

Original Research Article

Assessment of knowledge, attitude and practice regarding nutritional care and sarcopenia in oncology: a cross-sectional pilot survey

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ABSTRACT

Background: Malnutrition and sarcopenia are highly prevalent in cancer patients and are associated with poor clinical outcomes. Despite increasing awareness, their assessment and management remain inconsistent in routine oncology practice. To assess the knowledge, attitude and practice (KAP) of healthcare professionals regarding nutritional care and sarcopenia in oncology settings.

Methods: A cross-sectional survey was conducted among 18 clinicians using a structured questionnaire covering knowledge, attitude and practice domains. Responses were analyzed using descriptive statistics and domain-wise scores were calculated.

Results: The findings demonstrated moderate knowledge levels, with variability in understanding of sarcopenia definitions, diagnostic tools and biomarkers. Attitude toward nutrition was highly positive, with most participants acknowledging the importance of early nutritional intervention and routine screening. However, clinical practice lagged behind, with low adoption of structured screening tools such as SARC-F and handgrip strength, limited routine nutritional assessment and inconsistent tracking of body composition.

Conclusions: Despite favorable attitudes, a significant gap exists between knowledge and implementation of nutritional care in oncology. Targeted education and integration of structured screening tools are essential to improve clinical outcomes.

Keywords: Cancer nutrition, KAP study, Malnutrition, Oncology, Screening tools, Sarcopenia

INTRODUCTION

Malnutrition and sarcopenia are increasingly recognized as critical determinants of clinical outcomes in patients with cancer. The prevalence of malnutrition in oncology ranges from 30% to 80%, depending on tumor type, disease stage and treatment modality.^{1,2} Sarcopenia, defined as a progressive and generalized loss of skeletal muscle mass and strength, has emerged as a key component of cancer-related malnutrition and is associated with increased

treatment toxicity, reduced functional status and poorer survival outcomes.³⁻⁵

Globally, sarcopenia affects approximately 10–40% of older adults and represents a major public health concern due to its association with increased healthcare utilization and costs. It is now widely regarded as a geriatric syndrome characterized not only by loss of muscle mass but also by impaired muscle function, including decreased strength and physical performance. Age-related declines in

grip strength and gait speed, particularly after the age of 50 years, further contribute to functional impairment and increased vulnerability in this population. In clinical practice, muscle wasting is highly prevalent and is strongly associated with adverse outcomes such as increased risk of falls and fractures, cardiovascular morbidity, cognitive decline, prolonged hospitalization, loss of independence and higher mortality rates, ultimately resulting in a diminished quality of life.⁶

Cancer cachexia, a related but distinct multifactorial syndrome, is characterized by ongoing skeletal muscle loss with or without depletion of adipose tissue and is frequently accompanied by systemic inflammation, anorexia, asthenia and anemia.

The pathophysiology of cachexia involves a complex interplay of reduced nutritional intake, increased protein catabolism, systemic inflammatory response and elevated resting energy expenditure. While sarcopenia and cachexia share overlapping mechanisms, cachexia is distinguished by a pronounced hypercatabolic state and a negative protein–energy balance that is often resistant to conventional nutritional interventions. Importantly, sarcopenia has been identified as an independent prognostic factor in oncology, with evidence demonstrating increased postoperative complications, prolonged hospital stays and poorer treatment tolerance among affected patients.⁷

Despite the well-established clinical implications of malnutrition and sarcopenia, their routine assessment and management remain inconsistent in oncology practice. International guidelines, including those from the European Society for Clinical Nutrition and Metabolism (ESPEN) and the Asian Working Group for Sarcopenia (AWGS), recommend early screening using simple, feasible tools such as the SARC-F questionnaire and handgrip strength measurement. However, these tools are often underutilized due to barriers such as limited awareness, time constraints, lack of standardized protocols and insufficient integration of nutrition into routine oncology workflows.

In this context, evaluating the KAP of healthcare professionals becomes essential to identify gaps between evidence and clinical implementation. The KAP framework is widely used in health research to assess the level of understanding, perceptions and behaviors related to specific clinical domains. It is based on the premise that knowledge influences attitudes, which in turn shape practices and decision-making in clinical settings.⁸

Understanding these domains can inform targeted interventions, including education, protocol development and multidisciplinary collaboration, to improve the integration of nutritional care into oncology practice. Therefore, the present study aimed to assess the knowledge, attitudes and practices of clinicians regarding nutritional care and sarcopenia in oncology settings, with

the objective of identifying existing gaps and opportunities for improving patient care.

METHODS

A multicentre, cross-sectional survey was conducted between March 2025 and June 2025 to assess the KAP related to nutritional care and sarcopenia among oncologists and other healthcare professionals. Participants were recruited from multiple hospitals and clinical settings. A structured, self-administered questionnaire comprising both multiple-choice and open-ended questions was used to collect quantitative and qualitative data.

The questionnaire was developed specifically for this study following an extensive review of the published literature and current recommendations on nutritional care and sarcopenia. The draft questionnaire underwent expert review by specialists in clinical nutrition and related disciplines to evaluate its relevance, clarity and content prior to administration. As this was an exploratory pilot study, no formal validation was performed.

The questionnaire assessed participants' knowledge of key nutrition concepts, attitudes towards nutrition counselling, confidence in providing nutritional advice and current clinical practices. Individual responses were assigned predefined scores and domain-wise KAP scores were calculated using descriptive statistics. Quantitative and qualitative data were analyzed to identify trends, assess gaps in knowledge and practice and explore barriers to the provision of effective nutrition counselling.

Participants were eligible for inclusion if they were healthcare professionals involved in the clinical management of adult patients, including oncologists, intensivists, nephrologists, diabetologists, clinical dietitians and physicians from related specialties, who were actively practicing in a hospital or clinical setting, willing to participate and completed the survey questionnaire. Healthcare professionals not directly involved in patient care, including undergraduate students, interns and non-clinical staff, as well as participants who submitted incomplete or duplicate questionnaires, were excluded from the study.

RESULTS

A total of 18 healthcare professionals participated in the study, representing varying levels of experience and clinical expertise in oncology care. The majority of respondents perceived nutrition as a critical component of disease prevention and management, with 38.9% rating it as “extremely important” and 27.8% as “very important,” indicating a high level of perceived clinical relevance. In practice, nutritional counselling was most frequently provided to cancer patients (55.6%), while a smaller proportion extended advice to all patient groups (16.7%). Common challenges in ensuring adequate protein intake

included lack of awareness (27.8%) and a combination of factors such as poor appetite, dietary restrictions, economic limitations and limited availability of protein sources (38.9%). The knowledge assessment demonstrated an overall moderate-to-high level of understanding across fundamental concepts. A large proportion of participants correctly identified sarcopenia as a condition characterized by loss of muscle mass and strength (88.9%) and recognized chronic inflammation and reduced physical activity as key contributing factors in cancer patients (88.9%).

Awareness regarding the multifactorial etiology of cancer-related malnutrition (77.8%) and the definition of cachexia (83.3%) was also satisfactory. Notably, all participants correctly identified the mini nutritional assessment as a standard screening tool, as well as the role of vitamin D, relevant biomarkers and gold-standard imaging modalities such as CT or MRI (100% each). Similarly, awareness of sarcopenia screening tools, clinical signs of malnutrition and laboratory markers such as hypoalbuminemia remained high (88.9%). First-line nutritional interventions, including oral nutritional supplementation and dietary counselling, were correctly identified by the majority (88.9%).

Despite these strengths, the findings suggest variability in advanced clinical knowledge, particularly in the integration of diagnostic criteria, biomarker interpretation and application of imaging techniques in routine nutritional assessment. This indicates the need for targeted educational interventions focusing on advanced aspects of sarcopenia evaluation. Participants demonstrated a consistently positive attitude toward nutritional care in oncology. The majority strongly endorsed the role of early nutritional intervention in improving clinical outcomes (72.2%) and recognized the importance of monitoring muscle mass alongside body weight (88.9%). Furthermore, 77.8% strongly agreed that nutrition should be an integral component of cancer management and over half (55.6%) supported mandatory sarcopenia screening in

high-risk patients. However, only 55.6% of participants reported feeling adequately informed about current clinical guidelines, highlighting a gap between favorable attitudes and guideline awareness. Additionally, a significant proportion (72.2%) acknowledged that undernutrition in cancer patients is often overlooked in routine clinical practice. These findings suggest that while awareness and perceptions are positive, there remains a need to strengthen guideline dissemination and clinical training.

In contrast to knowledge and attitudes, the implementation of nutritional care in clinical practice was comparatively suboptimal. Although 61.1% of participants reported routinely screening patients for malnutrition at diagnosis, the use of validated sarcopenia screening tools such as SARC-F or handgrip strength assessment was reported by only 55.6%. Similarly, body composition monitoring was performed by 61.1% of participants, with limited use of objective tools such as bioelectrical impedance analysis.

Encouragingly, collaboration with clinical dietitians was relatively high (88.9%) and a majority (77.8%) had initiated oral nutritional supplementation in their patients. Dietary intake assessment was conducted by 66.7% of respondents, while nutritional reassessment was most commonly performed on a monthly basis (38.9%). The most frequently reported barriers to implementing nutritional interventions included cost (44.4%) and patient compliance (38.9%), underscoring systemic and patient-related challenges in clinical practice. Participants also identified continued medical education (CMEs) as a key requirement for improving sarcopenia management.

Overall, the findings highlight a clear discrepancy between knowledge, attitudes and practice. While clinicians demonstrated adequate knowledge and a positive attitude toward nutritional care, the translation of these into routine clinical practice remains limited. This knowledge practice gap may be attributed to factors such as limited awareness of guidelines, lack of structured protocols and practical constraints including cost and patient adherence.

Table 1: Knowledge component responses.

Knowledge variables	Correct response N (%)
Sarcopenia definition	16 (88.9)
Cause of sarcopenia in cancer	16 (88.9)
Malnutrition causes in cancer	14 (77.8)
Cachexia definition	15 (83.3)
Nutritional assessment tool	18 (100)
SARC-F awareness	16 (88.9)
Clinical signs of malnutrition	16 (88.9)
Laboratory marker (albumin)	16 (88.9)
Role of Vitamin D	18 (100)
Biomarkers of sarcopenia	18 (100)
Imaging modality (CT/MRI)	18 (100)
First-line nutrition intervention	16 (88.9)

Table 2: Attitude component responses.

Attitude variables	Strongly agree N (%)
Early nutrition improves outcomes	13 (72.2)
Muscle mass monitoring is important	16 (88.9)
Nutrition integral to cancer care	14 (77.8)
Sarcopenia screening should be mandatory	10 (55.6)
Well-informed about guidelines	10 (55.6)
Undernutrition is overlooked	13 (72.2)

Table 3: Practice component response.

Practice variables	Yes N (%)
Routine nutritional screening	11 (61.1)
Use of SARC-F / handgrip	10 (55.6)
Dietitian collaboration	16 (88.9)
Oral nutritional supplementation	14 (77.8)
Dietary intake assessment	12 (66.7)
Body composition tracking	11 (61.1)

DISCUSSION

This study highlights a significant gap between knowledge, attitudes and the implementation of nutritional care in oncology practice. Although participants demonstrated moderate knowledge and favorable attitudes, these did not translate into consistent clinical application, reflecting a persistent knowledge implementation gap. Despite strong evidence linking malnutrition and sarcopenia with adverse clinical outcomes, routine nutritional screening remains suboptimal.^{9,10} Recommendations from the European Society for Clinical Nutrition and Metabolism and the Asian Working Group for Sarcopenia advocate the use of simple, validated tools; however, their limited uptake suggests that barriers extend beyond tool availability to include time constraints, inadequate training and lack of standardized protocols.^{11,12}

Variability in advanced knowledge particularly regarding sarcopenia diagnostics, biomarkers and imaging may further contribute to under recognition. Given the multifactorial nature of cancer-related sarcopenia, such gaps can delay timely identification and intervention. These findings underscore the need to move beyond knowledge dissemination toward structured implementation strategies. Integration of nutritional screening into routine workflows, strengthened multidisciplinary collaboration (including dietitians) and adoption of pragmatic, scalable tools are essential to improve clinical uptake. Overall, bridging this gap will require system-level interventions and implementation-focused approaches to translate evidence-based nutritional care into routine oncology practice.

The present study has several limitations. First, the relatively small sample size limits the generalizability of

the findings to a broader population of healthcare professionals.

Second, the use of self-reported responses may have introduced response and reporting bias. In addition, the questionnaire was developed specifically for this pilot study and was not a previously validated instrument. Although it was designed based on an extensive literature review and underwent expert review for content relevance and clarity, formal psychometric validation was not performed.

Finally, the absence of inferential statistical analyses limits the ability to establish significant associations or draw causal inferences from the findings. Larger studies using validated assessment tools are warranted to confirm and extend these preliminary observations.

CONCLUSION

This study highlights a significant gap between awareness and implementation of nutritional care and sarcopenia assessment in oncology practice. Despite adequate knowledge and positive attitudes, the routine use of validated screening tools and structured nutritional assessment remains limited. Given the established impact of malnutrition and sarcopenia on clinical outcomes, these findings underscore the need for targeted education, improved guideline implementation and integration of standardized screening into routine workflows. Strengthening multidisciplinary collaboration, particularly with clinical dietitians, is essential. The adoption of pragmatic, scalable screening approaches may enhance clinical uptake and enable early identification and intervention. Further large-scale studies are warranted to validate these findings and support implementation-focused strategies in oncology care.

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REFERENCES

1. Arends J, Bachmann P, Baracos V. ESPEN guidelines on nutrition in cancer patients. Clin Nutr. 2017;36(1):11–48.
2. Hébuterne X, Lemarié E, Michallet M. Prevalence of malnutrition and current use of nutrition support in patients with cancer. JPEN J Parenter Enteral Nutr. 2014;38(2):196–204.
3. Cruz-Jentoft AJ, Bahat G, Bauer J. Sarcopenia: revised European consensus on definition and diagnosis. Age Ageing. 2019;48(1):16–31.
4. Prado CM, Purcell SA, Laviano A. Nutrition interventions to treat low muscle mass in cancer. J Cachexia Sarcopenia Muscle. 2020;11(2):366–80.
5. Shachar SS, Williams GR, Muss HB, Nishijima TF. Prognostic value of sarcopenia in adults with solid tumours: a meta-analysis. Eur J Cancer. 2016;57:58–67.
6. Liang B, Wang B, Liang J, Sun X. Knowledge, attitude and practice of healthcare professionals toward sarcopenia. Sci Rep. 2025;15(1):19826.
7. Anjanappa M, Corden M, Green A. Sarcopenia in cancer: Risking more than muscle loss. Tech Innov Patient Supp Rad Oncol. 2020;16:50-7.
8. Xiaoxu Zhi, Jie Chen, Liu Yang, Sheng Li, Liuliu Zhang, Yun Zhao, et al. Knowledge, attitudes and practices toward nutritional management among patients with gastrointestinal cancer: A cross-sectional study. Asia-Pacific J Oncol Nurs. 2025;12:2347-625.
9. Singer P, Reintam Blaser A, Berger MM, Alhazzani W, Calder PC, Casaer MP, et al. ESPEN guideline on clinical nutrition in the intensive care unit. Clin Nutrition. 2019;38(1):48–79.
10. Cederholm T, Jensen GL, Correia MITD. GLIM criteria for the diagnosis of malnutrition. Clin Nutr. 2019;38(1):1–9.
11. Muscaritoli M, Arends J, Bachmann P. ESPEN practical guideline: Clinical nutrition in cancer. Clin Nutr. 2021;40(5):2898–913.
12. Chen LK, Woo J, Assantachai P. Asian Working Group for Sarcopenia: 2019 consensus update. J Am Med Dir Assoc. 2020;21(3):300–7.

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