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Cancer-related malnutrition management: A survey among Italian Oncology Units and Patients' Associations

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A B S T R A C T

Attitudes toward cancer-related malnutrition vary considerably among oncologists and nutritional support is often not handled according to the available guidelines. The Italian Association of Medical Oncology (AIOM), Italian Society of Artificial Nutrition and Metabolism (SINPE), Italian Federation of Volunteer-based Cancer Organizations (FAVO), and Fondazione AIOM Working Group conducted a national web-based survey addressed to all Italian Oncology Units referees and Italian Cancer Patients Associations. The aim was to investigate the current management of malnutrition and views on nutritional care among oncologists and patients. One hundred and seventy-one (51.6%) of the 331 registered Italian Oncology Units and 75 (38.5%) of the 195 FAVO local communities participated in the survey. Nutritional assessment and support were integrated into patient care from diagnosis for 35% of Oncology Unit referees and 15% of FAVO associates. According to 42% of oncologists, nutritional assessment was carried out only after patients requested it, while it was not performed at all for 45% of FAVO associates. Almost 60% of patient affiliates were not aware of clinical referrals for home artificial nutrition management. However, for almost all responders, the evaluation of nutritional status was considered crucial in predicting tolerance to anticancer treatment.

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Although malnutrition was considered a limiting factor in oncology treatments by both oncologists and patients, nutritional care practices still appear largely inappropriate. Attitudes differ between oncologists and patients, the latter reporting a more dissatisfied picture. Improving nutritional care in oncology remains a challenging task.

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Introduction

Malnutrition is a frequent problem in oncology, and is associated with an increase in treatment-related toxicity, a reduced response to cancer treatment, an impaired quality of life and a worse overall prognosis.^{1,2}

Despite the availability of international guidelines and recommendations for nutritional support in cancer patients,^{3,4} almost all the existing surveys, which are summarized in [Table 1](#),⁵⁻¹⁶ show that attitudes toward this issue vary considerably among oncologists and patients, with the consequence that many malnourished patients do not receive adequate and prompt nutritional support.^{17,18} In addition, nutritional therapy standards vary considerably both between countries and within each country.¹⁹

In recent years, a series of initiatives have been introduced to improve the quality of nutrition care in Oncology; for example, Scotland and the Netherlands have established mandatory screening for malnutrition in cancer patients.³ More recently, the Italian Ministry of Health published official guidelines for nutrition in cancer patients, in collaboration with the joint Working Group by the Italian Association of Medical Oncology (AIOM), the Italian Society of Artificial Nutrition and metabolism (SINPE), the Italian Federation of Volunteer-based Cancer Organizations (FAVO), and Fondazione AIOM.²⁰ Furthermore, the Cancer Patients' Bill of Rights defining appropriate and prompt nutritional support published by the same group,¹⁸ was endorsed by the European Cancer Patient Coalition in 2018.²¹

Following the previous pilot survey addressed to all AIOM members,⁵ the joint AIOM-SINPE-FAVO-Fondazione AIOM Working Group conducted the present second research, focusing on all Italian Oncology Unit referees and Italian Cancer Patient Associations, with the aim of investigating further the management of cancer-related malnutrition and comparing attitudes of Italian oncologists and patients to nutritional care.

Methods

The Working Group developed an 11-item web-based multiple-choice questionnaire, derived from that used in the 2016 exploratory survey,⁵ but partially adapted for patient's responses.

A formal invitation to participate in the survey was sent via email to all referees of the 331 registered Italian Oncology Units (Libro Bianco AIOM 2017) and all the 195 Italian Cancer Patients Associations (FAVO 2017). Data were collected from December 2017 to September 2018 through the AIOM and FAVO-dedicated web sites (www.aiom.it; www.favo.it). In addition to questions, regarding the Oncology Units' characteristics, data were collected on the four major domains selected previously¹: the importance of nutritional status and support,² the identification of malnutrition,³ the management of nutritional support,⁴ possible strategies for improving nutrition care practices. Descriptive statistical analyses were carried out on March 2019.

Table 1

Summary of previous surveys on nutritional care in oncology.

Author, year [reference]	Country	Target population	Sample	Methods	Objective	Main findings	Conclusions
Muscaritoli et al, 2019 ⁶	Italy, Spain, Greece	Patients	907 patients	Nationwide web or phone-based survey or interviews	Patients' awareness of nutrition's importance during cancer therapy; how the oncologist detects the nutritional problems according to patients; to develop practical guidance on how to improve daily nutrition, especially during therapy.	72.5% reported feeding problems; 53.9% reported that oncologists did not check their feeding status; 69% reported weight loss; 35.0% had their weight measured; 45.7% believed their oncologist considered cancer-related weight loss unimportant; 62.7% did not receive any advice to improve appetite and allow for adequate nutrition.	Patients reported differences in perspective between them and oncologists on cancer-related nutritional issues and the specific nutritional approaches.
Gavazzi et al, 2018 ⁷	Italy	Patients afferent to AIMaC information points	1257 patients	Self-reported questionnaires	Patients' dietary modifications during cancer treatment.	56.1% reported dietary changes since diagnosis; 50.8% adopted a healthier diet; 31.3% faced eating-related side effects; nutritional counseling within the hospital was available for only 15% of the participants; 26% received general information by the oncologists; 59% gathered general information from websites, parents and friends.	Cancer patients are attentive to the importance of diet during cancer treatment; nutrition indications are rarely provided by oncologists and clinical nutrition specialists.

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Table 1 (continued)

Author, year [reference]	Country	Target population	Sample	Methods	Objective	Main findings	Conclusions
Gyan et al, 2018 ⁸	France	Patients, relatives and oncologists	2197 oncologists; 2071 patients; 976 relatives	Self-reported questionnaires	Prevalence of malnutrition.	Overall prevalence of malnutrition was 39%, with highest rates among GI cancer; oncologists overestimated, while patients and relatives underestimated malnutrition; nutrition interventions were recalled by 81% of patients, 84% of relatives, and 69% of oncologists.	Malnutrition is common among cancer patients, particularly with GI cancer; a fair proportion of patients, relatives and oncologists recalled nutrition interventions; further studies are needed to improve the awareness of malnutrition in patients and their relatives as well as the efficacy of nutrition interventions.
Erickson et al, 2018 ⁹	Germany	Nurses and oncologists	305 oncologists, 201 nurses from 69 certified centers	Nationwide web-based survey on nutritional support practices	Gaps in the provision of medical nutrition care and identification of specific areas of need.	32.6% of oncologists, 37.2% of nurses reported a nutritional counseling pathway; 24.2% of oncologists and 26.9% of nurses reported the availability of nutritional care continuation for patients; 70.1% of oncologists and 55.8% of nurses reported the availability of specialists in nutrition.	A huge gap between clinical needs and actual delivery of nutritional support was detected.
William et al, 2017 ¹⁰	USA	GI cancer surgeons	75 fellowships	Nationwide web-based survey on perioperative nutritional support practices	Practices and attitudes regarding perioperative nutrition screening/support among gastrointestinal cancer surgeons.	<10% performed preoperative nutritional screening; 74% considered malnutrition a major problem in GI cancer patients; 83% considered preoperative nutritional supplementation a relevant practice.	GI cancer surgeons seem to be aware of the importance of perioperative nutritional screening and support; routine nutrition screening programs are still lacking in GI cancer surgery.

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Table 1 (continued)

Author, year [reference]	Country	Target population	Sample	Methods	Objective	Main findings	Conclusions
Baumgartner et al, 2017 ¹¹	Switzerland	Hematologists	10 centers	Qualitative survey on nutritional screening and support in patients undergoing allo- or auto-HSCT	Differences between nutritional practices and international recommendations; barriers to the implementation of nutritional therapy.	70% used a validated malnutrition screening tool (NRS 2002); 10 % did not provide nutritional support; 50% used parenteral nutrition and 50% enteral nutrition as first step intervention.	The vast majority of Hematology Swiss centers use a validated malnutrition screening tool and provide nutritional support; a wide variation in the use of nutritional therapy in patients undergoing HSCT was detected, with low adherence overall to current practice guidelines.
Maschke et al, 2017 ¹²	Germany	Patients	1335 patients	Nationwide web-based survey by two national umbrella organizations for self-help groups	Practices and attitudes regarding nutrition among cancer patients.	69% of patients reported having received information on nutrition and/or specific nutrition-related symptoms; 57.0% reported having had questions concerning nutrition and/or problems with food intake; women reported receiving nutrition counseling in the hospital nearly twice as often as men (12.5 % vs 5.7%).	Nutrition is an essential element in cancer care and patients report a high interest and need. Yet, many patients do not have access to high-quality nutrition therapy during and after cancer therapy.

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Table 1 (continued)

Author, year [reference]	Country	Target population	Sample	Methods	Objective	Main findings	Conclusions
Caccialanza et al, 2016 ⁵	Italy	Oncologists (AIOM members)	135 oncologists	Nationwide web-based survey	Attitude of oncologists towards malnutrition and the management of nutritional support.	5.7% of the AIOM members participated in the survey; 28% reported that nutritional assessment and support were routinely integrated into patient care; 49% reported that nutritional assessment was carried out only upon patients' request or not at all; 65% reported that clinical nutritionists were available; 97% reported that nutritional status was decisive or often crucial for anti-cancer treatment tolerance/feasibility.	Although malnutrition and nutritional support seemed to be perceived as relevant factors for the feasibility of oncologic treatments, nutritional care practices appeared still largely inappropriate.
Martin et al, 2016 ¹³	The Netherlands, Sweden, Italy, Scotland, France	Oncologists, radiologists, surgeons, physicians nutritionists, dietitians and nurses involved in HNE cancer care	29 participants	One-on-one semistructured interviews followed by a focus group	To identify barriers and enablers to the implementation of nutrition care in HNE cancers and to prioritize barriers to help improve the nutrition care process.	Participant responses revealed variability in the composition of HNE care teams and in the roles and responsibilities for nutrition care between centers; 5 main themes along with the factors acting as barriers or enablers to nutrition care in HNE cancers were identified: evidence base demonstrating benefit of nutrition interventions, implementation processes for nutrition care (inclusive of assessment, intervention, and follow-up), provider characteristics, site factors, and patient characteristics.	Themes related to nutrition care in HNE cancers were similar between sites, but barriers and enablers differed. Participants agreed the following actions would result in improvements in nutrition care: enhance the evidence base to test the benefit of nutrition interventions, with a focus on resolving specific controversies regarding nutrition therapy, and create standardized nutrition care pathways where roles and responsibilities for care are clearly defined.

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Table 1 (continued)

Author, year [reference]	Country	Target population	Sample	Methods	Objective	Main findings	Conclusions
Sharma et al, 2015 ¹⁴	India	Dietitians, oncologists, nurses	108 participants from 42 different health institutions	Self-administered questionnaires.	To describe the existing nutritional assessment and management practices for children with cancer.	50 % responded that they routinely perform nutritional assessment, which is most commonly carried out by dietitians (68%) followed by oncologists (28%); almost 64% reported that clinical dietician is routinely available in their institutions; 69% reported that education on nutrition is provided routinely to all patients/families.	Nutritional assessment and support are not provided to all patients, yet. Hence, national guidelines and policies on this topic are warranted.
Ladas et al, 2006 ¹⁵	USA, Canada, Australia, New Zealand, Europe	Oncologists, dietitians and nurses	125 institutions of the COG	Multinational web-based survey	To identify the standards of practice in the nutritional management of children with cancer.	54% of COG institutions responded to the survey; 65% reported that nutrition assessment is performed only when clinically indicated, 56% reported to use a screening tool that triggers nutrition consultations; 41% reported that the availability of registered dietitians is a significant barrier to providing nutrition intervention.	Standardized nutrition protocols for the pediatric oncology population are lacking. The effect of varied nutrition practices on quality of life, toxicity, and outcome in children with cancer is still unknown.

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Table 1 (continued)

Author, year [reference]	Country	Target population	Sample	Methods	Objective	Main findings	Conclusions
Spiro et al, 2006 ¹⁶	United Kingdom	Trainee oncologists	357 participants	A case-scenario-based questionnaire	To develop an understanding of the extent to that oncologists are able to identify malnutrition, to elucidate the importance which oncologists place on nutrition as a variable in the clinical care and outcome of their patients and to identify the barriers that might exist in the decision to advocate nutritional support.	80% expressed uncertainty or a lack of confidence in their ability to identify malnutrition; 65% rated nutritional status as very important; 76% felt that nutrition intervention would play a role in hospital stay and 78% in treatment toxicity; 69% reported lack of clear guidelines, 60% lack of knowledge, 56% and lack of time as barriers to implement nutritional care practices.	Oncologists lack the ability to identify factors that place patients at risk from malnutrition. Although oncologists acknowledge the importance of nutritional support, barriers such as lack of knowledge and lower priority because of time constraints may prevent referral for, or direct nutritional intervention.

AIMaC, Associazione Italiana Malati di Cancro; AIOM, Italian Society of Medical Oncology; COG, Children's Oncology Group; GI, gastrointestinal; HNE, head and neck and esophageal; HSCT, hematopoietic stem cell transplantation; NRS-2002, Nutritional Risk Screening-2002.

Results

One-hundred and seventy-one Oncology Units (51.6%) and 75 (38.5%) of the 195 FAVO Associations participated in the survey. A satisfactory distribution of responders across all Italian regions was achieved (100% for AIOM referees and 85.7% for FAVO associates); 82% of participating Oncology Units cared for more than 200 new patients per year and 73% had at least 10 inpatient beds. A detailed description of the answers is reported in [Table 2](#).

Importance of nutritional status and support (Q1, Q10)

Although 98% of AIOM referees and 100% of Patient Associations reported that nutritional status is crucial or often decisive in assessing whether oncologic treatment is practicable or likely to be tolerated, nutritional practices were reported to be routinely integrated into cancer patient care from diagnosis by only 35% of Oncology Units and by 15% of Patient Associations.

Identification of malnutrition (Q3, Q4)

Nutritional assessment was reported to be carried out at diagnosis only by 27% AIOM referees and 14% of patient affiliates. In more than 40% of Oncology Units, it appeared to be performed only upon patient request, while 45% of patients' associates stated that it is not performed at all.

Validated nutritional screening was reported to be used in 16% of Oncology Units, while only 8% of patients' affiliates stated that they are available.

Management of nutritional support (Q2, Q5-Q9)

The criteria for the identification of candidates for nutritional support seemed to be appropriate in 70% of the Units, as both the impairment of nutritional status and the risk of malnutrition associated with cancer treatment were apparently taken into account. More than 80% of the referees declared that all the possible types of nutritional support were available in their Units. Nutritional support was reported to be managed by referring the patients to a Clinical Nutrition Unit/specialist working in or outside the institution, by 68% of the responding Oncology Units. Similar percentages were reported with regards to the prescription and monitoring of home artificial nutrition (HAN), which is an extra-hospital therapy, consisting in the provision of artificial nutrition at the patients' home. However, less than 50% of the Oncology Units knew how to refer patients to their institutional Clinical Nutrition Unit/specialist or to those of other hospitals.

Nutritional support was managed by Clinical Nutrition Units/specialists for 31% of FAVO associates, while in 46% it is not guaranteed at all. Almost 60% of patients' affiliates did not know who is in charge of HAN prescription and monitoring.

Possible strategies for improving nutritional support management (Q11)

Finally, 67% of the responding oncologists reported that specific care protocols, shared either at regional or national level, would be needed to obtain an improvement of nutritional care management in oncology.

Table 2

Cross tabulation of answers to the questions.

Questionnaire items	AIOM Referees (171) %	FAVO Referees (75) %
1. Do nutritional assessment and support play a role in the daily care of cancer patients?		
Yes, they are integral part of the therapeutic program since diagnosis	35	15
They play an important role, but they are not performed on a routine basis	51	37
They play a secondary role compared to cancer treatments	14	7
Not at all / I don't know	0	41
2. How is nutritional support managed?		
Directly by the healthcare professionals working in the Oncology Unit	31	23
By referring the patient to a Clinical Nutrition Unit/specialist working in the institution	57	23
By referring the patient to a Clinical Nutrition unit/specialist working outside the institution	10	8
By referring the patient to the general practitioner	0	0
Upon the patient's request or not at all	2	46
3. When is nutritional assessment performed?		
During the first visit and all the follow-up visits	27	14
During the first visit, then only when the patient reports weight loss and/or the reduction of food intake	31	20
Only during the first visit	0	5
Only when the patient reports weight loss and/or the reduction of food intake	42	6
Not at all	0	45
4. How is nutritional assessment performed?		
Using validated multi-dimensional screening tools (MUST, NRS2002, MNA, NRI, SGA)	16	8
By assessing BMI, recent unintentional weight loss, food intake and by instrumental evaluations (e.g. body composition, handgrip strength)	46	16
By assessing BMI	23	10
By assessing recent unintentional weight loss	15	16
Not performed / I don't know	0	50
5. For which patients is nutritional support prescribed?		
Those with impaired nutritional status or at risk of developing malnutrition during cancer treatments	70	
Those with impaired nutritional status	21	
Those reporting difficulties in spontaneous feeding	8	
Those suffering from and advanced-stage disease	1	
None	0	
6. Which kind of nutritional support is provided?		
Nutritional counseling, oral nutritional supplements, enteral nutrition and parenteral nutrition	84	
Nutritional counseling, oral nutritional supplements and enteral nutrition	5	
Nutritional counseling and oral nutritional supplements	8	
Nutritional counseling	1	
None	2	
7. Who is responsible for the prescription and activation of a home artificial nutritional support?		
The healthcare professionals working in the Oncology Unit	29	12
The Clinical Nutrition Unit/specialist working in the institution	47	14
A Clinical Nutrition Unit/specialist working outside the institution	12	8
The general practitioner	11	6
I do not know	1	60
8. Who is responsible for the nutritional follow-up of patients receiving home artificial nutrition?		
The healthcare professionals working in the Oncology Unit	16	8
The Clinical Nutrition Unit/specialist working in the institution	45	16
A Clinical Nutrition unit/specialist working outside the institution	16	7
The general practitioner	19	4
I don't know	4	65

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Table 2 (continued)

Questionnaire items	AIOM Referees (171) %	FAVO Referees (75) %
9. Do you know how to refer patients to your institutional Clinical Nutrition Unit/specialist or of those of other hospitals you are collaborating with?		
Yes	47	
There is a Clinical Nutrition Unit in my institution, but I don't have the contacts	30	
There are no Clinical Nutrition Units/specialists in our territory	15	
I don't know	8	
10. How would you rate the role of nutritional status in the practicability of/tolerance to cancer treatment?		
Crucial	47	66
Rather important, often decisive	51	34
Little important, rarely decisive	2	0
Useless	0	0
11. Which of the following strategies could be useful to improve nutritional care practices in cancer patients?		
Shared care regional and national protocols	67	
Shared care institutional protocols	19	
Educational programs	8	
All of the above	4	
I don't know	2	

AIOM, Italian Society of Medical Oncology; BMI, body mass index; FAVO, Federation of Volunteer-based Cancer Organizations; MNA, mini nutritional assessment; NRI, nutritional risk index; MUST, malnutrition universal screening tool; NRS-2002, Nutritional Risk Screening-2002; SGA, subjective global assessment.

Discussion

Following our first exploratory national study,⁵ the present survey was intended to investigate further the management of cancer-related malnutrition in Italy. Its purpose was also to compare the attitudes to nutritional care by Italian oncologists and patients.

The first difference from the 2016 exploratory survey was the involvement of Italian Cancer Patient Associations, whose response rate may be considered satisfactory. As planned by the AIOM-SINPE-FAVO-Fondazione AIOM Working Group,²⁰ it was addressed to all the Italian Oncology Unit referees, in order to obtain a reliable picture of the national situation. The response rate of AIOM referees was almost 9 times higher than in the previous survey (51.6 vs 5.7%), and may reflect the increased awareness and consideration of nutritional issues among Italian oncologists. Unfortunately, despite the increased participation, results from both surveys were almost comparable and confirmed that nutritional practices in oncology are still largely inappropriate. Moreover, patients reported an even less satisfactory picture.

In particular, nutritional assessment was confirmed to be carried out at diagnosis by less than 30% of oncologists, while only 14% of patient affiliates reported its implementation. As in the 2016 exploratory survey, validated nutritional screening tools were reported to be used in 16% of Oncology Units, while only 8% of patient affiliates declared their availability.

Nutritional support was managed by Clinical Nutrition Units/specialists only for 31% of FAVO associates, while more than 65% of oncologists, as in 2016, reported the active presence of clinical nutritionists. Similarly, more than 60% of oncologists reported that patients receiving HAN are followed up by Clinical Nutrition Units/specialists, whereas the same percentage of patient affiliates did not know who is in charge of HAN prescription and monitoring. Finally, the development of specific regional and national shared care protocols, rather than educational programs was identified as the possible key factor for improving nutritional support management, by almost 70% of oncologists.

Our findings are in line with those reported by similar studies⁵⁻¹⁶ and are also strengthened by recent retrospective investigations.²²

In 2019, the European Cancer Patient Coalition conducted a survey in Italy, Spain and Greece,⁶ with the purpose of investigating the frequency of feeding problems, along with physicians' grasp of the problem and their approach to nutrition among 907 cancer patients, who felt that inadequate attention had been paid to their nutrition: 45.7% believed their oncologists considered cancer-related weight loss unimportant and only 35% had their weight measured. Moreover, 62.7% did not receive any advice on how to increase their appetite and how to improve nutritional status.

A very similar discouraging situation was revealed by the AIOM-SINPE-FAVO-Fondazione AIOM Working Group 2018 survey, conducted in order to assess changes in food habits among 1257 cancer patients: although almost 90% expressed a strong desire to receive more nutrition-related information directly from the center where they were receiving treatment, nutritional counseling within the hospital was available for only 15% of the participants, while just 26% received general nutritional information from their oncologists.⁷

Two recent nationwide web-based surveys on nutritional support practices conducted in Germany confirmed the considerable gap between clinical needs and actual delivery of nutritional support in oncology.^{9,12}

According to Erickson and Colleagues,⁹ only 32.6% of oncologists and 37.2% of oncology nurses reported the existence of nutritional counseling guidance; around 25% of oncologists and nurses reported the availability of continued nutritional care for patients.

In the survey conducted by Maschke et al on 1335 patients,¹² although 69% reported having received information on nutrition and/or specific nutrition-related symptoms, only 5.7% male and 12.5% female patients reported receiving nutrition counseling.

Most of the other similar surveys showed comparable results (Table 1), with the exception of those carried out in the Swiss Hematology centers¹¹ and in France.⁸

The Swiss qualitative survey on nutritional screening and support in patients undergoing allogeneic or autologous hematopoietic stem cell transplantation showed that 70% of Hematology centers used a validated malnutrition screening tool (NRS 2002) and only 10% did not provide nutritional support.¹¹ Nevertheless, a wide variation in the use of nutritional therapy in patients undergoing hematopoietic stem cell transplantation was detected, with poor adherence overall to current practice guidelines.

A multicenter cross-sectional survey on the prevalence of malnutrition conducted in different French oncology departments using patient-(n = 2071), relative-(n = 976), and physician-(n = 2197) specific questionnaires indicated that nutrition interventions were recalled by 81% of patients, 84% of relatives, and 69% of oncologists.⁸

Overall, the findings of the present survey and those from the available literature indicate that, in spite of recent educational, institutional and scientific initiatives and despite malnutrition being perceived as a limiting factor in oncologic treatments by both oncologists and patients, there is still a considerable gap between need and actual delivery of nutrition care services. Adherence to international guidelines and recommendations is low, which limits access to high-quality nutrition therapy during and after cancer therapy.

The current general situation may have negative consequences not only on clinical outcomes, but also on the distress suffered by patients, their families and their caregivers.²³

Even if there are still few clinical studies showing the efficacy of nutritional support in patients receiving anticancer treatment,²⁴⁻²⁸ nowadays there is a wide agreement that early consultation with a professional (physician and dietitian) with documented skills in clinical nutrition is beneficial during treatment^{3,4,29-31} as well as in patients with advanced stages of disease.³²⁻³⁴

Conclusions

In conclusion, our survey confirms that there is still a marked gap between need and actual delivery of nutrition care in Oncology. Nutritional screening and support are essential elements in cancer care, while waiting for more robust clinical data on the value of appropriate nutri-

tional therapy, which would definitively convince the international medical community of its importance, further more effective initiatives are urgently needed, in order to guarantee to all cancer patients the right to receive prompt and adequate nutritional support. These may include educational media campaigns on nutrition in oncology, addressed not only to the health-care professionals, but also to the public opinion; the development and dissemination of specific standardized protocols for the management of nutritional support in different clinical settings; the implementation of reimbursement policies aimed at making nutritional screening and assessment mandatory since the first oncologic visit.

CRediT authorship contribution statement

Riccardo Caccialanza: Conceptualization, Writing - original draft, Writing - review & editing, Supervision. **Federica Lobascio:** Writing - original draft, Writing - review & editing, Supervision. **Emanuele Cereda:** Conceptualization, Methodology, Writing - review & editing, Supervision. **Giuseppe Aprile:** Conceptualization, Supervision. **Gabriella Farina:** Conceptualization, Supervision. **Francesca Tracì:** Investigation, Data curation. **Valeria Borioli:** Data curation. **Marilisa Caraccia:** Data curation. **Annalisa Turri:** Data curation. **Francesco De Lorenzo:** Investigation, Data curation. **Paolo Pedrazzoli:** Conceptualization, Supervision.

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