

Review Article

Translating Oncology Nutrition Guidelines into Practice: A Conceptual Framework for Patient-Centred Tools

Nooshin Abbasi¹

1. Independent researcher

Background Cancer-related malnutrition and cachexia are common in oncology and are associated with reduced treatment tolerance, poorer quality of life, and increased mortality. Major organizations, including ESPEN, ASPEN, ASCO, SEOM, AIOM–SINPE, the Academy of Nutrition and Dietetics, NCCN, ERAS Society, ESMO, provide clinician-facing guidance for nutritional screening, assessment, and intervention, but they only partly address patient-centered implementation challenges such as nutritional literacy, behavioral barriers, and everyday self-management.

Aim This narrative conceptual review compares major oncology nutrition guidelines and related frameworks to identify shared principles, key differences, and recurrent implementation gaps, and to translate those gaps into prototype patient-centered tools.

Methods Recommendations were examined across five domains: screening and risk stratification, assessment and staging, therapeutic targets and escalation thresholds, survivorship and lifestyle counselling, and patient-facing implementation processes. High-impact literature on cachexia, treatment toxicity, and diet in cancer care informed interpretation of the comparison.

Results Across guideline clusters, common strengths included early screening, individualized intervention, and stepwise escalation from counselling and oral nutritional supplements to enteral or parenteral nutrition when indicated. Recurrent gaps included limited literacy-sensitive patient education, insufficient integration of structured patient-support tools, and incomplete digital implementation across existing pathways. On the basis of this comparison, five prototype patient-centered tools are proposed: a nutrition literacy and myth screen, symptom-linked rescue meal tools, perioperative nutrition checklists, survivorship diet and weight-management tools, and low-burden digital prompts with QR-linked education.

Conclusion This manuscript integrates major oncology nutrition guidelines into a unified implementation framework and translates shared patient-centered gaps into testable prototype tools.

Correspondence: papers@team.qeios.com — Qeios will forward to the authors

Introduction

Cancer-associated malnutrition and cachexia are multifactorial syndromes characterized by reduced dietary intake, involuntary weight loss, skeletal muscle depletion, altered metabolism, and systemic inflammation. These conditions are clinically important because they contribute to poorer treatment tolerance, increased toxicity, reduced physical function, impaired quality of life, and worse survival across multiple cancer types and treatment phases ^{[1][2][3][4]}. Nutritional care should therefore be viewed as an integral component of oncologic management rather than as a generic supportive measure.

Several major organizations have developed evidence-based guidance relevant to nutritional care in cancer. European Society for Clinical Nutrition and Metabolism (ESPEN)'s scientific and practical guidelines provide detailed recommendations on screening, assessment, energy and protein provision, and escalation to oral, enteral, and parenteral nutrition. American Society for Parenteral and Enteral Nutrition ^[5] guidance and the Academy of Nutrition and Dietetics' Oncology Evidence-Based Nutrition Practice Guideline similarly emphasize structured nutrition care processes, individualized intervention, and professional standards in oncology nutrition. American Society of Clinical Oncology (ASCO) and Sociedad Española de Oncología Médica (SEOM) contribute clinically oriented guidance that links nutrition to broader cancer management and supportive care, whereas Associazione Italiana di Oncologia Medica–Società Italiana di Nutrizione Parenterale ed Enterale (AIOM–SINPE) adapts oncology nutrition principles to the Italian context through recommendations on screening, care pathways, multidisciplinary integration, and nutritional support escalation ^{[6][7][8][9][10][11][12][13]}.

Additional frameworks broaden the field further. European Society For Medical Oncology (ESMO)'s cachexia guideline presents a multimodal approach to cancer cachexia that integrates nutritional care with physical activity, symptom control, psychosocial support, and selected pharmacologic approaches. National Comprehensive Cancer Network (NCCN) incorporates nutrition into disease-specific and survivorship pathways, including long-term dietary and weight-management recommendations for cancer survivors. Enhanced Recovery After Surgery (ERAS) Society guidelines embed nutritional

principles within procedure-specific perioperative care pathways, emphasizing fasting minimization, carbohydrate loading where appropriate, and early postoperative feeding. More recently, emerging digital care pathways such as MyPath have shown how guideline-informed nutrition care can be operationalized in a patient-centered format, alongside other implementation approaches such as ERAS pathways, survivorship guidance, and institutional nutrition protocols [\[2\]\[14\]\[15\]\[16\]\[17\]](#).

Despite the availability of these guidance systems, implementation remains inconsistent in real-world oncology care. Patients often receive fragmented counselling, rely on informal or conflicting information, and hold persistent misconceptions about protein, fats, supplements, and symptom management during treatment. Clinicians may also differ in nutritional knowledge, available time, and confidence in applying structured nutrition pathways, which can contribute to under-recognition of nutritional risk and inconsistent referral or escalation. Although existing guidelines are strong in clinician-facing recommendations, they are generally less developed in the areas of structured patient-support tools, literacy-sensitive education, and practical supports that connect recommendations with everyday eating behaviors [\[6\]\[14\]\[15\]](#).

This review addresses that gap. Its objectives are threefold: first, to compare and synthesize major oncology nutrition-related guidelines and frameworks across clinical nutrition, cachexia, survivorship, perioperative care, and digital implementation; second, to identify their shared strengths, key differences, and recurring patient-centered implementation deficits; and third, to propose a concise set of prototype patient-centered tools derived from those gaps [\[7\]\[8\]\[9\]\[10\]\[15\]](#).

Methods

This manuscript was designed as a narrative conceptual review. The aim was not to perform a systematic review or meta-analysis, but to compare major authoritative guidance documents in oncology nutrition and related supportive care fields, identify areas of agreement and divergence, and translate recurrent implementation gaps into prototype patient-centered tools for future testing [\[2\]\[6\]\[12\]](#). In addition to mapping shared principles, the comparison sought to highlight areas where existing guidance diverges or rests on limited or inconsistent evidence, particularly for preferred screening instruments, cachexia staging criteria, and the use of immunonutrition [\[18\]](#) or pharmacologic agents within multimodal care [\[19\]](#).

Guideline and framework selection rationale

Guidelines and frameworks were selected purposively according to four criteria: (1) authority of the issuing body, (2) direct relevance to adult oncology nutrition, cachexia, survivorship nutrition, or perioperative cancer care, (3) explicit clinical applicability, and (4) complementarity of perspective. On this basis, the review included comprehensive clinical nutrition guidance from ESPEN, ASPEN, AIOM–SINPE, and the Academy of Nutrition and Dietetics; oncology and supportive care guidance from ASCO, SEOM, and NCCN; perioperative guidance from ERAS Society; cachexia-specific guidance from ESMO; and the MyPath Nutrition Care Pathway as one emerging digital implementation model ^{[2][6][7][8][9][10][12][13][14][15][16]}.

Relevant literature was identified through targeted searches of major biomedical databases PubMed, ScienceDirect, Scopus and official society websites from January 2013 through July 2026. Search terms combined cancer, oncology nutrition, malnutrition, cachexia, nutritional screening, survivorship, perioperative nutrition, enteral nutrition, parenteral nutrition, and digital care pathway concepts. The search focused on guideline documents, practice recommendations, consensus statements, and selected high-impact review articles that informed interpretation of the guideline comparison.

ESPEN and ASPEN were included because they provide core clinical nutrition recommendations for screening, assessment, nutritional targets, and escalation of support. AIOM–SINPE was included as the principal Italian oncology nutrition reference because it adapts these principles to the national oncology context through recommendations on validated screening, timely referral to clinical nutrition services, individualized nutritional intervention, and escalation to oral, enteral, or parenteral support when indicated. ASCO, SEOM, and NCCN were included because they situate nutritional care within broader oncology and survivorship pathways, whereas ERAS Society guidance contributes a perioperative implementation perspective. ESMO was included for its specific focus on cancer cachexia, and MyPath was included because it represents an emerging digital, patient-centered model for integrating nutritional assessment and management into routine oncology care ^{[2][6][7][10][12][13][14][15]}. Excluded were sources that were non-clinical, opinion-based without supporting references, or not directly relevant to oncology nutrition.

Analytic framework

Recommendations from each guideline or framework were examined across five domains: (1) screening and risk stratification, (2) nutritional assessment and staging, (3) therapeutic targets and escalation thresholds, (4) survivorship and lifestyle counselling, and (5) patient-facing implementation processes. This structure was chosen to enable comparison not only of nutritional prescriptions, but also of how each guidance system addresses continuity of care, patient education, and translation into practice ^{[1][2][3][4][6][7][8][12][14][15][20]}.

Development of prototype implementation tools

Prototype patient-centered tools were developed only after cross-guideline comparison. Each proposed tool was linked to a recurrent implementation deficit identified across sources, including insufficient literacy-sensitive education, limited use of structured patient-support tools, weak symptom-linked self-management guidance, and incomplete digital integration outside emerging pathways such as MyPath. All proposed tools are conceptual prototypes intended to illustrate operationalization strategies and should not be interpreted as validated instruments or ready-to-implement standards ^{[14][15]}.

Results

Cross-guideline convergence

Across the selected guidelines and frameworks, there is broad agreement that nutritional risk should be identified early, reassessed repeatedly, and managed through individualized intervention. Most frameworks support structured screening with validated tools such as Nutritional Risk Screening-2002 (NRS-2002), Malnutritional Universal Screening Tool ^[21], or Patient-Generated Subjective Global Assessment (PG-SGA); stepwise escalation from dietary counselling and oral nutritional supplements to enteral or parenteral nutrition when oral intake is inadequate; and multidisciplinary involvement of nutrition specialists within oncology care. This pattern was especially clear in ESPEN, ASPEN-related clinical nutrition practice, and the AIOM–SINPE oncology nutrition position paper, all of which emphasize timely recognition of risk, referral to nutrition services, and individualized escalation of support. Cachexia-focused guidance further emphasizes muscle loss, systemic inflammation, functional decline, and multimodal management rather than energy prescription alone ^{[1][2][6][7][10][12][13][15]}.

A second area of convergence was the recognition that nutritional care should extend across the cancer continuum rather than being limited to advanced disease or end-of-life care. Survivorship-oriented recommendations from NCCN incorporate nutrition, weight management, lifestyle counselling, and supplement-related guidance after treatment, whereas perioperative frameworks derived from ERAS principles emphasize fasting minimization, early feeding, and integration of nutrition into surgical recovery pathways. In parallel, ESMO's cachexia guideline reinforces a multimodal model that combines nutritional care with exercise, symptom control, and psychosocial support rather than treating calorie provision alone as sufficient [\[8\]\[14\]\[15\]\[17\]\[22\]\[23\]](#).

A third common feature was the increasing emphasis on implementation rather than recommendation alone. Although this was expressed unevenly across sources, several documents acknowledged that malnutrition remains under-recognized and under-managed in routine oncology practice despite the availability of guidance. MyPath provides a useful example of a digital, PROM-driven implementation pathway because it links nutritional assessment, symptom burden, and patient-reported data with ongoing care processes in a patient-centered format, but it should be considered alongside other implementation approaches such as ERAS pathways, survivorship guidance, and institutional nutrition algorithms [\[13\]\[21\]\[24\]](#).

Cross-guideline differences

Despite these shared principles, important differences emerged across guideline families. ESPEN and related clinical nutrition guidance provide the most explicit detail on screening, nutritional assessment, energy and protein support, and indications for oral, enteral, and parenteral nutrition. AIOM-SINPE follows a similar clinical logic but adapts it to the Italian oncology setting by emphasizing validated screening, multidisciplinary referral pathways, and practical nutritional support within active cancer care [\[2\]\[6\]\[12\]\[13\]](#).

By contrast, ASCO- and NCCN-linked survivorship materials situate nutrition within broader oncology and post-treatment care pathways and are relatively less prescriptive with respect to nutritional targets and escalation thresholds. ESMO differs in scope by focusing specifically on cancer cachexia and its multimodal management, including muscle loss, inflammation, functional decline, and symptom burden. ERAS-derived nutrition principles are procedure-oriented and perioperative, with strong emphasis on preoperative preparation and early postoperative feeding, but they are not designed as comprehensive oncology nutrition frameworks across the whole disease course [\[2\]\[14\]\[25\]\[26\]](#).

MyPath differs from conventional guideline documents because it is an operational care pathway intended to embed nutritional assessment and management into routine oncology workflows through digital triage and patient-centered monitoring, but its role in this review is illustrative rather than central ^[21].

For clinicians, these differences translate into practical uncertainty, as guideline families endorse overlapping but not fully concordant screening tools, thresholds for escalation, and recommendations on adjunctive strategies such as immunonutrition, exercise-based prehabilitation, and pharmacologic cachexia agents^{[18][19]}.

Table 1 provides a concise comparison of the main oncology nutrition guidelines and frameworks across both clinical and implementation domains.

<u>Cluster</u>	<u>Main strengths</u>	<u>Patient-facing elements</u>	<u>Main gaps relevant to this manuscript</u>
Comprehensive clinical nutrition guidelines (ESPEN, ASPEN, AIOM, Academy of Nutrition and Dietetics)	Detailed screening, assessment, kcal/protein ranges, Oral Nutrition Support- Enteral Nutrition-Parenteral Nutrition (ONS-EN-PN) escalation, professional nutrition care process.	Counselling encouraged; some local materials and booklets; strong clinician guidance.	Limited standardized literacy-sensitive tools; generally, tumor-agnostic with heterogeneous screening instruments and staging criteria; limited digital implementation detail and sparse guidance in areas of contested evidence (e.g., immunonutrition, pharmacologic cachexia agents).
Cachexia-specific guidance (ESMO)	Strong multimodal cachexia framing, attention to muscle loss, inflammation, function, and symptom burden.	Patient support implied through multimodal care, but tools are not standardized.	Limited day-to-day patient self-management tools; limited operational literacy support; ongoing uncertainty about how best to integrate pharmacologic cachexia agents with nutrition and exercise in routine practice.
Oncology/survivorship guidelines with nutrition components (ASCO, SEOM, NCCN)	Good integration into oncology pathways, survivorship counselling, disease-specific relevance in some settings such as head and neck cancer.	Handouts, counselling, survivorship lifestyle advice, proactive referral patterns.	Less prescriptive on nutrition targets; limited acute symptom-linked food tools; nutrition may remain secondary to oncologic decision pathways.
Perioperative enhanced recovery guidelines (ERAS)	Strong perioperative workflow integration, fasting minimization, carbohydrate loading, early postoperative feeding.	Procedure-related patient education around feeding and	Mainly perioperative; limited survivorship or literacy focus; nutrition tools are rarely standalone or myth-targeted.

<u>Cluster</u>	<u>Main strengths</u>	<u>Patient-facing elements</u>	<u>Main gaps relevant to this manuscript</u>
		recovery pathways.	
Digital implementation framework (MyPath)	Digital implementation framework (MyPath): PROM-based, patient-centered, dynamic care pathway that integrates symptoms, Body Mass Index (BMI)/weight history, health status, C-Reactive Protein (CRP), and tailored care options; useful example of digital operationalization, but early-stage and not yet validated for broad routine use.	Strongest embedded patient interaction through PROMs, digital education, and shared decision-making.	Early-stage and not yet validated as a broad standard; dependent on infrastructure; patient toolset still evolving.

Table 1. Major oncology nutrition guidelines and frameworks compared across clinical and implementation domains

Recurrent implementation gaps

Three recurrent implementation gaps emerged across the comparison. First, nutritional literacy and misconception screening were rarely operationalized. Although counselling is widely recommended, few guidance systems provide structured instruments to assess what patients understand, which myths they hold, or how educational content should be adapted to patient literacy, symptom burden, or care phase ^[6]^[12]^[14].

Second, patient-support tools were less consistently developed than clinician-facing recommendations. Many guidelines specify when to screen, assess, counsel, supplement, or escalate, but fewer define the practical tools patients should receive to support everyday symptom-related eating decisions, perioperative self-management, or survivorship nutrition planning. This creates a recurring disconnect between professional recommendations and daily implementation at patient level ^[6]^[8]^[12]^[15].

Third, digital implementation remains incomplete across most frameworks. Outside of a few emerging models, the majority of guidance documents assume that nutritional care will be implemented locally through teams or institutions, without specifying interoperable digital workflows, structured symptom-triggered reassessment, or scalable patient-facing educational delivery. This gap is especially relevant because under-recognition of malnutrition in practice has already been documented in Italian oncology settings and remains a challenge internationally [\[10\]\[13\]\[15\]](#).

Prototype patient-centered tool domains derived from the comparison

On the basis of these recurrent gaps, five prototype patient-centered tool domains were identified: (1) a nutrition literacy and myth screen, (2) symptom-linked rescue meal tools, (3) perioperative nutrition checklists, (4) survivorship diet and weight-management tools, and (5) low-burden digital prompts with QR-linked education. These proposed tools do not represent new nutritional targets; rather, they illustrate how common unmet implementation needs across guideline systems may be translated into practical and testable support strategies. Their purpose within this manuscript is conceptual: to connect cross-guideline synthesis with patient-centered operationalization and future validation work [\[6\]\[21\]\[24\]\[26\]](#).

1. Oncology nutrition literacy and myth screen

A brief literacy and myth screen could assess understanding of key concepts such as the role of protein, the use of oral nutritional supplements, the indications for enteral feeding, and the difference between evidence-based advice and common misconceptions. This would directly address the persistent burden of misinformation in oncology nutrition.

An illustrative format would be a five-item intake screen administered before or during consultation, either on paper or digitally:

1. “During cancer treatment, eating enough protein helps maintain strength.”

True / False / Not sure

2. “If I cannot eat enough, oral nutrition supplements may be useful.”

True / False / Not sure

3. “A restrictive anti-cancer diet is safer than a balanced diet during treatment.”

True / False / Not sure

4. “Losing weight during cancer treatment should always be reported to the care team.

True / False / Not sure

5. “Tube feeding is only used when treatment has failed.”

True / False / Not sure

A simple scoring approach could classify 0-1 incorrect response as adequate basic literacy, 2-3 as indicating the need for targeted counselling, and 4-5 as indicating high-priority myth-focused education and follow-up. This tool should be regarded as hypothesis-generating and would require psychometric and clinical validation before broader use.

A complementary tumor-specific myth module can be added to flag common misconceptions in selected cancer types and to support more targeted counselling.

Illustrative examples include:

- pancreatic cancer (“I should avoid all fats”; evidence-based correction: fat intake should be individualized according to symptoms, digestion, and treatment phase, and some patients may require energy-dense foods rather than indiscriminate fat restriction),
- head and neck cancer (“Radiotherapy means I must switch to liquids only”; evidence-based correction: food texture should be adapted to swallowing ability and symptom burden, and many patients can maintain intake with soft or texture-modified foods rather than liquids alone),
- colorectal cancer (“Chemotherapy always requires a low-fiber diet”; evidence-based correction: fiber advice should be individualized according to bowel function, symptoms, and treatment-related effects, rather than applied universally),
- upper gastrointestinal cancer (“If I feel full quickly, I should stop eating more often”; evidence-based correction: early satiety is often better managed with smaller, more frequent, energy-dense meals rather than reduced eating frequency)..”

2. *Symptom-linked rescue meal tools*

Patient materials could link common nutrition-impact symptoms such as nausea, mucositis, dysphagia, early satiety, diarrhea, constipation, taste change, or pancreatic maldigestion with practical meal adaptations, oral strategies, and warning signs for clinical escalation. Such tools would operationalize existing guideline principles at the point of eating behavior rather than at the abstract recommendation level^{[6][8][12]}.

This tool is a concrete example that would translate guideline-based nutrition advice into immediate, symptom-specific food actions that patients can use between visits, especially during active treatment.

A one-page “symptom-to-food action card” with 4–6 common symptoms and three food responses each is shown in table 2.

<u>Symptom</u>	<u>What to try now</u>	<u>When to call the team</u>
Nausea	Small cold meals, dry crackers, ginger tea, sip oral supplements slowly	Vomiting >24 hours, unable to keep fluids down
Early satiety	6 mini-meals, add oils/powders, drink calories between meals	Intake <50% for >3 days
Diarrhea	Low-irritant foods, oral hydration, review enzyme use if pancreatic disease	>6 stools/day, dehydration
Constipation	Increase fluids if allowed, add gradual fiber if appropriate, prune/kiwi/fruit puree, warm drinks, gentle activity, review constipation-causing medicines	No bowel movement for several days, abdominal pain, vomiting, or suspected obstruction
Mouth pain / mucositis	Soft bland high-protein foods, cool foods, avoid acidic/spicy items	Severe pain, bleeding, almost no oral intake
Dysphagia	Texture-modified foods, fortify purees, high-protein drinks	Coughing/choking, rapid weight loss

Table 2. Symptom-linked rescue meal strategies for oncology nutrition support

This tool would make abstract recommendations more immediately usable and could be adapted across tumor types and treatment settings. Before clinical adoption, it should be tested for readability, acceptability, and usefulness in patients with different educational and clinical backgrounds.

3. Perioperative nutrition checklists

A concise perioperative nutrition checklist could translate ERAS and clinical nutrition recommendations into patient-friendly tasks, including fasting instructions, carbohydrate loading where appropriate, oral

supplement timing, early postoperative intake goals, and warning signs that require contact with the care team. This would not replace ERAS pathways, but would provide a patient-facing parallel tool ^{[15][17][22]}.

An illustrative example would be a seven-day perioperative checklist for patients undergoing upper gastrointestinal or pancreatic surgery.

Before surgery

1. I know when to stop solid food.
2. I know whether I should take carbohydrate drinks and when.
3. I started oral nutrition supplements if prescribed.
4. I reported recent weight loss and poor intake to the team.

After surgery

1. I know when oral fluids start.
2. I know my first-day intake goal.
3. I know what symptoms should prompt urgent contact.
4. I know whether tube feeding or supplements are part of my pathway.

Traffic-light footer

- Green = eating and drinking as planned
- Yellow = low intake, nausea, or early satiety
- Red = no intake, persistent vomiting, or worsening weakness

This prototype should be tested in preadmission or perioperative clinics to assess comprehension, completion time, feasibility, patient confidence, and adherence to postoperative feeding plans.

4. Survivorship diet and weight-management tools

Survivorship guidance supports long-term healthy dietary patterns, weight management, and physical activity. A structured survivorship tool could translate these recommendations into a practical and non-restrictive format while discouraging unsupported “anti-cancer diet” messaging ^{[8][14][20][23]}.

An illustrative example would be a Cancer-Confident Plate and Weight Tracker composed of two elements.

Plate model

- One-half plate vegetables, legumes, fruit variety
- One-quarter plate protein foods
- One-quarter plate whole grains or starchy foods
- Optional healthy fats

* Note: texture and quantity should be adapted to symptoms, weight goals, and clinician advice.

Weight and habits tracker

- weekly weight,
- appetite,
- number of physical activity days,
- supplement use,
- questions or concerns for the next visit.

This tool is consistent with survivorship guidance because it emphasizes diet quality, weight management, and physical activity without promoting restrictive eating patterns. It should be tested for usefulness, self-efficacy, and its potential to reduce reliance on unsupported dietary advice from non-medical sources.

5. Low-burden digital prompts and QR-linked education

For centers without full-scale digital nutrition infrastructure, low-burden semi-digital tools could provide a practical bridge between paper guidelines and more advanced digital pathways. Examples include QR-linked resources, brief symptom check-ins, and messaging-based prompts that connect reassessment with tailored education.

An illustrative example would be a QR-linked mini-pathway provided in discharge papers or through WhatsApp or SMS follow-up.

Step 1: The patient scans QR code.

Step 2: A 60-second self-check opens, including questions such as:

1. Have you eaten less than half your usual amount in the last 3 days?
2. Have you lost weight recently?
3. Which symptom is making eating hardest today?

Step 3: Based on the response, the patient receives:

- one symptom card,
- one rescue meal suggestion, and
- one warning on when to contact the care team.

Example output:

“You reported poor intake and nausea. Try 5–6 small cold meals, sip high-calorie drinks slowly, and separate fluids from meals. Contact your team if you cannot keep fluids down or if intake remains below half of usual for more than 3 days.”

This model reflects the same general logic of dynamic classification and tailored response used in digital implementation pathways such as MyPath, but in a lower-resource format intended to complement, rather than replace, existing guideline-based care.

Discussion

The principal finding of this review is that contemporary oncology nutrition guidance is rich in clinician-facing recommendations but still comparatively limited in standardized patient-facing implementation design. They also reflect important areas where evidence and recommendations remain heterogeneous—for example in screening instruments, diagnostic criteria, and the role of specialized nutrition interventions—further underscoring the need for simple, testable patient-facing tools. This matters because effective nutritional care depends not only on screening, assessment, and prescription, but also on what patients understand, believe, and do between consultations [\[1\]\[2\]\[3\]\[6\]\[12\]](#).

The novelty of this manuscript lies in comparing multiple guideline traditions that are often considered separately and reframing them through a single implementation question: how can their shared principles be translated into practical patient support? Existing publications address important individual domains, including clinical nutrition guidance, cachexia management, survivorship lifestyle counselling, ERAS pathways, and digital oncology nutrition systems. However, to current knowledge, none brings these strands together into a compact cross-guideline framework that explicitly derives prototype patient-centered tools from shared implementation gaps [\[2\]\[6\]\[14\]\[15\]](#).

Several limitations should be acknowledged. First, this is a narrative and purposive review rather than a systematic review, and it aims for conceptual synthesis rather than exhaustive coverage of all oncology

nutrition literature. Second, the proposed tools are not validated and should not be presented as ready for routine clinical adoption. Third, local applicability will vary according to staffing, reimbursement, digital infrastructure, and professional role definitions [\[2\]\[6\]\[10\]\[12\]](#).

Future work should proceed in stages. Initial development should involve co-design with patients and multidisciplinary clinicians to improve content, usability, and acceptability. This should be followed by psychometric validation of literacy instruments, feasibility testing of symptom and survivorship materials, and pragmatic implementation studies evaluating effects on intake, treatment tolerance, quality of life, and workflow integration [\[1\]\[3\]](#).

Conclusion

Current international oncology nutrition-related guidelines provide a strong foundation for clinician decision-making, but they do not yet fully close the gap between recommendations and patient-centered implementation. Across clinical nutrition, cachexia, survivorship, perioperative, and digital frameworks, the field has matured scientifically while remaining incomplete in literacy assessment, standardized patient-support tools, and practical digital delivery [\[2\]\[6\]\[7\]\[12\]\[14\]\[15\]](#).

The tools proposed here should be understood as conceptual prototypes derived from shared cross-guideline gaps rather than as validated instruments. Framed in this way, the manuscript offers a practical and novel contribution by translating established guideline knowledge into a patient-centered research and implementation agenda for oncology nutrition.

Statements and Declarations

Funding

No specific funding was received for this work.

Potential Competing Interests

No potential competing interests to declare.

Ethics

Not applicable. This narrative review does not report on or involve the use of any animal or human data or tissue.

Consent for Publication

Not applicable. This narrative review does not contain data from any individual person

Data Availability

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

Author Contributions

The author contributed fully to the conceptualization and methodology of the study, prepared the original draft, developed all visualizations, and completed the editing and final revisions.

References

1. ^{a, b, c, d, e}Argilés JM, López-Soriano FJ, Stemmler B, Busquets S (2023). "Cancer-Associated Cachexia - Under standing the Tumour Macroenvironment and Microenvironment to Improve Management." *Nat Rev Clin Oncol*. 20:250–264. doi:[10.1038/s41571-023-00734-5](https://doi.org/10.1038/s41571-023-00734-5).
2. ^{a, b, c, d, e, f, g, h, i, j, k, l, m}Arends J, Strasser F, Gonella S, Solheim TS, Madeddu C, Ravasco P, Buonaccorso L, de van der Schueren MAE, Baldwin C, Chasen M, Ripamonti CI (2021). "Cancer Cachexia in Adult Patients: E SMO Clinical Practice Guidelines (☆)." *ESMO Open*. 6:100092. doi:[10.1016/j.esmoop.2021.100092](https://doi.org/10.1016/j.esmoop.2021.100092).
3. ^{a, b, c, d}Tan Y, Xue R, Pan Y, He Z, Hu X, Li Y, Li K, Zhang X, Bian XW, Wang B (2026). "Cancer Cachexia: Molecular Basis and Therapeutic Advances." *Signal Transduction Target Ther*. 11:16. doi:[10.1038/s41392-025-0233-1](https://doi.org/10.1038/s41392-025-0233-1).
4. ^{a, b}Laviano A, Molino A, Fanelli FR (2012). "Cancer-Treatment Toxicity: Can Nutrition Help?" *Nat Rev Clin Oncol*. 9:605–605. doi:[10.1038/nrclinonc.2012.99-c1](https://doi.org/10.1038/nrclinonc.2012.99-c1).
5. ^aNutrition A-ASfPaE (2025). "ASPEN/SCCM Pediatric Critical Care Nutrition Guideline: Protocol." *Nutrition A-ASfPaE*. <https://nutritioncare.org/wp-content/uploads/2025/01/Pediatric-Critical-Care-Protocol-Revised-Finalized-Protocol-Post-Review.pdf>.
6. ^{a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p}Muscaritoli M, Arends J, Bachmann P, Baracos V, Barthelemy N, Bertz H, Bozzetti F, Hütterer E, Isenring E, Kaasa S, Krznaric Z, Laird B, Larsson M, Laviano A, Mühlebach S, Oldervoll L, Ravasco P, Solheim TS, Strasser F, de van der Schueren M, Preiser JC, Bischoff SC (2021). "ESPEN Practical Guideline: Clinical Nutrition in Cancer." *Clin Nutr*. 40:2898–2913. doi:[10.1016/j.clnu.2021.02.005](https://doi.org/10.1016/j.clnu.2021.02.005).

7. ^{a, b, c, d, e, f, g}Thompson KL, Elliott L, Fuchs-Tarlovsky V, Levin RM, Voss AC, Piemonte T (2017). "Oncology Evidence-Based Nutrition Practice Guideline for Adults." *J Acad Nutr Diet*. **117**:297–310.e47. doi:[10.1016/j.jand.2016.05.010](https://doi.org/10.1016/j.jand.2016.05.010).
8. ^{a, b, c, d, e, f, g, h}Liposits G, Orrevall Y, Kaasa S, Österlund P, Cederholm T (2021). "Nutrition in Cancer Care: A Brief, Practical Guide With a Focus on Clinical Practice." *JCO Oncol Pract*. **17**:e992–e998. doi:[10.1200/OP.20.00704](https://doi.org/10.1200/OP.20.00704).
9. ^{a, b, c}Virizuela JA, Cambor-Álvarez M, Luengo-Pérez LM, Grande E, Álvarez-Hernández J, Sendrós-Madroño MJ, Jiménez-Fonseca P, Cervera-Peris M, Ocón-Bretón MJ (2018). "Nutritional Support and Parenteral Nutrition in Cancer Patients: An Expert Consensus Report." *Clin Transl Oncol*. **20**:619–629. doi:[10.1007/s12094-017-1757-4](https://doi.org/10.1007/s12094-017-1757-4).
10. ^{a, b, c, d, e, f, g}Anonymous (2025). "Linee guida AIOM: "Il supporto nutrizionale nel paziente oncologico in terapia attiva"" [AIOM Guidelines: "Nutritional Support in Cancer Patients Undergoing Active Therapy"]. As sociation Italiana Oncologia Medica "AIOM". <https://osservatorio.favo.it/diciassettesimo-rapporto/parte-seconda/linee-guida-aiom-nutrizione-reti-oncologiche-regionali/>.
11. ^aCharuhas Macris P, Schilling K, Palko R (2018). "Academy of Nutrition and Dietetics: Revised 2017 Standards of Practice and Standards of Professional Performance for Registered Dietitian Nutritionists (Competent, Proficient, and Expert) in Oncology Nutrition." *J Acad Nutr Diet*. **118**:736–748.e42. doi:[10.1016/j.jand.2018.01.012](https://doi.org/10.1016/j.jand.2018.01.012).
12. ^{a, b, c, d, e, f, g, h, i, j, k, l, m}Arends J, Bachmann P, Baracos V, Barthelemy N, Bertz H, Bozzetti F, Fearon K, Hütter E, Isenring E, Kaasa S, Krznaric Z, Laird B, Larsson M, Laviano A, Mühlebach S, Muscaritoli M, Oldervoll L, Ravasco P, Solheim T, Strasser F, de van der Schueren M, Preiser JC (2017). "ESPEN Guidelines on Nutrition in Cancer Patients." *Clin Nutr*. **36**:11–48. doi:[10.1016/j.clnu.2016.07.015](https://doi.org/10.1016/j.clnu.2016.07.015).
13. ^{a, b, c, d, e, f, g}Caccialanza R, Pedrazzoli P, Cereda E, Gavazzi C, Pinto C, Paccagnella A, Beretta GD, Nardi M, Laviano A, Zagonel V (2016). "Nutritional Support in Cancer Patients: A Position Paper from the Italian Society of Medical Oncology (AIOM) and the Italian Society of Artificial Nutrition and Metabolism (SINPE)." *J Cancer*. **7**:131–135. doi:[10.7150/jca.13818](https://doi.org/10.7150/jca.13818).
14. ^{a, b, c, d, e, f, g, h, i, j, k, l}Denlinger CS, Ligibel JA, Are M, Baker KS, Demark-Wahnefried W, Dizon D, Friedman D L, Goldman M, Jones L, King A, Ku GH, Kvale E, Langbaum TS, Leonardi-Warren K, McCabe MS, Melisko M, Montoya JG, Mooney K, Morgan MA, Moslehi JJ, O'Connor T, Overholser L, Paskett ED, Peppercorn J, Raza M, Rodriguez MA, Syrjala KL, Urba SG, Wakabayashi MT, Zee P, McMillian NR, Freedman-Cass DA (2014). "Sur

vivorship: Nutrition and Weight Management, Version 2.2014. Clinical Practice Guidelines in Oncology." *J Natl Compr Canc Netw*. 12:1396–1406. doi:[10.6004/jnccn.2014.0137](https://doi.org/10.6004/jnccn.2014.0137).

15. ^{a, b, c, d, e, f, g, h, i, k, l, m, n}Weimann A, Braga M, Carli F, Higashiguchi T, Hübner M, Klek S, Laviano A, Ljungqvist O, Lobo DN, Martindale R, Waitzberg DL, Bischoff SC, Singer P (2017). "ESPEN Guideline: Clinical Nutrition in Surgery." *Clin Nutr*. 36:623–650. doi:[10.1016/j.clnu.2017.02.013](https://doi.org/10.1016/j.clnu.2017.02.013).
16. ^{a, b}Gill A, Givi B, Moore MG (2019). "AHNS Series – Do You Know Your Guidelines?: Assessment and Management of Malnutrition in Patients With Head and Neck Cancer: Review of the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines)." *Head Neck*. 41:577–583. doi:[10.1002/hed.24866](https://doi.org/10.1002/hed.24866).
17. ^{a, b, c}Moore C, Pegues J, Narisetty V, Spankovich C, Jackson L, Jefferson GD (2021). "Enhanced Recovery After Surgery Nutrition Protocol for Major Head and Neck Cancer Surgery." *OTO Open*. 5:2473974x211021100. doi:[10.1177/2473974x211021100](https://doi.org/10.1177/2473974x211021100).
18. ^{a, b}Laird BJA, Antonuzzo L, Cabrero DS, Esin E, Froeling F, Jordan K, Kekez D, Skipworth R, Schooneman M, Yalcin S, Prado CM, Muscaritoli M (2026). "Embedding Nutrition Into Routine Oncology Care: About Time?" *Oncol Rev*. 20:1639494. doi:[10.3389/or.2026.1639494](https://doi.org/10.3389/or.2026.1639494).
19. ^{a, b}Prado CM, Laviano A, Gillis C, Sung AD, Gardner M, Yalcin S, Dixon S, Newman SM, Bastasch MD, Sauer AC, Hegazi R, Chasen MR (2022). "Examining Guidelines and New Evidence in Oncology Nutrition: A Position Paper on Gaps and Opportunities in Multimodal Approaches to Improve Patient Care." *Support Care Cancer*. 30:3073–3083. doi:[10.1007/s00520-021-06661-4](https://doi.org/10.1007/s00520-021-06661-4).
20. ^{a, b}Mayne ST, Playdon MC, Rock CL (2016). "Diet, Nutrition, and Cancer: Past, Present and Future." *Nat Rev Clin Oncol*. 13:504–515. doi:[10.1038/nrclinonc.2016.24](https://doi.org/10.1038/nrclinonc.2016.24).
21. ^{a, b, c, d}Hustad KS, Koteng LH, Urrizola A, Arends J, Bye A, Dajani O, Deliens L, Fallon M, Hjermstad MJ, Kohnen M, Kurita GP, Lundebj T, Mitrea N, Payne C, Roselló-Keränen S, Warmbrodt N, de Wilde A, Kaasa S, de Vos-Geelen J, Laird BJA (2025). "Practical Cancer Nutrition, From Guidelines to Clinical Practice: A Digital Solution to Patient-Centred Care." *ESMO Open*. 10:104529. doi:[10.1016/j.esmoop.2025.104529](https://doi.org/10.1016/j.esmoop.2025.104529).
22. ^{a, b}Low DE, Allum W, De Manzoni G, Ferri L, Immanuel A, Kuppusamy M, Law S, Lindblad M, Maynard N, Neal J, Pramesh CS, Scott M, Mark Smithers B, Addor V, Ljungqvist O (2019). "Guidelines for Perioperative Care in Esophagectomy: Enhanced Recovery After Surgery (ERAS®) Society Recommendations." *World J Surg*. 43:299–330. doi:[10.1007/s00268-018-4786-4](https://doi.org/10.1007/s00268-018-4786-4).
23. ^{a, b}Li Z, Ding X, Chen Y, Keaver L, Champ CE, Fink CL, Lebovits SC, Corroto M, Zhang FF (2024). "Review of Nutrition Guidelines and Evidence on Diet and Survival Outcomes for Cancer Survivors: Call for Integrating Nutrition Into Oncology Care." *J Nutr*. 154:2346–2362. doi:[10.1016/j.tjn.2024.05.024](https://doi.org/10.1016/j.tjn.2024.05.024).

24. ^{a, b}Caccialanza R, Lobascio F, Cereda E, Aprile G, Farina G, Tracì F, Borioli V, Caraccia M, Turri A, De Lorenzo F, Pedrazzoli P (2020). "Cancer-Related Malnutrition Management: A Survey Among Italian Oncology Units and Patients' Associations." *Curr Probl Cancer*. **44**:100554. doi:[10.1016/j.cuprob.2020.100554](https://doi.org/10.1016/j.cuprob.2020.100554).
25. ^ΔWeimann A, Bezmarevic M, Braga M, Correia M, Funk-Debleds P, Gianotti L, Gillis C, Hübner M, Inciong JF B, Jahit MS, Klek S, Kori T, Laviano A, Ljungqvist O, Lobo DN, Seguro CL, Montroni I, Reddy BR, Saur NM, Schweinlin A, Shi HP, Takeuchi H, Waitzberg DL, Wallengren O, Wischmeyer PE, Ysebaert D, Bischoff SC (2025). "ESPEN Guideline on Clinical Nutrition in Surgery – Update 2025." *Clin Nutr*. **53**:222–261. doi:[10.1016/j.clnu.2025.08.029](https://doi.org/10.1016/j.clnu.2025.08.029).
26. ^{a, b}Sanft T, Day AT, Ansbaugh SM, Ariza-Heredia EJ, Armenian S, Baker KS, Ballinger TJ, Cathcart-Rake EJ, Cohen SH, Evgeniou E, Fairman NP, Feliciano J, Flores TF, Friedman DL, Gabel NM, Goldman ME, Hill-Kayser CE, Hock K, Kline-Quiroz C, Koura D, Lee NK, McDonough AL, Mooney K, Moore HCF, Moryl N, Neuman H, Overholser L, Patel CG, Peterson LL, Pirl WF, Porpiglia A, Rogers LQ, Saidain A, Schapira L, Smith SK, Tenne L, Tevaarwerk A, Von Ah D, Yang EH, Zee P, McMillian N, Freedman-Cass D (2025). "NCCN Guidelines® Insights: Survivorship, Version 2.2025." *J Natl Compr Canc Netw*. **23**:208–217. doi:[10.6004/jnccn.2025.0028](https://doi.org/10.6004/jnccn.2025.0028).

Declarations

Funding: No specific funding was received for this work.

Potential competing interests: No potential competing interests to declare.