2020). Meanwhile, the Holistic Comfort Questionnaire (HCQ) offers a multidimensional approach to measuring comfort, capturing patients' subjective experiences beyond mere symptoms (Souza et al., 2021). However, despite their widespread adoption, most research tends to study symptoms and comfort separately, which hampers a comprehensive understanding of suffering in palliative care (Souza et al., 2021).

Research globally indicates that increased symptom burdens are associated with reduced comfort, especially when psychological symptoms are present (Pereira et al., 2020). However, in Brazil—particularly among hospitalized cancer patients—there is a notable lack of studies examining how symptom severity, as assessed by the ESAS, correlates with overall comfort measured by the HCQ (National Academy of Palliative Care, 2023; World Health Organization, 2020). This gap in data hinders the development of evidence-based care strategies and restricts effective planning of nursing interventions to improve patient comfort.

Considering comfort as a key outcome in palliative care and the importance of combining symptom assessment with patients' personal experiences, further research in hospital environments is crucial. Gaining deeper insights into these areas can enhance clinical practices, assist in making better therapeutic choices, and help improve palliative care within Brazil's Unified Health System (Sistema Único de Saúde) (Watson et al., 2024).

Given this context, this study aimed to evaluate the severity of symptoms using the ESAS and explore how they relate to holistic comfort in hospitalized cancer patients in palliative care.

Background

Hospitalized cancer patients in palliative care often face a heavy load of physical, emotional, and psychosocial symptoms caused by disease progression, treatment side effects, and declining function. This combination of symptoms affects their overall well-being and creates considerable challenges for healthcare teams, especially in hospital environments where clinical complexity is increased by environmental and organizational limitations on care (World Health Organization, 2020; Sanders et al., 2024).

In these patients, suffering manifests not just through single symptoms but through the complex interplay of pain, fatigue, anxiety, depression, appetite issues, sleep problems, and reduced well-being. Evidence indicates that this symptom overlap heightens the sense of discomfort and worsens multidimensional suffering, highlighting the need for systematic assessment and ongoing, evidence-based interventions that address patients' personal experiences (World Health Organization, 2020; Sanders et al., 2024).

In this context, comfort is a key priority in palliative care. Seen as a multidimensional concept, it includes physical, psychospiritual, sociocultural, and environmental aspects, all influenced by how symptoms are identified, managed, and understood by the patient. In nursing, comfort serves as a sensitive measure of care quality, indicating both the success of nursing actions and the level of communication with the patient (Souza et al., 2021).

The ESAS is a widely used tool for structured symptom severity assessment. It is recommended by palliative care guidelines because of its practicality, reliability, and sensitivity in clinical settings. Simultaneously, the HCQ assesses holistic comfort, helping researchers and clinicians gauge how symptoms affect patients beyond just their numerical severity by including subjective aspects of living with advanced illness (Souza et al., 2021; Henson et al., 2020).

Although these instruments are commonly used, the literature shows that symptoms and comfort are often examined separately, which hampers a comprehensive understanding of patients' suffering. International research consistently finds a link between higher symptom burden and reduced comfort, especially when psychological symptoms are involved. However, in Brazil, studies that explore this relationship in an integrated way are limited, particularly among hospitalized cancer patients (Sanders et al., 2024; Souza et al., 2021; Instituto Nacional de Câncer, 2022).

Given this context, it is crucial to further explore how symptom severity relates to holistic comfort in hospitalized palliative care patients. Combining these assessments can enhance clinical practice, inform the development of person-centered nursing strategies, and help establish comfort as a core element of palliative care, aligning with both national and international guidelines (World Health Organization, 2020; Souza et al., 2021; Instituto Nacional de Câncer, 2022).

Research question

What is the relationship between symptom severity, as assessed by the ESAS, and holistic comfort, as measured by the HCQ, among hospitalized cancer patients in palliative care?

Methods

Study design and setting

This study was a quantitative, cross-sectional, analytical research involving hospitalized cancer patients in palliative care (World Health Organization, 2020). It employed a cross-sectional design to examine the relationship between symptom severity and holistic comfort at a specific point in time, aligning with recommendations for clinical palliative care research (Sanders et al., 2024). The research took place at a federal referral cancer hospital in Rio de Janeiro, Brazil, serving only patients from the Brazilian Unified Health System (Sistema Único de Saúde) and featuring specialized inpatient units for palliative care.

Study population and sample

The study included adult patients hospitalized with advanced cancer who were under the care of the institution's palliative care team. A total of 155 patients were selected via convenience sampling, considering the data collection period and each patient's clinical eligibility. Inclusion criteria required a diagnosis of advanced cancer, age at least 18 years, ability to communicate verbally, and a Karnofsky Performance Status score of 30% or higher, indicating sufficient functional capacity for subjective assessments (Sanders et al., 2024). Patients were excluded if they had a markedly reduced level of consciousness, severe cognitive impairments, or clinical conditions that prevented participation in interviews. Eligibility was determined prior to data collection through reviewing medical records and consulting with the healthcare team (physicians and nurses), assessing each patient's clinical, cognitive, and functional status at recruitment.

The sample size was determined using a formula suitable for cross-sectional studies with finite populations, with a 90% confidence level and a 5% margin of error. Due to the population's homogeneity, an 80/20 proportion was assumed. The calculation considered the total hospital admissions to the unit in 2023 (n = 1,351) and an average bed occupancy rate of 71%. Under these conditions, the minimum sample size required was estimated at 154 patients.

Recruitment and data collection

Participants were consecutively recruited by daily identifying eligible patients admitted to the palliative care inpatient units. Data collection occurred from July 2024 to January 2025, conducted by trained nurse researchers not involved in direct patient care. These researchers received prior training on eligibility criteria, recruitment procedures, and standardized use of study instruments to ensure evaluator consistency. Interviews took place at the bedside in a private, comfortable setting and were supplemented with a review of electronic medical records to gather clinical and sociodemographic information. All instruments were administered following their original protocols, with care taken to respect each participant's clinical condition and tolerance for the interview process (Souza et al., 2021).

Data collection tool

Symptom severity was evaluated with ESAS, a tool commonly used in palliative care, validated in Brazil (Paiva et al., 2015), and endorsed by international guidelines (Souza et al., 2021; Watson et al., 2024). ESAS measures nine physical and psychological symptoms on an 11-point scale from 0 to 10, showing good construct validity, reliability, and sensitivity for tracking symptom changes during care (Instituto Nacional de Câncer, 2022).

Holistic comfort was assessed with HCQ, a 48-item tool covering physical, environmental, sociocultural, and psychospiritual aspects, following the authors' guidelines and using the version validated for Brazil (Paiva et al., 2015).

Data analysis

The data were entered into an electronic database and analyzed with Stata Data Analysis and Statistical Software (Stata/IC®, version 16.0). All questionnaires were reviewed promptly after administration to reduce information loss. No significant missing data were present that could affect the statistical analyses.

Descriptive analyses were conducted to characterize the study sample, symptom severity, and comfort scores across all and specific domains. The link between symptom severity, measured with ESAS, and holistic comfort, evaluated with HCQ, was analyzed using Spearman's rank correlation coefficient. This approach was chosen due to the ordinal nature of the data and the lack of a normal distribution (Souza et al., 2021). A two-sided significance threshold of 5% ($p < 0.05$) was used, aligning with standard practices in clinical and health science research.

Bias control

To minimize selection bias, eligible patients were recruited consecutively throughout the data collection period. Information bias was reduced by having trained researchers standardize the administration of study tools in a private setting, while respecting participants' clinical conditions.

Ethical considerations

The study adhered to the ethical principles set by Brazilian National Health Council Resolution No. 466/12 and received approval from the Research Ethics Committee of the Brazilian National Cancer Institute (INCA), with Approval No. 6,920,896 (CAAE: 78902824.8.3001.5274).

Results

A total of 155 cancer patients in palliative care at the referral hospital were assessed. The sample was mainly female, with an average age of 58 years, and exhibited high levels of functional impairment and the use of health

devices, as shown in Table 1. Symptom severity, evaluated with ESAS, varied across domains, with most scores indicating moderate to high levels for tiredness, reduced well-being, anxiety, and depression, detailed in Table 2. Shortness of breath and nausea were less severe but still affected a significant portion of patients.

Table 1

Sociodemographic and Clinical Characteristics of Hospitalized Cancer Patients in Palliative Care

Variable	***n* (%)**
Sex	
Female	106 (68.39)
Male	49 (31.61)
Age	
Mean ± SD	58.0 ± 13.4 years
Cancer diagnosis	
Abdominal cancer	45 (29.03)
Gynecological cancer	36 (23.23)
Breast cancer	23 (14.84)
Other	51 (32.90)
Karnofsky Performance Status (KPS)	
KPS = 30%	93 (60.00)
KPS 40–60%	62 (40.00)
Clinical conditions	
Presence of stomas	37 (23.87)
Catheters and/or drains	62 (40.00)
Venous and/or subcutaneous access	149 (96.13)
Malignant wounds	29 (18.60)
Pressure injury	40 (25.81)

Note. KPS = Karnofsky Performance Status.

Table 2

Characterization according to ESAS

Symptoms	***Mean (± SD)**	**†Median (IQR)**	**‡Minimum/Maximum**
Pain	3.60 (3.55)	3 (10)	0/10
Fatigue	4.10 (3.28)	4 (10)	0/10
Nausea	2.48 (3.22)	0 (10)	0/10
Depression	4.63 (3.68)	5 (10)	0/10
Anxiety	5.51 (3.56)	7 (10)	0/10
Drowsiness	4.08 (3.53)	4 (10)	0/10
Loss of appetite	5.52 (3.42)	6 (10)	0/10
Dyspnea	1.35 (2.48)	0 (8)	0/9
Well-being	6.40 (3.18)	7 (10)	0/10
Total score	37.68 (17.30)	38 (67)	1/76

Note. ESAS = Edmonton Symptom Assessment System; *SD* = Standard deviation; *IQR* = Interquartile range. Higher values indicate greater symptom severity on the ESAS.
*Mean and standard deviation. † Median and interquartile range. ‡ Minimum and maximum values, with the scale ranging from 0 to 10, where higher scores indicate greater symptom severity.

Regarding holistic comfort measured by the HCQ, the mean score was 125.58 (± 18.52), showing considerable variation among participants, with scores spanning from 64 to 174. Domain-specific analysis indicated that the physical domain scored the lowest, followed by the sociocultural domain, while the environmental and psychospiritual domains had the highest mean scores, as shown in Table 3.

Table 3

Characterization of comfort according to HCQ

Domains	*Mean (± SD)	†Median	§P25	§P75	‖Minimum/ Maximum
Physical	20.50 (6.24)	20	10	34	10/ 36
Environmental	32.13 (5.30)	32	22	42	15/ 43
Sociocultural	22.10 (4.60)	21	15	33	9/ 36
Psychospiritual	50.84 (8.0)	51	30	67	25/ 69
Holistic Comfort	125.58 (18.52)	126	89	167	64/ 174

Note. HCQ = Holistic Comfort Questionnaire.
* Mean and standard deviation. † Median. ‡ Percentile 25 (P25). § Percentile 75 (P75). ‖ Minimum and maximum levels.

The correlation analysis between ESAS symptom scores and the total HCQ score demonstrated a statistically significant negative association for most of the symptoms evaluated, as shown in Table 4. Tiredness, reduced well-being, anxiety, and depression exhibited the strongest negative correlations, indicating that greater symptom severity was associated with lower levels of holistic comfort. Shortness of breath was the only symptom that did not show a statistically significant correlation with holistic comfort.

Table 4

Correlation between ESAS symptoms and the HCQ

ESAS	*r*	95%CI	*p*
Pain	-0.374	-0.502 to -0.230	< 0.001
Tiredness	-0.409	-0.532 to -0.269	< 0.001
Nausea	-0.247	-0.390 to -0.091	0.002
Depression	-0.504	-0.613 to -0.376	< 0.001
Anxiety	-0.448	-0.566 to -0.312	< 0.001
Drowsiness	-0.172	-0.321 to -0.015	0.031
Lack of appetite	-0.327	-0.462 to -0.178	< 0.001
Shortness of breath	-0.105	-0.258 to 0.054	0.193
Well-being	-0.535	-0.639 to -0.413	< 0.001
Total score	-0.614	-0.704 to -0.505	< 0.001

Note. ESAS = Edmonton Symptom Assessment System; HCQ = Holistic Comfort Questionnaire; *r* = Spearman's correlation coefficient; 95%CI = 95% confidence interval; p = Statistical significance value.

A strong inverse correlation was identified between symptom severity, assessed by the ESAS, and holistic comfort, particularly for the total ESAS score ($r = -0.614$; 95% CI: −0.704 to −0.505; $p < 0.001$). Significant negative relationships were also observed for well-being ($r = -0.001$), depression ($r = -0.001$), anxiety ($r = -0.001$), tiredness ($r = -0.001$), and pain ($r = -0.374$), all with $p < 0.001$. These findings reveal consistent patterns indicating that higher symptom severity is associated with lower comfort levels, providing an empirical basis for further research into factors affecting comfort among cancer patients in palliative care.

Discussion

In palliative care, comfort is more than just the absence of symptoms; it is a subjective and evolving experience shaped by physical, emotional, social, environmental, and spiritual factors, heavily influenced by how suffering is perceived and addressed (Watson et al., 2024). Recognizing this broad view shifts the focus from isolated interventions to comprehensive, person-centered care that emphasizes patients' lived experiences.

From an epistemological perspective, using standardized

tools like the ESAS for symptom assessment aims to quantify a fundamentally subjective experience while preserving its complexity. Literature shows that systematic symptom evaluation not only aids clinical decision-making but also bridges technical expertise and compassionate listening, helping healthcare providers notice suffering patterns often missed in routine care (Souza et al., 2021; Instituto Nacional de Câncer, 2022). When combined with comfort assessment, this method expands the care framework by including aspects that go beyond just managing physical disease.

Within this framework, the HCQ offers an empirical method to operationalize Kolcaba's multidimensional concept of comfort, while the ESAS measures the severity of symptoms reported by patients. Combining these tools enables researchers to explore the relationship between symptom burden and comfort. This approach supports empirical examination of these constructs without reducing the complexity of suffering in palliative care. Therefore, the results should be viewed as approximations of the subjective aspects of comfort and symptom burden, rather than comprehensive accounts of patients' experiences, which are dynamic, personalized, and shaped by physical, psychospiritual, sociocultural, and environmental influences.

Understanding suffering as a multidimensional phenomenon is backed by research showing the interconnectedness of physical and psychological symptoms. Evidence indicates that emotional states like anxiety and depression not only occur alongside physical symptoms but also affect how severe these symptoms are perceived and their overall impact on well-being (Souza et al., 2021). This relationship challenges simplistic, reductionist models and emphasizes the importance of holistic care approaches that recognize discomfort as a complex, non-linear experience across various aspects of human health.

In this context, the psychospiritual realm holds significant theoretical and clinical weight. Recent research shows that feelings of meaning, hope, transcendence, and connectedness directly impact how people manage advanced illness, influencing their views on suffering and comfort (Sanders et al., 2024). Ignoring this aspect can weaken palliative care effectiveness, even if physical symptoms are well managed. Thus, psychospiritual care should be considered a core part of comprehensive palliative treatment, not just an optional addition.

In Brazil, an important theoretical and empirical gap remains regarding the integration of symptom assessment with multidimensional measures of comfort. National research has predominantly focused on either symptom severity or the experience of comfort in isolation, without systematically exploring the interface between these constructs (Souza et al., 2021). By proposing this integrated approach, the present study contributes to advancing the current state of knowledge by providing a more comprehensive understanding of suffering among hospitalized patients with cancer.

These findings align with international recommendations that endorse comprehensive palliative care approaches, combining medication, psychosocial support, environmental adjustments, and spiritual care (World Health Organization, 2020; National Academy of Palliative Care, 2023). They emphasize the vital role of nursing in early detection of symptom burden and initiating ongoing, comfort-centered interventions, especially given the link between physical and emotional symptoms and reduced overall comfort (Souza et al., 2021). Utilizing tools like the ESAS and the HCQ can aid in care planning, support clinical decisions, and raise healthcare professionals' awareness of needs that are often overlooked in hospital settings (Henson et al., 2020; Souza et al., 2021).

Research shows that environmental factors like privacy, quietness, thermal comfort, and quality of social interactions directly affect patients' comfort perceptions and can either ease or worsen suffering, regardless of disease stage (Sanders et al., 2024; Souza et al., 2021). These insights support viewing palliative care as a relational, interdisciplinary, and context-sensitive practice rather than just technical procedures. For nurses, this means improving communication, active listening, symptom management, and addressing patients' psychospiritual and sociocultural needs—striving for more humane, personalized care that aligns with modern palliative care principles (Souza et al., 2021; Watson et al., 2024).

This theoretical view within nursing highlights the nurse's role in delivering holistic care. Nurses uniquely integrate ongoing clinical assessments, therapeutic communication, and interventions that target the subjective aspects of suffering (Souza et al., 2021). Using tools like the ESAS and HCQ systematically supports evidence-based practice and enhances clinical reasoning focused on achieving comfort as a key care goal.

This study enhances understanding of comfort as a phenomenon directly affected by symptom burden, offering both theoretical and empirical evidence to support the development of more integrated care protocols. By incorporating various theoretical perspectives from palliative care and nursing, it broadens the conceptual foundation for interventions that view suffering as a complex, highly personalized experience.

Several limitations should be considered when interpreting these findings. The study relied on a convenience sample from a single hospital, which may limit the generalizability of the results to other healthcare contexts. As a cross-sectional study, it cannot establish causality between symptom severity and holistic comfort. Additionally, the absence of multivariable analyses to control for confounding factors such as functional status, cancer type, metastases, and length of hospital stay is a limitation, as these variables could affect both symptoms and perceptions of comfort. Nonetheless, the study employed validated tools and standardized data collection, which enhance understanding of the relationship between symptoms and comfort among hospitalized cancer patients in palliative care—a relatively under-researched area in Brazil. Although the findings are not universally generalizable, they provide valuable evidence to improve hospital palliative care and inform future multicenter studies with more rigorous designs.

Conclusion

This study showed that higher symptom severity, assessed by the ESAS, was linked to lower holistic comfort, measured by the HCQ, among hospitalized cancer patients in palliative care. The combined analysis of these tools revealed that increased symptom burden correlates with decreased comfort, highlighting the connection between physical and emotional symptoms and overall well-being. The findings suggest that comfort, as a multidimensional concept, varies with symptom severity and should be a key focus of palliative care planning. Systematic use of the ESAS and HCQ was effective in identifying patterns of suffering and informing clinical decisions to enhance comfort in hospitals.

This study improves understanding of the connection between symptom burden and patient comfort in advanced cancer, highlighting the significance of structured assessments and patient-centered nursing care. The findings underscore the need for integrated approaches that focus on both managing symptoms and enhancing comfort during palliative care stays.

Author contributions

Conceptualization: Durante, A. L.
Data curation: Durante, A. L., Silva, C. R.
Formal analysis: Durante, A. L., Silva, C. R.
Investigation: Durante, A. L., Silva, C. R.
Methodology: Durante, A. L., Silva, C. R.
Project administration: Durante, A. L.
Resources: Durante, A. L.
Software: Durante, A. L., Vaz, D. C., Brandão, R., Silva, R. M.
Supervision: Silva, C. R.
Validation: Durante, A. L., Brandão, R., Silva, C. R.
Visualization: Vaz, D. C., Daher, M., Brandão, R., Silva, R. M., Bahia, B. N., Silva, C. R.
Writing – original draft: Durante, A. L., Bahia, B. N., Silva, C. R.
Writing – review and editing: Silva, C. R.

Thesis/Dissertation

This article is based on the doctoral dissertation titled "Assessment of Comfort in Palliative Care: Perspectives in Light of Kolcaba's Theory," which was submitted to the Federal University of the State of Rio de Janeiro in 2025.

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