Journal of
Qualitative Research in Health Sciences

https://jqr1.kmu.ac.ir
10.34172/jqr.2024.26
Vol. 13, No. 4, 2024, 177-186

Original Article

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Nutritional Challenges of Hospitalized Cancer Patients from the Perspective of Healthcare Professionals: A Qualitative Study

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Abstract

Background: The present study aimed to explore the nutritional challenges of hospitalized cancer patients from the viewpoint of healthcare professionals.

Methods: This qualitative content analysis study was conducted from June 2021 to February 2022 on a sample of nutritionists (researchers and faculty members), dietitians, nurses, and oncologists in various healthcare settings such as hospitals, private/public clinics, research centers, and universities in Tehran, Iran. Data were collected through semi-structured in-depth interviews, which continued until data saturation was achieved with a total of 16 participants. Data were analyzed using deductive-inductive content analysis to explore predefined deductive concepts from previous studies and inductive concepts from the interviews.

Results: After analyzing data via open coding, eliminating similar codes, and classifying the codes with similar concepts, six main themes emerged. The identified themes included *problems related to the nature of the disease and complications of treatment*, *carelessness about principles of cancer care*, *lack of awareness and education in patients and medical staff*, *executive shortcomings*, *planning and policy-making*, and *financial and support barriers*.

Conclusion: Nutritional problems of cancer patients are multidimensional and rooted in diverse challenging issues including problems related to the nature of the disease and treatment, financial barriers, manpower shortages, lack of awareness among patients and healthcare providers, shortcomings related to the healthcare management and executive issues, lack of inter-organizational cooperation, and the significant negative impact of severe economic sanctions. Solving these problems needs funding from the government, interdepartmental cooperation between medical universities, healthcare centers, and hospitals, comprehensive and evidence-based healthcare management at the national level, and international collaborations.

Keywords: Cancer, Nutritional challenges, Healthcare professionals, Content analysis

Citation: Jabbari M, Haghighian-Roudsari A. Nutritional challenges of hospitalized cancer patients from the perspective of healthcare professionals: a qualitative study. *J Qual Res Health Sci*. 2024;13(4):177–186. doi:10.34172/jqr.2024.26

Received: September 23, 2023, **Accepted**: July 14, 2024, **ePublished**: December 24, 2024

Introduction

Cancer patients encounter several complications of treatment which can affect their nutritional intake. Most of the time, cancer patients have poor dietary quality and consequent unintentional weight loss which can lead to cancer cachexia. All these have a critical role in the progression and success of treatment (1). Thus, it is important to integrate nutrition as a part of the treatment and management plan for cancer patients (2). Previous research showed that often medical teams do not care to include nutritional screening or dietary assessments in their evaluations (3,4). Therefore, the patients often obtain nutritional and dietary information from unreliable resources due to a lack of instructions on the nutritional management of cancer patients, encouraging them to apply some alternative methods such as fad diets or use certain supplements without any scientific basis.

Early supportive care can improve all aspects of disease-related complications, such as depressive syndrome, quality of life, and survival time (5). Nutrition, as a crucial component of such care, plays a significant and effective role in the outcomes of cancer treatments. Compared to developed countries, in the Asia-Pacific region, there are numerous challenges in meeting the standards of cancer care guidelines, particularly in hospital settings (6). According to global standards, people have the right to access high-quality healthcare to fulfill their health needs (7). Thus, providing appropriate, specialized, and timely nutrition care throughout the treatment process can be a determinant factor of treatment outcome (8). However, in practice, the nutritional guidelines for cancer patients are implemented poorly in medical care centers.

This deficiency can be attributed to the unawareness of healthcare staff about the importance of nutritional care and the absence of collaboration between physicians and dietitians (8).

Healthcare professionals and physicians are among the most important stakeholders in the medical care team who are deeply aware of the nutritional challenges faced by cancer patients. Regarding the importance of evaluating the nutritional needs of cancer patients as a critical part of their supportive care, understanding these needs and addressing them appropriately can offer valuable solutions for enhancing the quality of primary care for cancer patients. Accordingly, the current qualitative study aimed to explore the viewpoints and perceptions of healthcare professionals and the members of the medical care team (including oncologists, nurses, specialized physicians with relevant expertise, and dietitians) about the common nutritional challenges and related effective factors in cancer patients.

Methods

Study setting and participant selection

The current qualitative content analysis study was designed to explore the viewpoints of experts regarding cancer patients' nutritional problems. The study process is shown in Figure 1. This study was conducted from June 2021 to February 2022 among nutritionists (researchers and faculty members), dietitians, nurses, and oncologists in various clinical settings including hospitals, private/public clinics, research centers, and universities in Tehran, Iran. Participants were first selected using the purposive sampling method based on their involvement in cancer patient treatment. After explaining the objectives of the study and obtaining consent to participate, interviews were scheduled in coordination with the participants. All participants had valuable experience and insights as members of treatment or research teams working with cancer patients. The research team compiled a list of participants according to their knowledge, and after conducting interviews with each participant, sampling continued using the snowball method. Participants were asked to recommend other informant individuals in this field. The selection of participants continued until data saturation was achieved and no new information was added with further interviews.

Data collection and analysis

Following the identification of experts through purposive sampling, a meeting was scheduled at a time convenient for them. At the beginning of the meeting, the objectives of the study were explained and informed consent was obtained. The interviewees were assured that their information would remain confidential, and they were also permitted to record audio. Data were collected through in-depth semi-structured interviews using an interview protocol (Table 1). The interview questions were developed based on the insights from previous studies (9-11) and the knowledge of the research team. Additional questions were asked if necessary to clarify the issue. Each interview lasted an average of 30 minutes. The interviews were conducted by MJ (M.Sc.) and AHR (Ph.D.) and then, the audio recordings were transcribed verbatim into Microsoft Word to be imported into the data analysis software.

Content analysis was used to analyze the data, allowing for exploring predefined deductive concepts from previous studies and inductive concepts from the interviews. The Strauss and Corbin's coding strategy (12) was used for line-by-line data coding. First, the interview text was read carefully and the significant segments of the text were coded by MJ. Then, open codes were reviewed by MJ and AHR and similar codes were merged to establish the initial subthemes. The subthemes were conceptualized to explore the main themes using axial coding by AHR. Data management was done using MAXQDA software (2020 version).

Data rigor and trustworthiness

In the present study, data analysis was carried out concurrently with conducting the interviews to enhance the accuracy of subsequent interviews by identifying unclear points. Before starting the interviews, the researchers avoided reviewing the results of the previous studies (bracketing). The interviews were conducted by researchers experienced in qualitative studies and the text of the interviews was read several times by the main researchers. Furthermore, an effort was made to include participants with diverse experiences related to cancer patients. The steps of the study were assessed during consultation meetings with the members of the research team and all steps were supervised by an experienced person in qualitative studies (AHR). All research steps were recorded in detail and participants' quotes were used to conceptualize subthemes and themes.

In the present study, the criteria proposed by Lincoln and Guba were used to ensure data trustworthiness (13). In this regard, to achieve credibility and prolonged engagement, an effort was made to include participants with diverse experiences related to cancer patients. Moreover, interviews, memoing, and documentation were considered for collecting the data (Triangulation). The interviews were conducted by researchers experienced in qualitative studies and the text of the interviews was read several times by the main researchers. The steps of the study were assessed during consultation meetings with the members of the research team. Data analysis was carried out concurrently with conducting the interviews to enhance the accuracy of subsequent interviews by identifying unclear points. Inquiry audit was conducted in all steps including design, data collection, and

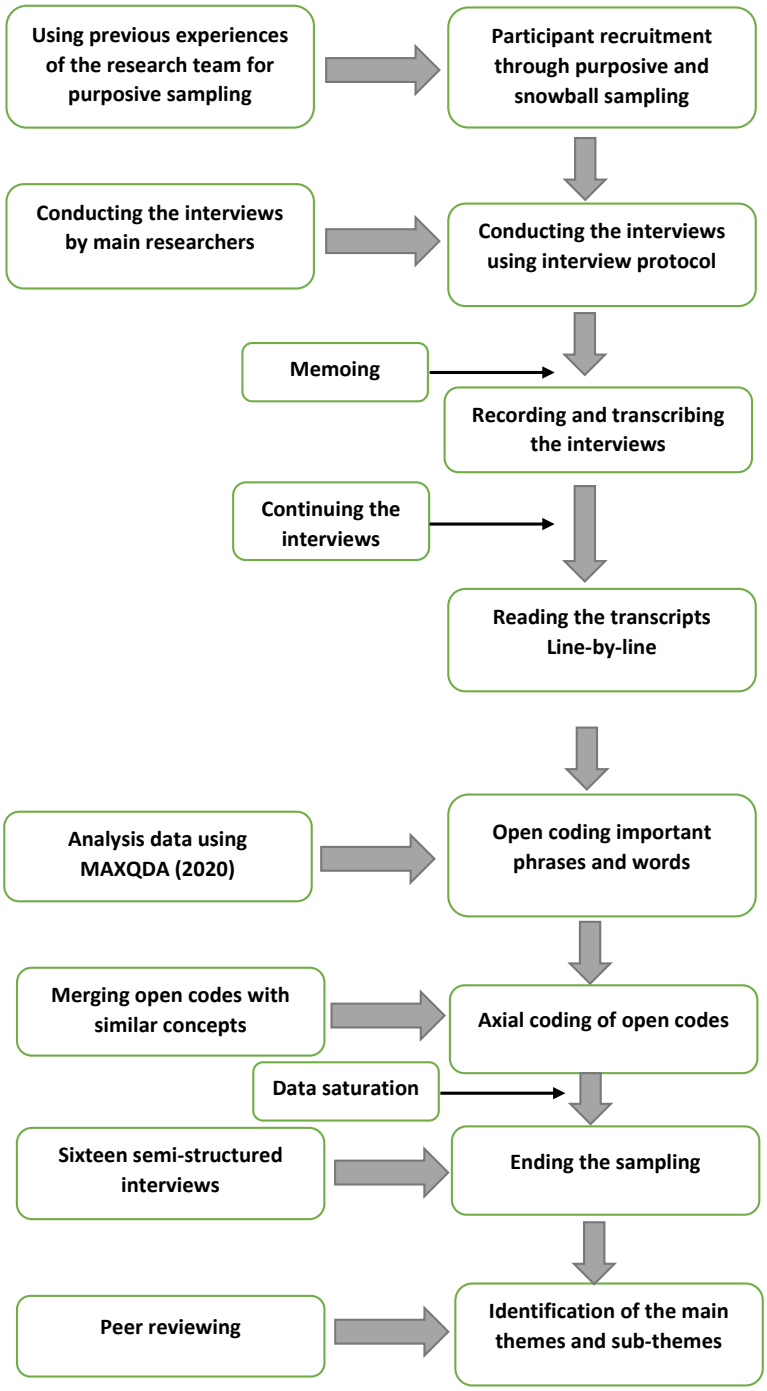

Figure 1. Study flow diagram

data analysis under the supervision of an individual experienced in qualitative studies (Dependability). To ensure confirmability, before starting the interviews, the researchers avoided reviewing the results of the previous studies (bracketing). All research steps were recorded in detail to facilitate data retrieval and review as needed. Moreover, to enhance transferability, purposive sampling was used and a clear description of the characteristics of the participants, data collection, and analysis process was provided (Thick description). For a better understanding of the conceptualization of the data, the findings of the study were presented in the form of appropriate quotations. Besides, the research findings were reported according to the Qualitative Research Review Guidelines (RATS) (14).

Results

A total of 16 participants (14 females and 2 males) participated in the present study. Participants' characteristics are shown in Table 2. Six main themes

Table 1. Semi-structured interview protocol

Question	Purpose	Content
Opening	Explaining the study objectives and details, obtaining written informed consent, and asking for permission to record the interviews	Introduction to the interview
1	Explaining common nutritional problems faced by cancer patients from the viewpoint of experts and members of the medical team	In your opinion, what are the most important and common nutritional problems faced by cancer patients undergoing treatment?
2	Identifying the most important nutritional problems and complaints of patients presenting to the medical team	What complaints do patients usually express about their nutrition in the hospital?
3	Identifying the factors influencing the nutritional problems of cancer patients from the viewpoint of experts and the treatment team	What factors do you think are influential in causing these problems?
4	Identifying the obstacles to providing patients with proper nutrition	In your idea, what are the obstacles to improving the nutritional status of these patients?
5	Knowing the solutions proposed by experts and the members of the treatment team to reduce the nutritional problems of cancer patients	In your opinion, what solutions are there to improve the nutritional status of cancer patients?
6	Identifying key stakeholders to solve patients' nutritional problems	Whose role do you consider to be effective in solving nutritional problems of patients?
Ending	Identifying additional informants through snowball sampling	Would you recommend any other individual whom we can consider for an interview on this issue?

Table 2. Demographic characteristics of participants

Participants	Gender	Age (y)	Occupation	Field of study	Education level	Place of work	Member of the cancer treatment team
P1	Female	29	Nurse	Nursing	Bachelor's degree	Hospital	Yes
P2	Male	32	Nurse	Nursing	Bachelor's degree	Hospital	Yes
P3	Male	40	Faculty member	Nutritional Sciences	PhD	University	Yes
P4	Female	33	Head nurse	Nursing	Bachelor's degree	Hospital	Yes
P5	Female	28	Nurse	Nursing	Bachelor's degree	Hospital	Yes
P6	Female	38	Oncologist	Medicine	Sub-specialty	Hospital	Yes
P7	Female	41	Nutrition unit manager	Nutritional Sciences	Bachelor's degree	Hospital	Yes
P8	Female	32	In charge of educating university students in oncology ward	Nursing	PhD	Hospital	Yes
P9	Female	40	Faculty member	Nutritional Sciences	PhD	University	No
P10	Female	43	Nurse	Nursing	PhD	Hospital	Yes
P11	Female	34	Nutrition unit manager	Nutritional Sciences	Bachelor's degree	Hospital	Yes
P12	Female	45	Faculty member	Nutritional Sciences	PhD	University	Yes
P13	Female	34	Nutrition consultant	Nutritional Sciences	PhD	University	Yes
P14	Female	40	Researcher	Nutritional Sciences	Bachelor's degree	Research center	Yes
P15	Female	43	Researcher	Nutritional Sciences	Master's degree	Research center	Yes
P16	Female	42	Nutrition consultant	Nutritional Sciences	Master's degree	Hospital	Yes

and seventeen subthemes were identified after analyzing data via open coding, eliminating similar codes, and classifying codes with similar concepts. The main themes included *problems related to the nature of the disease and complications of treatment*, *carelessness about principles of cancer care*, *lack of awareness and education in patients and medical staff*, *executive shortcomings*, *planning and policy-making*, and financial and support barriers. All six main themes and seventeen sub-themes are represented in Table 3.

Discussion

In the present qualitative study, the identified themes revealed the multidimensional nature of nutritional problems in cancer patients from the viewpoint of healthcare professionals and the medical care team members.

One of the categories identified in this study was *problems related to the nature of the disease and complications of treatment* with two subcategories including *complications related to the nature of the disease* and *complications of treatment*. Cancer diagnosis is an unbelievable and unpleasant experience for many people. Cancer can adversely impact an individual's socioeconomic status, occupation, and entire life. All cancer patients suffer from serious psychological problems because of the

Table 3. The themes, sub-themes, and selected codes

Themes	Subthemes	Selected quotations
1) Problems related to the nature of the disease and complications of treatment	1-1. Complications related to the nature of the disease	*Malnutrition seems to be the main nutritional problem in cancer patients, which is mainly due to the disease-related metabolic changes and reduced food intake associated with the side effects of the chemotherapy or malabsorption (P13).* *According to patients' reports and their complaints, the most common obstacle is depression and anorexia, and their weakness and lethargy. Depression can be prevented by counseling and psychiatric support (P14).*
	1-2. Complications of treatment	*Chemotherapy drugs stimulate the sense of smell and taste and lead to vomiting and nausea (P11).* *The most important problem is malnutrition that occurs during the disease, chemotherapy/radiotherapy due to the loss of appetite (P12).*
2) Carelessness about principles of cancer care	2-1. Ignoring the nutritional and psychological needs of cancer patients	*Foods are not good. Patients should have a high-protein diet, but they are given rice every day. They have nausea, so their meals should be small, but these are not complied in the hospital (P5).* *One issue is the volume of the served foods, the other is the fatty foods, and the patient says that food has no taste at all (P1).* *The patients often need psychological counseling and also social worker support who are not active in the hospital at all (P15).*
	2-2. Low quality of food served in hospitals	*The quality of hospital foods is extremely low and most patients complain about this issue (P13).* *Poor quality food is presented with an appearance that does not stimulate the patient's appetite at all. Garnishes that can increase the patient's appetite are not used in served foods (P12).* *Sometimes patients complain about the appearance of the served foods as well as the hygiene of foods and people serving food (P16).*
3) Lack of awareness and education in patients and medical staff	3-1. Patients' unawareness of their nutritional needs	*I see how patients have thirst for information, in all cases, not about nutrition alone. But you know a patient who has undergone chemotherapy does not know her diet. For example, they don't know whether they can or not eat raw fruits or vegetables (P8).* *The most problem is that patient still does not know the difference between high-calorie or high-protein foods and what food to eat that is high in protein. For example, they think that any food that is expensive is high in protein (P2).*
	3-2. Failure to provide correct nutritional information requested by patients	*Well, usually the medical care team do not have any education for patients unless the patient is severely malnourished (P9).* *In my opinion, when there is a demand, there is also a response. So, if the patient expresses his educational needs, they (the medical care team) have to answer the patient (P8).*
	3-3. Medical staff's low awareness of the nutritional principles of cancer patients	*A nurse does not know the importance of appropriate nutrition on the disease outcome (P8).* *Nurses most of time talk about the side effects of medication not nutrition education. His/her job is not about nutrition. I passed only two nutrition courses in university, but I have a lot of medical information (P2).*
4) Executive shortcomings	4-1. Lack of timely monitoring and regular follow-up	*Until now, we do not have a nutrition planner. In practice, the doctor comes, orders a high-calorie and high-protein diet, and goes and does not follow it (P6).* *Our head nurse object to the hospital catering several times, but no one pays any attention to this (P4).*
	4-2. Inadequacies in food management departments	*The reason of the extremely low quality of hospital food is the lack of sufficient funding for the hospital kitchen, entrusting the hospital kitchen to contractors who naturally seek to make a profit, and the lack of adequate supervision (P13).* *The commitment and attitude of the people who work in the kitchen is very important. The person who is preparing the food should really care that the oncology patient whose white cell count is 500-1000 will die if he eats contaminated food. (P10).*
	4-3. Ignoring the role of nurses in achieving nutritional goals	*Because the nurse takes direct care of the patient, she/he is closer to them which not understood by the health care system (P10).* *Everyone should know that the most important role in nursing is education and care. But these are not done. Because of our own inefficiency and also due to the lack of manpower. Lack of manpower is very annoying (P2).*
	4-4. Non-prominent role of hospital dietitians in counseling	*The number of dietitians should be increased. Nurses do not have enough time to provide nutrition education to patients. We have a nutrition expert unit in the hospital, but I have not seen any nutrition expert at all during my two years of work in the hospital (P2).* *The hospital dietitians have no incentive to advise and educate cancer patients because it does not affect their job promotion or payment. Even their activity in the wards causes reactions from the other members of the medical staff, especially nurses (P15).*
5) Planning and policy-making	5-1. Lack of cooperation and coordination among departments	*For a while, there was a dietitian who educated patients. However, she gave nutritional recommendations contradicting those of the medical care team. For example, she advised patients not to consume yogurt or dairy products but we told them not to listen to her at all (P5).* *Several times I have talked to the hospital manager about the diets that should be considered specifically for oncology patients. Unfortunately, they don't care at all (P6).*
	5-2. Inefficient management, poor policy-making, and uncertain hierarchy	*We do not have a nutrition specialist now. Only the doctor comes and orders a high-calorie and high-protein diet, without any follow-up. Patients only receive basic nutritional recommendations from the nurse at the time of discharge (P6).* *There is no specific policy or guideline for the nutrition of oncology patients, maybe I am not aware (P9).* *They refer emergency patients to the oncology ward due to the shortage of hospital beds. They don't care about the immune system defects of cancer patients in the ward (oncology ward) (P6).*
	5-3. Insisting on the implementation of inefficient structures	*The hospital does not care at all about the patient's nutrition, it does not matter if the patient eats or not, they just want to finish the treatment. This is the policy of the hospital (P7).* *The management system does not take care of the oncology ward and the nutritional needs of the patients, only the hospital turnover is important to them (P4).* *Do we really have a system for measuring patients' satisfaction in the hospital? Could you eat this soup that was prepared? Is there monitoring? Or is there any demand from the hospital for the kitchen to make separate meals for oncology patients? (P9)*

Table 3. Continued.

Themes	Subthemes	Selected quotations
6) Financial and support barriers	6-1. Financial problems of hospitals and patients	*The number of benefactors has decreased because of bank sanctions. The hospital has to find internal benefactors. But they pay more for medicine, they are so worried about providing medicine, and are not concerned about meeting the nutritional needs of patients (P6).* *Patients who are admitted to the ward are not financially stable. It's difficult for them to meet nutritional and supplemental recommendations at home (P7).* *It seems that the most important obstacle to improving the nutritional status of oncology ward patients is providing sufficient funding for hospital food services (P13).*
	6-2. Lack of necessary manpower	*We have 30 beds in our ward, 30 active beds, and these 30 beds in the night shift are run by only two nurses. We do not have time to talk to the patient about what to eat and what not to eat. Lack of budget and manpower causes more problems (P6).* *I do not have enough time as a nurse. I just administer the medications. This is my duty to provide training and care but it is not properly done due to the lack of manpower. The lack of manpower is very annoying in this ward (P2).*
	6-3. Insufficient support from insurance companies	*Nutrition counseling for outpatients is not covered by insurance and the cost of nutritional supplements and solutions/powders is high. Nutrition counseling and more importantly, nutritional supplements should be covered by the insurance schemes (P15).* *Insurance companies support the costs only partially. Most of the costs are paid by patients themselves. For rural insurance, this support is even more limited (P6).*

conditions of the disease and the diagnosis itself. Cass et al, in their systematic review of the nutritional challenges of hospitalized patients, emphasized that one of the common complications among hospitalized patients is iatrogenic malnutrition, partly attributed to inadequacies in meeting the patients' nutritional requirements (15). On the other hand, Trinca et al, in a cross-sectional study on food experiences of hospitalized patients, noted that the perceived quality of meals is highly dependent on factors such as freshness, taste, texture, and variety of foods, healthiness perceptions, and alignment with preferences of patients (16). Unfortunately, there are no formal plans or structured mechanisms to evaluate these factors in hospital settings. On the other hand, ignoring the patients' nutritional needs in the hospital may stem from insufficient knowledge about the nutritional content of food provided to patients. Moreover, medical teams often focus on the management and treatment of the disease and its acute or chronic complications rather than the quality of food or diet-related complications of hospitalized patients (17). Public hospitals usually prioritize cost-effectiveness and faster patient discharge, hence overlooking the quality of food provided by catering services. Besides the unmet nutritional needs of hospitalized cancer patients, the interviewed healthcare team members and experts in this study highlighted that the patients' emotional and mental needs were also commonly neglected. In line with the findings of the present study, Wang et al, in their systematic review to identify unmet care needs of cancer patients, emphasized the ignored psychological needs of cancer patients alongside several nutrition-related demands of these patients. Most of the patients, especially advanced cancer patients, have unmet mental needs and struggle with different complicated psychological aspects of their disease (4).

Lack of awareness and education in patients and medical staff was another main theme identified in the current study. The clinical course of several diseases, especially cancer, can be negatively affected by the poor nutritional status of patients. Accordingly, healthcare professionals and the members of the medical team particularly physicians, dietitians, and nurses, are recommended to provide essential nutritional advice to the patients and be aware of their nutritional needs and challenges. The findings of previous studies have shown that most healthcare professionals are unable to provide appropriate nutritional counseling to their patients (18-20). In addition, some previous studies on cancer patients, such as those conducted by Muscaritoli et al and Kiss et al reported that physicians and healthcare professionals often underestimate malnutrition and the significance of nutrition in patient care (21,22), as revealed in the present study. According to international nutritional guidelines, cancer patients must receive appropriate nutritional advice from healthcare professionals to learn how to replace undesirable dietary habits and adopt effective strategies for risk reduction and management of complications (23). However, patients often receive essential nutritional information from unreliable sources such as non-experts, webpages, and social networks. Additionally, previous research indicates that cancer patients receive inconsistent nutritional advice from the healthcare team (24-26), leading to more anxiety and confusion.

In line with the findings of the present study, the qualitative study by Ashghali Farahani et al on factors influencing patient education identified physician-centeredness and non-professional activities as key barriers to patient education as perceived by nurses. Lack of motivation, inconsistencies and conflicts in education, lack of communication skills, and poor control and supervision were other factors influencing patient education in hospitals (27). These findings are in line with the results of the study by Caccialanza et al, a national exploratory web-based survey on the attitude of Italian oncologists towards nutritional care (3). The identified

challenges might stem from inadequacies in nutrition education in medical universities failing to provide the necessary knowledge on the impact of nutrition, dietary components, and various nutrients as well as their interactions in disease progression, prevention, and treatment.

Executive shortcomings was another theme identified in the current study. Dietitians can assess the nutritional status of patients, identify nutritionally at-risk patients, improve the nutritional status of patients, and prevent malnutrition (28). In fact, dietitians, especially in hospitals, are considered the main healthcare professionals in addressing nutritional complications (29). Considering the significance of incorporating dietitians in the nutritional screening of hospitalized patients, Aktas et al, in their cross-sectional analysis, investigated the medical records of 182 newly admitted cancer patients at the acute care palliative medicine unit in the USA. The results revealed an under-recording of malnutrition by physicians compared to registered dietitians. Consistent with the findings of the present study, Aktas et al also underlined the importance of the role of dietitians in assessing malnutrition in hospitalized patients (30). Physicians are recommended to refer patients to dietitians for nutritional assessments. Dietitians should also be proficient in using their professional and academic expertise to implement timely nutritional interventions for hospitalized patients. However, most of the time, the role of dietitians is neglected by healthcare managers and physicians. Creating a suitable work environment that promotes effective communication among dietitians, nurses, and physicians can improve the quality of care and the overall quality of life of cancer patients (30).

Nurses in oncology wards play a crucial role in delivering care to hospitalized cancer patients, thereby affecting the quality of care provided. Missed nursing care is one of the suggested key factors affecting the quality of care, particularly for cancer patients. In a qualitative study, Dehghan-Nayeri et al identified certain factors related to missed care in oncology wards. Some of these factors were related to the shortage of equipment and materials, time pressure, manpower shortage, and high workload (31). Moreover, Fleurke et al conducted a systematic review on the significance of the role of dietitians in malnutrition management and emphasized the impact of workload and its importance on the quality of services delivered by healthcare professionals including dietitians and nurses (29). On the other hand, Tchounzou et al evaluated the reasons for patients with cervical cancer being lost to follow-up. They identified several challenges leading to irregular follow-up such as the negative effects of current follow-up programs on patient comfort and security, anxiety, poverty, using alternative treatment, and inequality in the distribution of care services (32). Another executive shortcoming identified in the present study was the inadequacy of food management departments in hospitals. Likewise, Osman et al, in a systematic review, identified some strategies to improve food intake in hospitalized patients. They indicated that approximately 58% of hospitalized patients refused to eat the food served in hospitals due to low quality, delayed mealtime, and poor hygiene (33). Hospital food service or catering plays a crucial role in providing nutritious meals for patients during their recovery period. The preparation of hospital food should primarily be based on the nutritional needs of patients, their preferences and tastes, and the overall quality of the food. Several efforts have been made to improve hospital food services and increase patient satisfaction. Some proposed models to enhance hospital food services include the Patient-Centered Food Service Model, Care Meal Service, protected mealtime, meal composition modification, and multidisciplinary approaches. The findings of the present study showed that patients and healthcare staff commonly express dissatisfaction with the quality of hospital catering and the food provided. It seems that nutritional concerns are not given high priority in hospitals in developing countries due to inefficiencies in healthcare systems and a predominant focus on financial barriers as the major issues.

Another main theme identified in this study was *planning and policy-making*. The concept of a multidisciplinary team is crucial for delivering effective cancer care around the world. According to this concept, different professionals from various fields and backgrounds should collaborate to deliver cancer care successfully. Previous studies have suggested that successful multidisciplinary cooperation leads to positive outcomes for cancer patients such as reduced mortality rates, lower readmission rates, shorter hospital stays, increased satisfaction, and improved health-related quality of life (30,34,35).

Planning and policy-making was further divided into three subthemes including the *lack of cooperation and coordination between departments*; *inefficient management, poor policy-making, and uncertain hierarchy*; and *insisting on the implementation of inefficient structures*. By juxtaposing these findings with those from previous studies on related topics (30,34,35), it becomes apparent that there is a dearth of clear guidance across different healthcare systems on how to develop multidisciplinary teamwork. There are numerous challenges in policymaking and implementation of multidisciplinary cooperation. Some of these challenges are shared across various healthcare systems while some others are specific to certain settings. Previous observational studies have pointed to several challenges including variations in organizational structures and strategies, unwillingness to share resources and manpower, logistical and informational challenges, and limited administrative support (36). Health planners,

managers, and policy-makers should identify, evaluate, and address these challenges and try to solve them by seeking advice from and employing experts as well as applying the executive experiences of the established systems.

The last main theme found in this study was *financial and support barriers*. In line with the findings of the current study, several studies have reported the shortage of healthcare professionals, particularly nurses, as an important obstacle to providing high-quality and effective patient care in hospitals (37-39). The nursing shortage is one of the most important challenges of healthcare systems worldwide, which is not specific to certain countries (39). Shamsi and Peyravi conducted a systematic review of the challenges associated with the nursing shortage and identified some financial and managerial factors such as poor management, unfavorable work environment and conditions, and low salary (37). In Iran, the most important contributing factors are low social status, early retirement, work-related injuries, immigration, low employment rates, an increase in hospital beds leading to a higher workload for nurses, nurses' unwillingness to continue their current job due to demanding working conditions and low salaries, and their inclination to pursue other professions (40).

The provision of oncology care services incurs high costs, imposing financial burdens, especially for those in lower and middle socioeconomic strata. In Iran, medical and healthcare centers rely heavily on government funding, leading to constraints in the recruitment of nurses and even the admission of university students. Apart from these financial problems, the imposition of new economic sanctions (since 2015) has resulted in a devaluation of the Iranian currency and a reduction in the government's overall budget, directly devastating the healthcare process, particularly for cancer patients (41,42). In addition, health insurance schemes struggle to cover the exorbitant costs of diagnostic procedures and therapeutic medications, given the large patient population and the high prices of anti-cancer agents (43). Consequently, over 95% of Iranians covered by government insurance, as well as individuals from middle- and low-income brackets, face limitations in accessing these costly treatments and medications (42).

The present study investigated the nutritional challenges faced by hospitalized cancer patients from the viewpoint of healthcare professionals. There were some limitations in conducting this study, including the low participation of some medical staff members, particularly oncologists and radiologists, due to various reasons such as being too busy or unwilling to engage in discussions. They had little motivation to take part in the interviews. Furthermore, nurses faced challenges in communicating their concerns to the medical team, leading to instances where they declined to further elaborate on their issues.

Conclusion

The main themes identified in the current study revealed that nutritional problems faced by cancer patients are multidimensional and rooted in diverse challenging issues including problems related to the nature of the disease and treatment, financial barriers, manpower shortages, lack of awareness among patients and healthcare providers, executive and management shortcomings, insufficient inter-organizational cooperation, and the significant negative impact of severe economic sanctions. Solving these problems needs funding from the government, interdepartmental cooperation among medical universities, healthcare centers, and hospitals, comprehensive and evidence-based healthcare management at the national level, and international collaborations.

Acknowledgments

This study is part of a research project approved by the research council of the National Nutrition and Food Technology Research Institute (NNFTRI), Iran. We appreciate the research council of the NNFTRI for their financial support.

Authors' Contribution

Conceptualization: Arezoo Haghighian-Roudsari, Masoumeh Jabbari.
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Competing Interests

The authors declare no conflict of interest.

Ethical Approval

This research project was approved by the research council of the National Nutrition and Food Technology Research Institute (NNFTRI), Iran (Ethical code: IR.SBMU.NNFTRI.REC.1400.058).

Funding

There was no funding source for this research.

References

1. Arends J. Malnutrition in cancer patients: causes, consequences and treatment options. Eur J Surg Oncol. 2024;50(5):107074. doi: 10.1016/j.ejso.2023.107074.
2. Bianchini C, Bonomo P, Bossi P, Caccialanza R, Fabi A. Bridging gaps in cancer cachexia care: current insights and future perspectives. Cancer Treat Rev. 2024;125:102717. doi: 10.1016/j.ctrv.2024.102717.
3. Caccialanza R, Cereda E, Pinto C, Cotogni P, Farina G, Gavazzi C, et al. Awareness and consideration of malnutrition among oncologists: insights from an exploratory survey. Nutrition. 2016;32(9):1028-32. doi: 10.1016/j.nut.2016.02.005.
4. Wang T, Molassiotis A, Chung BP, Tan JY. Unmet care needs

of advanced cancer patients and their informal caregivers: a systematic review. BMC Palliat Care. 2018;17(1):96. doi: 10.1186/s12904-018-0346-9.
5. Zhang X, Wu Z, Zhao H, Li C, Wu J, Dai G. Conclusiveness of the Cochrane reviews in palliative and supportive care for cancer. Am J Hosp Palliat Care. 2017;34(1):53-6. doi: 10.1177/1049909115605058.
6. Zhang X, Zhou Y, Deng T, Yuan X, Xiong J, Lin Y, et al. Where are we and where to go for supportive cancer care in China? A national survey of patients and healthcare providers. Res Sq [Preprint]. March 25, 2021. Available from: https://www.researchsquare.com/article/rs-263902/v1.
7. Kruk ME, Gage AD, Arsenault C, Jordan K, Leslie HH, Roder-DeWan S, et al. High-quality health systems in the sustainable development goals era: time for a revolution. Lancet Glob Health. 2018;6(11):e1196-252. doi: 10.1016/s2214-109x(18)30386-3.
8. Furness K, Huggins C, Croagh D, Haines T. Exploring the attitudes of health professionals providing care to patients undergoing treatment for upper gastrointestinal cancers to different models of nutrition care delivery: a qualitative investigation. Nutrients. 2021;13(3):1020. doi: 10.3390/nu13031020.
9. Smith KC, Coa KI, Klassen AC. A qualitative study of dietary discussions as an emerging task for cancer clinicians. SAGE Open Med. 2016;4:2050312116665935. doi: 10.1177/2050312116665935.
10. Johnston EA, van der Pols JC, Ekberg S. Needs, preferences, and experiences of adult cancer survivors in accessing dietary information post-treatment: a scoping review. Eur J Cancer Care (Engl). 2021;30(2):e13381. doi: 10.1111/ecc.13381.
11. Jabbari M, Khoubbin Khoshnazar T, Haghighian-Roudsari A, Taghizadeh-Hesary F, Milani-Bonab A. The viewpoints of hospitalized patients with cancer regarding their nutritional challenges in hospital: a phenomenological study. J Nutr Food Secur. 2022;7(4):424-36. doi: 10.18502/jnfs.v7i4.11052.
12. Corbin J, Strauss A. Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory. SAGE Publications; 2014.
13. Lincoln YS, Guba EG. But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. New Directions for Program Evaluation 1986;1986(30):73-84. doi: 10.1002/ev.1427.
14. Godlee F, Jefferson T. Peer Review in Health Sciences. London: BMJ Books; 2003.
15. Cass AR, Charlton KE. Prevalence of hospital-acquired malnutrition and modifiable determinants of nutritional deterioration during inpatient admissions: a systematic review of the evidence. J Hum Nutr Diet. 2022;35(6):1043-58. doi: 10.1111/jhn.13009.
16. Trinca V, Duizer L, Keller H. Putting quality food on the tray: factors associated with patients' perceptions of the hospital food experience. J Hum Nutr Diet. 2022;35(1):81-93. doi: 10.1111/jhn.12929.
17. Moran A, Lederer A, Johnson Curtis C. Use of nutrition standards to improve nutritional quality of hospital patient meals: findings from New York City's Healthy Hospital Food Initiative. J Acad Nutr Diet. 2015;115(11):1847-54. doi: 10.1016/j.jand.2015.07.017.
18. Muscaritoli M, Corsaro E, Molfino A. Awareness of cancer-related malnutrition and its management: analysis of the results from a survey conducted among medical oncologists. Front Oncol. 2021;11:682999. doi: 10.3389/fonc.2021.682999.
19. Wang T, Molassiotis A, Chung BP, Tan JY. Unmet care needs of advanced cancer patients and their informal caregivers: a systematic review. BMC Palliat Care. 2018;17(1):96. doi: 10.1186/s12904-018-0346-9.
20. Chua GP, Pang GS, Yee AC, Neo PS, Zhou S, Lim C, et al. Supporting the patients with advanced cancer and their family caregivers: what are their palliative care needs? BMC Cancer. 2020;20(1):768. doi: 10.1186/s12885-020-07239-9.
21. Muscaritoli M, Molfino A, Scala F, Christoforidi K, Manneh-Vangramberen I, De Lorenzo F. Nutritional and metabolic derangements in Mediterranean cancer patients and survivors: the ECPC 2016 survey. J Cachexia Sarcopenia Muscle. 2019;10(3):517-25. doi: 10.1002/jcsm.12420.
22. Kiss N, Bauer J, Boltong A, Brown T, Isenring L, Loeliger J, et al. Awareness, perceptions and practices regarding cancer-related malnutrition and sarcopenia: a survey of cancer clinicians. Support Care Cancer. 2020;28(11):5263-70. doi: 10.1007/s00520-020-05371-7.
23. Murphy JL, Munir F, Davey F, Miller L, Cutress R, White R, et al. The provision of nutritional advice and care for cancer patients: a UK national survey of healthcare professionals. Support Care Cancer. 2021;29(5):2435-42. doi: 10.1007/s00520-020-05736-y.
24. Hardcastle SJ, Maxwell-Smith C, Hagger MS, O'Connor M, Platell C. Exploration of information and support needs in relation to health concerns, diet and physical activity in colorectal cancer survivors. Eur J Cancer Care (Engl). 2018;27(1). doi: 10.1111/ecc.12679.
25. Kassianos AP, Coyle A, Raats MM. Perceived influences on post-diagnostic dietary change among a group of men with prostate cancer. Eur J Cancer Care (Engl). 2015;24(6):818-26. doi: 10.1111/ecc.12357.
26. Sutton E, Hackshaw-McGeagh LE, Aning J, Bahl A, Koupparis A, Persad R, et al. The provision of dietary and physical activity advice for men diagnosed with prostate cancer: a qualitative study of the experiences and views of health care professionals, patients and partners. Cancer Causes Control. 2017;28(4):319-29. doi: 10.1007/s10552-017-0861-7.
27. Ashghali Farahani M, Mohammadi E, Ahmadi F, Mohammadi N. Factors influencing the patient education: a qualitative research. Iran J Nurs Midwifery Res. 2013;18(2):133-9.
28. Holmes RA. Role of dietitians in reducing malnutrition in hospital. Cmaj. 2019;191(5):E139. doi: 10.1503/cmaj.71130.
29. Fleurke M, Voskuil DW, Beneken Genaamd Kolmer DM. The role of the dietitian in the management of malnutrition in the elderly: a systematic review of current practices. Nutr Diet. 2020;77(1):60-75. doi: 10.1111/1747-0080.12546.
30. Aktas A, Walsh D, Galang M, O'Donoghue N, Rybicki L, Hullihen B, et al. Underrecognition of malnutrition in advanced cancer: the role of the dietitian and clinical practice variations. Am J Hosp Palliat Care. 2017;34(6):547-55. doi: 10.1177/1049909116639969.
31. Dehghan-Nayeri N, Shali M, Navabi N, Ghaffari F. Perspectives of oncology unit nurse managers on missed nursing care: a qualitative study. Asia Pac J Oncol Nurs. 2018;5(3):327-36. doi: 10.4103/apjon.apjon_6_18.
32. Tchounzou R, Simo Wambo AG, Njamen TN, Ilick IO, Neng HT, Dadao F, et al. Patients lost to follow-up for cervical cancer in the Limbe Regional Hospital. J Glob Oncol. 2019;5:1-5. doi: 10.1200/jgo.18.00067.
33. Osman NS, Md Nor N, Md Sharif MS, Hamid SBA, Rahamat S. Hospital food service strategies to improve food intakes among inpatients: a systematic review. Nutrients. 2021;13(10):3469. doi: 10.3390/nu13103649.
34. Al-Kalaldeh M, Amro N, Qtait M, Alwawi A. Barriers to effective nurse-patient communication in the emergency department. Emerg Nurse. 2020;28(3):29-35. doi: 10.7748/en.2020.e1969.
35. Hui D, Hannon BL, Zimmermann C, Bruera E. Improving

patient and caregiver outcomes in oncology: team-based, timely, and targeted palliative care. CA Cancer J Clin. 2018;68(5):356-76. doi: 10.3322/caac.21490.
36. Søndergaard EG, Grøne BH, Wulff CN, Larsen PV, Søndergaard J. A survey of cancer patients' unmet information and coordination needs in handovers--a cross-sectional study. BMC Res Notes. 2013;6:378. doi: 10.1186/1756-0500-6-378.
37. Shamsi A, Peyravi H. Nursing shortage, a different challenge in Iran: a systematic review. Med J Islam Repub Iran. 2020;34:8. doi: 10.34171/mjiri.34.8.
38. Tamata AT, Mohammadnezhad M. A systematic review study on the factors affecting shortage of nursing workforce in the hospitals. Nurs Open. 2023;10(3):1247-57. doi: 10.1002/nop2.1434.
39. Marć M, Bartosiewicz A, Burzyńska J, Chmiel Z, Januszewicz P. A nursing shortage - a prospect of global and local policies. Int Nurs Rev. 2019;66(1):9-16. doi: 10.1111/inr.12473.
40. Rangriz H, Moosavi SZ. General health policies and the effect of burnout by overworks on the shortage of nurses in Iranian hospitals. Quarterly Journal of The Macro and Strategic Policies. 2014;2(7):43-64. [Persian].
41. Hassani M. Impact of sanctions on cancer care in Iran. Arch Bone Jt Surg. 2018;6(4):248-9.
42. Aloosh M, Salavati A, Aloosh A. Economic sanctions threaten population health: the case of Iran. Public Health. 2019;169:10-3. doi: 10.1016/j.puhe.2019.01.006.
43. Shahabi S. International sanctions: sanctions in Iran disrupt cancer care. Nature. 2015;520(7546):157. doi: 10.1038/520157b.