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Original Article

Exploring the barriers to diagnosing malnutrition in patients with cancer: A study on oncologists' perspectives

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SUMMARY

Background and aim: Patients with cancer are at high risk of malnutrition, yet relevant ICD-10 codes for malnutrition are underutilized in cancer clinics. Understanding oncologists' perspectives is crucial for optimizing malnutrition diagnosis codes and enhancing nutritional practices to improve patient care. This study aims to explore oncologists' perspectives on the use and feasibility of the ICD-10 codes for malnutrition.

Methods: A qualitative study was conducted, consisting of four focus group interviews with oncologists (n=14) from three Norwegian hospitals. A semi-structured interview guide, covering five main topics, guided the discussions.

Results: Few oncologists were familiar with the malnutrition diagnosis codes. The codes were considered inapplicable in clinical practice, partly due to complex diagnostic criteria. None used the codes systematically, instead relying on inquiries about patients' weight, weight loss, food intake, and appetite. Oncologists

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prioritized identifying patients in need of nutritional treatment, considering diagnosis codes unnecessary for providing quality care. Proposals for increased code utilization included economic incentives, enhanced collaboration with clinical dietitians, and digital systems for automated coding.

Conclusion: The oncologists expressed that they prevent and treat malnutrition in patients with cancer, but not systematically. They do not utilize ICD-10 codes for malnutrition, citing both complex diagnostic criteria and the codes' lack of relevance to nutritional treatment as limiting factors.

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1. Introduction

International studies indicate that the prevalence of cancer-related malnutrition ranges from 9% to 85%, depending on tumour location, disease stage and cancer treatment regimen [1–12]. Additionally, approximately 30% of all hospitalized patients, regardless of diagnosis, are malnourished [10,13–16]. Despite this high prevalence rate, data suggest that only a small percentage of adult malnourished patients are actually assigned a diagnosis code for malnutrition [16–19]. Underreporting malnutrition diagnosis codes leads to inaccuracies in disease and mortality statistics, loss of income for the health care services, and most importantly, the risk that patients may not receive essential treatment [17,19].

Currently, malnutrition diagnoses are documented with medical codes from the “International Statistical Classification of Diseases and Related Health Problems, 10th Revision” (ICD-10) [20]. Healthcare providers use medical codes from the ICD-10 to document concise and systematic information about diagnosis, procedures, and medical services relevant to the patients' contact with the healthcare system. Furthermore, medical coding is the basis for reimbursement and supports research, health statistics and resource planning in the healthcare trusts [20]. Patients frequently receive several medical codes from the same appointment or hospitalisation, and a cancer diagnosis can, for instance, be coded as a primary diagnosis, while malnutrition can be coded as a secondary diagnosis.

Possible reasons for limited use of malnutrition diagnosis codes include lack of awareness and competence among healthcare professionals, unclear responsibilities, and crucially, the absence of a unified definition and agreed-upon diagnostic criteria for malnutrition in clinical practice [21–25]. The Global Leadership Initiative on Malnutrition (GLIM) was launched with an aim to establish a global consensus on the diagnostic criteria for disease-related malnutrition [25,26]. One of the key distinctions between the GLIM and the ICD-10 malnutrition diagnosis codes is the clearly defined criteria and cut-off values [25]. The Norwegian adaptation of the ICD-10 malnutrition diagnosis codes, however, has had clearly defined criteria and cut-off values since 2009 (Figure 1). Despite this, the malnutrition diagnosis codes are seldom used in Norwegian cancer clinics, with only 4% of inpatients being diagnosed with malnutrition even though about 30% are malnourished or at risk [18]. This makes Norway an interesting context for examining the usage and implementation of diagnostic criteria for malnutrition.

Understanding oncologists' views is crucial for improving nutritional practices and optimizing malnutrition diagnosis codes, in order to enhance code utilization and consequently improve patient care. In this qualitative study, we explore oncologists' perspectives on the use and feasibility of the ICD-10 codes for malnutrition.

2. Materials and methods

2.1. Context

The International Statistical Classification of Diseases and Related Health problems (ICD) is developed and managed by the World Health Organization (WHO) and serves as the international standard for health and disease recording. It is also utilized for mortality statistics, reimbursement and resource allocation in the healthcare system [27,28]. Despite the implementation of ICD-11 in 2022, ICD-10 remains the applicable version in many countries. Norway is among the countries that have adapted ICD-10 to enhance its national applicability. It is used to code diseases and conditions in specialized healthcare services, as well as for reporting causes of death in both specialized and primary healthcare services [29]. Healthcare personnel, including medical doctors, are responsible for recording diseases and conditions using the ICD-10, as correct coding is fundamental for the quality of health data and statistics. Additionally, reported patient diseases and conditions serve as the basis for activity-based funding, which is a financial support provided to Norwegian Regional Health Authorities through the National Budget. Activity-based funding and basic grants cover specialized somatic health services, including hospital admissions, outpatient evaluations and treatments, as well as in primary care [30]. In Norway, basic grants cover 60% of specialized health services funding, with activity-based funding covering the remaining 40% [29].

2.2. Study design and participants

A qualitative approach was employed to obtain in-depth descriptive data. Four semi-structured focus group interviews were conducted between October and December 2022, with a total of fourteen senior physicians specialized in oncology. Participants were recruited through email or face-to-face contact from three University hospitals and various cancer specialties to ensure a comprehensive discussion in the focus groups.

The interviews aimed to explore oncologists' perspectives on barriers to using the ICD-10 diagnosis codes for malnutrition. The discussion was led by a semi-structured interview guide consisting of five main topics: 1) Malnutrition, 2) Mapping/Screening, 3) ICD-10 diagnosis codes for malnutrition, 4) Underreporting of the malnutrition diagnosis codes, and 5) Revision of the diagnosis codes. During the interviews, the oncologists were presented with the current Norwegian adaptation of the ICD-10 diagnosis codes for malnutrition (Figure 1). The GLIM criteria (Figure 1) were also presented to initiate the discussion on the possible need to revise the diagnosis codes for increased use. All interviews were conducted by the first and second author, lasted between 50 and 95 minutes with 3–4 participants in each group, and were audiotaped and transcribed verbatim.

2.3. Data analysis

For analyses of data collected during the interviews, the following steps of systematic text condensation [31] – a thematic cross-case analysis – were performed:

1. **Total impression.** Transcribed material was read to get an overall impression and overview of the data. Preliminary themes were noted.
2. **Identifying and sorting meaning units.** Transcribed material was uploaded into the analysis program NVivo. Meaning units, i.e., text with information relevant to the issue, were sorted into code groups and subgroups based on the preliminary themes.
3. **Condensation.** Code groups were reviewed and reorganized, and the names adjusted. Condensates, i.e., artificial quotations that convey the essence of each code group and subgroup, were written based on the meaning units.
4. **Synthesizing.** Condensates were used to create analytical texts from each subgroup, to design a synthesis and present our new understanding. The analytical texts are illustrated with participant quotations.

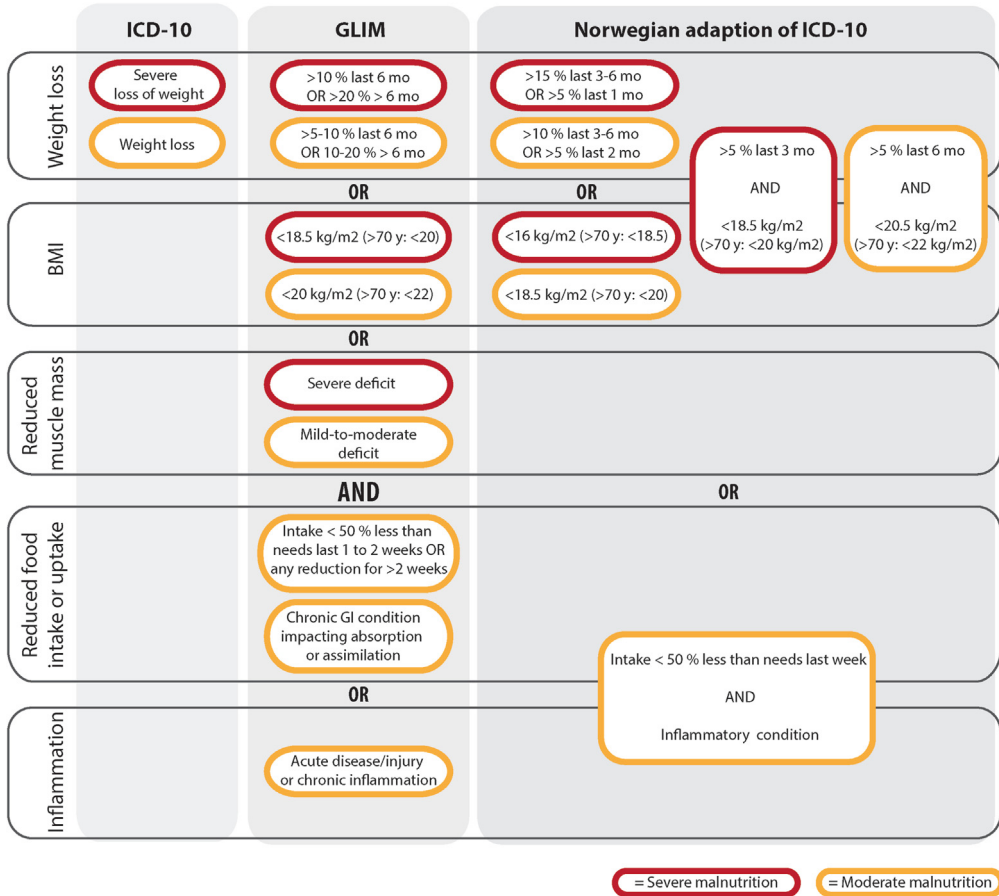


Figure 1. The diagnostic criteria for malnutrition defined by ICD-10 diagnosis codes, Norwegian adaptation of the ICD-10 codes, and the GLIM criteria. The ICD-10 include the diagnoses E43 *Unspecified severe protein-energy malnutrition* and E44 *Protein-energy malnutrition of moderate and mild degree*, with the criteria based on weight loss and severe weight loss. In the GLIM criteria, there are two diagnoses for malnutrition: *moderate malnutrition* and *severe malnutrition*. However, the initial step in applying the GLIM criteria is screening for risk of malnutrition. The Norwegian adaptation of the ICD-10 codes for malnutrition include the codes E46.00 *Risk of malnutrition*, E44.00 *Moderate malnutrition* and E43.00 *Severe malnutrition*. Validated screening tools are utilized to assess the risk of malnutrition and use the code E46.00 for *Risk of malnutrition*. Abbreviations: ICD-10 = International Statistical Classification of Diseases and Related Health Problems 10th Revision; BMI = Body Mass Index; GI condition = gastrointestinal condition.

To maximise trustworthiness and limit threats to validity, we employed the criterion for trustworthiness outlined by Lincoln and Guba [32]. We ensure credibility through open-ended questioning, consistent use of the same moderator in interviews, thorough immersion in the material, and detailed methodological descriptions. To enhance transferability, we provide contextual information, detailed data, and participant quotations. For dependability, both the first and second author oversaw every methodological step and reached final interpretations through mutual agreement. Confirmability is achieved by presenting rich participant quotes that illustrate each thematic aspect. Additionally, we adhere to the consolidated criteria for reporting qualitative studies (COREQ) [33].

2.4. Reflexivity

Ensuring reflexivity in research involves acknowledging the researcher's position, including potential biases. In this study, the primary moderator of the interviews was the first author, a clinical dietitian, which could influence interpretation due to their interest in malnutrition diagnosis codes. However, the interviews adhered closely to a predetermined interview guide developed collaboratively by five authors. The moderator strived for neutrality and welcomed criticism of the diagnosis codes. Importantly, there were no prior relationships between the moderator and oncologists, ensuring minimal power dynamics that might inhibit open discussion.

2.5. Ethical considerations

The Regional Committee for Medical and Health Research Ethics concluded that no formal ethical approval was required for this study. The processing of personal data was approved by the Norwegian Agency for Shared Services in Education and Research. Data protection officers at the each of participating hospitals accepted the study and handling of data. Written informed consent was obtained from all study participants.

3. Results

Fourteen oncologists, comprising eight men and six women, employed at three Norwegian University hospitals, participated in one of the four focus groups. The types of cancers primarily treated by the oncologists are listed in Table 1.

The oncologists reported finding it challenging to address malnutrition. Some emphasized the difficulty of having insufficient treatment options for managing both cancer and malnutrition, expressing concerns about the inadequacy of available treatment modalities for addressing both issues simultaneously. One oncologist described malnutrition as a condition which is often a part of the cancer disease progression, suggesting that nutritional treatment may be ineffective until the cancer has been cured. Despite this, the oncologists emphasized the importance of preventing and treating malnutrition whenever possible. Although the oncologists did not use specific tools to assess malnutrition, they routinely inquired about patients' weight, weight loss, food intake, and appetite. The focus group interviews with oncologists revealed three main topics regarding the use of malnutrition diagnosis codes, which are presented as the main results: 1) Reasons why oncologists do not use malnutrition diagnosis codes, 2) Strategies for making the malnutrition diagnosis codes more applicable, and 3) Suggestions for increasing the use of malnutrition diagnosis codes. These main topics are further categorized into subgroups, presented as constructed quotes to condense the essential content.

Table 1
Participants

Table with 3 columns: Focus group no., Participant no., and Cancer mainly treated. It lists 14 participants grouped into four focus groups and their primary cancer treatments.

3.1. Reasons why oncologists do not use malnutrition diagnosis codes

Few oncologists were familiar with the Norwegian ICD-10 codes for malnutrition, and none used them systematically. During the interviews, four main reasons emerged: 1) Malnutrition diagnosis codes do not contribute to the hospital's financial income, 2) We prioritize identifying the patients who require nutritional treatment over coding the diagnosis, 3) All our patients would get a malnutrition diagnosis code, and that makes no sense, and 4) The codes consist of too many diagnostic criteria.

3.1.1. Malnutrition diagnosis codes do not contribute to the hospital's financial income

The oncologists clarified that medical diagnosis codes in general, including those for malnutrition, primarily serve reimbursement purposes and have minimal impact on patient treatment. They noted that using secondary diagnoses, such as malnutrition, does not lead to reimbursement in outpatient clinics. Therefore, it is apparently unnecessary when the patients are regularly coded with a cancer diagnosis as the primary diagnosis. Additionally, they mentioned that these codes are not commonly used to retrieve information about patients' conditions and diagnoses. Instead, if malnutrition is addressed, it should be written in the medical health record.

No one really uses those codes to read about the patient's condition. The codes are primarily a tool for financial purposes and reimbursement. And they're often not very prominent when you review the patient record, I would say. (...) Additionally, I mostly work in the outpatient clinic, where there isn't much reimbursement for secondary diagnoses. So, it doesn't really make much sense to use the codes there. But you should definitely consider using them for inpatients, as they [the diagnosis codes] can lead to significant additional reimbursement. So, it's important. (Participant 2).

3.1.2. We prioritize identifying the patients who require nutritional treatment over coding the diagnosis

The majority of oncologists expressed that they do not consider the underreporting of diagnosis codes as a significant issue. Their primary concern is ensuring that patients in need of nutritional treatment are identified and receive the necessary care, and for this, they do not consider coding necessary.

I think that whether they [the patients] get that diagnosis code or not, that doesn't feel like a problem. The problem is if you miss a condition that needs to be treated, which will improve the quality of life or prolong life. (Participant 13).

The oncologists omitted a detailed discussion regarding the precise methodology necessary for accurately identifying patients

with malnutrition or those requiring nutritional treatment but expressed that using malnutrition diagnosis codes was not a way of ensuring this.

But is it a goal in itself to use the codes more? And if so, why is that? The goal is that something should be done about it [malnutrition], right? Not to use a code. (Participant 7).

3.1.3. All our patients would get a malnutrition diagnosis code, and that makes no sense

The oncologists noted that a significant proportion of their patients fulfil multiple criteria for a malnutrition diagnosis, both moderate and severe. While they acknowledged the relevance of the codes and criteria for their patient group, they also observed that most of their patients would likely qualify for a malnutrition code, raising doubts about the codes' applicability. It could lead to difficulties distinguishing between patients who require nutritional intervention and those who do not.

But they [the codes/criteria] are not very user-friendly. Because a very large proportion of our patients would receive the diagnosis. And then the question is whether you should be aware of that [malnutrition] and discuss it [with the patient]. But I doubt if applying "risk of malnutrition" to all patients would have ..., if that would have done any good. (Participant 4).

3.1.4. The malnutrition diagnosis codes consist of too many criteria

The oncologists opine that the current set of criteria for assessing malnutrition is overly complex and should be simplified to be applicable in clinical practice. One oncologist advocated that the weight loss criteria alone would be sufficient. Several agreed that the criteria for weight loss as described in the Norwegian adaptation of the ICD-10 codes, were reasonable and relevant for clinical use. Conversely, criteria concerning BMI and nutrient intake relative to energy requirements were regarded as more intricate and not directly relevant for the oncologists' clinical practice.

*Yes, I think that a simpler tool ..., I agree with *Participant 3*, a simpler differentiation. And for me, it is weight loss, which we use in studies, weight loss of over 5% or 10%, over 3 or 6 months. (Participant 1).*

In clinical setting, this is far down on the priority list, and it is likely to stay that way. (...) If it becomes too complex, there's a risk of overlooking what needs to be recognized, because we may give up before we even start, as it's just too challenging. (Participant 5).

3.2. Strategies for making the malnutrition diagnosis codes more applicable

The oncologists were asked to consider how to enhance the applicability of malnutrition diagnosis codes in clinical practice. They found both the ICD-10 codes and GLIM criteria to be comprehensive approaches for diagnosing malnutrition, with ambitious differentiations – even in a research context. However, they believed that none of the existing codes are suitable for clinical practice. One suggestion for revision was to reduce the number of malnutrition-related codes by merging them, such as combining “risk of malnutrition” and “moderate malnutrition”, or merging “moderate” and “severe malnutrition”.

3.2.1. The GLIM criteria – ‘These criteria aren't notably better’

The GLIM criteria were discussed in the interviews to explore whether the oncologists believed that revising the current ICD-10 codes could enhance their applicability in clinical practice, and thereby increase their usage. One oncologist noted that the GLIM criteria encompass the development of malnutrition to a greater extent than the criteria in ICD-10. However, the oncologists expressed doubts that the new diagnostic criteria would lead to increased use of malnutrition diagnosis codes in clinical practice.

I think that the GLIM criteria are adequate for understanding of the various causes of weight loss, but in terms of coding, perhaps they are not very important? I don't know. Maybe. (Participant 4)

(...) I still find it somewhat ambitious. But it's possible that I'm just very simple. (Participant 1)

3.3. Suggestions for increasing the use of malnutrition diagnosis codes

At the end of the interviews, the oncologists deliberated on suggestions for enhancing the use of current diagnosis codes for malnutrition. While the oncologists did not personally express a strong interest in augmenting medical code use, they actively engaged in a discussion regarding various potential measures to achieve this objective. Specific proposals included economic incentives, enhanced collaboration with clinical dietitians, and the implementation of a digital system for automated coding, as well as a discussion regarding increased screening for malnutrition.

3.3.1. Economic incentives – ‘If it was important for the hospital's income, I would use the codes’

The majority of the oncologists described that medical codes serve as means to generate income for the hospital. It was suggested that an increase in hospital income from the utilization of malnutrition diagnosis codes might incentivize greater use. However, the oncologists appeared sceptical about whether financial incentives would actually lead to increased utilization of the malnutrition diagnosis codes.

If it was important for the income for the hospital, then of course ..., you are required to use that diagnosis code. Then you must use it to a greater extent, for sure. (Participant 7).

3.3.2. Collaboration with clinical dietitians – ‘Clinical dietitians are an important resource’

Collaboration with clinical dietitians was a recurring topic in all the interviews. The oncologists described that they are aware of patients with nutrition-related challenges and refer to clinical dietitians when necessary. However, clinical dietitians were considered a limited resource, leading the oncologist to self-restraint in referrals, prioritizing patients with the most significant nutritional challenges to clinical dietitians, described to often be those undergoing curative treatments. Several oncologists mentioned that the nutrition work improved with the presence of a clinical dietitian at the oncology ward, but they were unsure if the code use increased.

I am very pleased to have the assistance of clinical dietitians, which significantly lessens our workload and clearly improves the quality of patient care. At least that's my experience. (Participant 3).

One oncologist

explained that all their patients are referred to a nutrition outpatient clinic, where clinical dietitians treating malnutrition are responsible for assigning diagnosis codes, and therefore ensured malnutrition diagnosis code usage.

I would be very surprised if the clinical dietitian does not use a malnutrition diagnosis code. When I know that the patient has had involuntary weight loss, of a certain amount, and then they don't receive the diagnosis I had in mind [from the clinical dietitian], I would be very surprised, you know. But that has never happened. I haven't noticed it. (Participant 11).

3.3.3. Digital system for automated coding – ‘It must be easy to use the codes’

In several interviews, the concept of a digital system capable of automatically generating codes from the information in medical records was discussed as a potential tool to facilitate the use of diagnosis codes. While some oncologists showed optimism about codes generated by the patient record system, others expressed scepticism, citing concerns about potential additional workload associated with automatically generated diagnosis codes.

But I am also a little concerned that the medical record system presents us with an extensive amount of synthesized data and risk profiles that requires intensive review and decision-making. Now we eliminate unnecessary information by screening the patients' problems, write down the questions we have, and decide what to focus on. (Participant 1).

3.3.4. More screening – ‘The more you screen, the more you use the diagnosis codes’

Oncologists from one hospital strongly agreed that increased screening for malnutrition would lead to increased use of the diagnosis codes for malnutrition. None of the oncologists from the other hospitals mentioned this in their interviews.

If the goal is increased code use, then you need to systematically screen [for risk of malnutrition]. Then you get high code usage. And then the question is whether it also leads to a high degree of good treatment of malnutrition. Or if it will only be coding and not much more. (Participant 12).

4. Discussion

The main findings highlight the need to simplify malnutrition diagnosis codes by reducing their complexity in terms of the number of codes and criteria included. Additionally, there is a need to enhance awareness about the importance of the malnutrition diagnosis codes. The oncologists interviewed rarely utilized tools to assess risk of malnutrition or ICD-10 diagnosis codes for malnutrition. They asserted the diagnosis codes as too comprehensive for clinical practice and minimally relevant in patient treatment. Concerning diagnostic criteria, they emphasized the clinical relevance of factors

such as weight loss, appetite, and food intake, stressing the importance of prioritizing these aspects in nutritional assessments. The perceived lack of benefits linked to using diagnosis codes diminished the focus on medical coding for malnutrition, especially when oncologists are already prioritizing other pressing concerns before coding. Suggestions to enhance code utilization included collaboration with clinical dietitians and implementing a digital system. At the same time, skepticism was expressed regarding the effectiveness of GLIM criteria in bolstering code utilization, citing concerns about their comprehensiveness.

Cancer patients with malnutrition experience prolonged hospital stays and more frequent readmissions, leading to higher healthcare costs [14,34–49]. The oncologists recognized the financial importance of medical codes for hospitals, considering them vital for securing institutional income. This aligns with findings by the Office of the Auditor General of Norway (OAG), showing that doctors at Norwegian health institutions prioritize institutional income through medical coding [50]. However, the oncologists in our study expressed scepticism about the financial benefits of using malnutrition diagnosis codes, particularly in outpatient settings where secondary diagnoses like malnutrition have minimal impact on reimbursement beyond primary diagnosis provisions. Yet, the diagnosis codes have a role beyond finances, as they serve to document patients' conditions and healthcare received [20]. Accurate coding enhances data reusability, aid national registers used for activity-based funding, research, medical advancement, and quality improvement [29]. Underreporting malnutrition codes can lead to inaccurate health statistics, impacting effective healthcare planning. Interestingly, the OAG survey revealed that doctors perceived less emphasis from hospital management on the importance of medical codes for patient statistics, research, and healthcare service management [50]. Despite limited use of ICD-10 codes for malnutrition in electronic health records, oncologists often prescribe nutritional treatments based on malnutrition diagnoses, indicating a discrepancy between acknowledgment and documentation. This practice aligns with findings indicating underreporting of malnutrition diagnoses and insufficient documentation of nutritional practices in hospitals [51].

Refinement of diagnostic criteria for malnutrition is ongoing and underscores the importance for practitioner involvement in future revisions. In our study, oncologists highlighted the relevance of weight loss criteria in clinical settings, finding BMI and dietary intake criteria overly complex and less directly applicable. They questioned the necessity of three distinct malnutrition diagnosis codes and advocated for simplification (currently *E46.00 Risk of malnutrition*, *E44.00 Moderate malnutrition* and *E43.00 Severe malnutrition*). The GLIM criteria [25] propose two diagnoses, moderate and severe malnutrition, with risk of malnutrition serving as a screening step before diagnosis assessment. However, most oncologists doubted the utility of adopting the GLIM criteria, suggesting their comprehensive nature might not align well with clinical practice. This highlights the need for diagnostic criteria to balance between comprehensiveness and practicality, ensuring they are both clinically relevant and user-friendly for practitioners.

While the necessity to enhance nutritional practices in hospitals is evident [16], oncologists expressed scepticism as to whether increased code utilization would improve malnutrition treatment outcomes. They acknowledged the positive impact of having a clinical dietitian available on the ward, which is consistent with previous studies highlighting the pivotal role of clinical dietitians in improving nutritional care quality and identifying malnutrition in patients [52,53]. Additionally, healthcare professionals who regularly collaborate with clinical dietitians find it easier to identify patients with malnutrition [54]. However, due to limited availability of clinical dietitians, oncologists mentioned a tendency to prioritize referrals for the most complex cases of patients with nutritional challenges.

Similar to our findings, the lack of integrated electronic systems has been suggested as a barrier to systematic nutrition practices [55]. The oncologists proposed automatically generating diagnosis codes from patient record data on factors such as weight loss or BMI. However, some expressed concerns about potential noise from such approach. Patients often have comorbidities and other cancer-related issues addressed and managed in outpatient clinics without specific codes assigned, leading oncologists to prioritize certain issues over others in practice, which may not be reflected in coding. Integrating electronic user support for nutrition variables could enhance code utilization and potentially improve coding practices [18].

4.1. Implications

Accurate malnutrition diagnosis coding enable healthcare facilities to effectively monitor and compare malnutrition prevalence across settings and countries, advocating for increased funding for prevention and treatment initiatives [56]. Improved code utilization can increase awareness and treatment among healthcare providers, potentially leading to better patient outcomes and quality of life. Nevertheless, the increased utilization of diagnosis codes presents several challenges in patient care. Firstly, the lack of consensus on diagnostic criteria lead to imprecise assessments. Additionally, characterizing patients as malnourished may imply a need for treatment, but the choice of measures and the intent of the treatment must be individualized based on diagnosis, prognosis, and personal preferences. This could result in communication challenges with both patients and caregivers. Simplifying metrics, such as focusing on weight loss, appetite, and food intake, and refining the classification and coding of refractory conditions like cachexia, might offer more precision. An intensified focus on diagnostic coding, particularly influenced by economic incentives, may divert attention from patient-centred care, potentially undermining the intended purpose of improved coding practices.

4.2. Strengths and limitations

Oncologists from three hospitals were recruited to provide a diverse dataset, capturing potential variations in malnutrition diagnosis coding practices influenced by hospital environments, e.g., collaboration with clinical dietitians and experience with different cancer types. While a larger sample could have explored the impact of specific hospitals or cancer types, small focus groups of 3–4 participants allowed for better conversation control, audio quality, and in-depth data collection [57–59].

Focus group interviews are valuable for complex research questions and revealing common perspectives, although they risk missing divergent views without effective management of group dynamics [31,57]. In this study, the participants explicitly addressed the exploration of diverse perspectives that would not have emerged in individual interviews. Some participants talked more than others, reflecting variations in their willingness to elaborate and explain their opinions. Particular participants concurred with the perspectives shared by others, and many of their quotes are therefore only statements of agreement with no further content. Efforts were made to include quotes from most participants, at least quotes from all four interviews, to ensure representation of diverse voices. Analytical processes were discussed between first and second author, and adjustments were made in agreement, to ensure an ongoing reflexivity and credibility. Participant feedback was not obtained.

5. Conclusion

To the best of our knowledge, this study is the first to qualitatively explore oncologists' perspectives on the utilization and feasibility of ICD-10 codes for malnutrition. Despite assessing weight, weight loss, and appetite in patients with cancer, oncologists rarely use the designated ICD-10 codes for malnutrition due to perceived complexity and limited relevance to nutritional treatment. Addressing these barriers is crucial for optimizing patient care in oncology settings. Efforts should be made to streamline the criteria and emphasize the relevance of these codes in nutritional treatment strategies, and revise the codes to enhance usability, ultimately enhancing the quality of care provided to patients with cancer.

Informed consent

Written informed consent was obtained from all study participants.

Author contributions

The study was conceptualized and designed by TRB, and further developed together with LHK, KS and IOO. All authors participated in writing the protocol and/or conducting the study. LHK conducted the focus group interviews and analyzed all data together with KS. LHK, TRB, KS, IP and IOO drafted the

manuscript, while AB, BE and TSS critically revised the draft. All named authors meet the International Committee of Medical Journal Editors (ICMJE) criteria for authorship for this article, take responsibility for the integrity of the work as a whole, and have given their approval for this version to be published.

Ethics

The study was approved by the Norwegian Agency for Shared Services in Education and Research, and written informed consent was obtained from all study participants.

Data availability

The datasets generated and/or analysed during the current study are available from the corresponding author on reasonable request.

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Declaration of competing interest

The authors have no conflict of interest to declare.

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