Original Article

Nutritional Issues and Self-care Measures Adopted by Cancer Patients Attending a University Hospital in Turkey

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ABSTRACT

Objective: This study aimed to assess the nutritional status of cancer patients and the self-care measures they adopted as a response to nutritional problems. **Methods:** This descriptive study included seventy cancer patients staying in the oncology and internal disease clinics of a university hospital in Turkey. Data were collected using a questionnaire with 29 questions. **Results:** The mean age of participants was 40.2 ± 1.82 years. Approximately, 62.9% of the patients ate only half of the meals offered to them, 65.7% experienced weight loss, and 45.7% had difficulty eating their meals on their own. Moreover, 47.1% of the patients received nutritional support and nutritional problems were observed in 71.4% of the patients; 80% were unable to eat hospital food, 54.3% had an eating disorder related to a special diet, 30% suffered from loss of appetite, 27% had nausea, and 14.3% had difficulty swallowing. Furthermore, 48.5% of patients responded that they ate home-cooked food or ordered food from outside when questioned about the self-care measures taken to avoid the aforementioned nutritional problems. **Conclusions:** Most of the cancer patients had serious nutritional problems and ate home-cooked food and used nutritional supplements to overcome these problems. Oncology nurses are responsible for evaluating the nutritional status of cancer patients and eliminating nutritional problems.

Key words: Cancer, malnutrition, nurse, nutrition, precaution

Introduction

Malnutrition is common among cancer patients. It is a condition resulting from the consumption of a diet that is either deficient or excessive in nutrients, thereby causing health problems.[1] Cancer patients usually suffer from malnutrition because of the side effects of cancer treatment

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and deleterious effects of the disease itself. Chemotherapy and radiotherapy are the most common methods for cancer treatment. Given that these methods damage cells in the gastrointestinal tract, food intake decrease because of nausea and vomiting, mucositis, absence of appetite, diarrhea, constipation, and taste changes.[2,3] Malnutrition is the result of chemotherapy- and radiotherapy-related diffusive systemic side effects in cancer patients. The incidence of malnutrition in cancer patients is between 40% and 80%.[4,5] Moreover, malnutrition in these patients is responsible for 20% of cancer-related deaths.[5] Malnutrition can be described as inadequate food intake or absorption because of cancer.[6] It can cause ineffective therapy, long hospitalization, decreased the quality of life, and increased mortality and morbidity.[7-9]

The most common nutritional problems in cancer patients are nausea, vomiting, difficulty in swallowing, mucositis-related decrease in food intake, loss of appetite, inadequate food consumption, difficulty in eating hospital food, special diet-related inadequate food consumption such as neutropenic diet and inadequate liquid intake. If these nutritional problems are not handled efficiently by a healthcare team, malnutrition, and cachexia may develop. In both cases, the general health condition of patients worsens, and treatment success decreases. The mortality rate may even increase.[8,10] Previous studies have shown that malnutrition rates of cancer patients, especially those undergoing cancer treatment, are higher than those of normal patients. Therefore, the nutritional status of patients should be evaluated. Kara[11] reported that patients in his study showed higher average energy consumption at 3 days before cancer treatment than after treatment because of chemotherapy side effects. Data in the literature regarding cancer patient malnutrition related to nutrition in Turkey are limited. Medical treatment of cancer patients usually focuses on the administration of cytotoxic agents and/or radiation therapy, and the prevalence of malnutrition among cancer patients has been very high.

Oncology nurses help patients deal with cancer treatment and its side effects, as well as take care of these patients using an integrated approach. Evaluating and providing nutritional support are the responsibilities of these nurses. An oncology nurse detects nutritional problems of patients in cooperation with a physician and dietitian and attempts to solve such problems.[4,11,12] This study aimed to assess the nutritional status of cancer patients and the self-care measures they adopted as a response to nutritional problems. This manuscript also aimed to increase awareness of professional healthcare providers and encourage further studies into this topic.

Methods

Study design

This study was performed to describe the nutritional problems in cancer patients and self-care measures adopted by these patients.

Study questions

1. Are there any nutritional problems in cancer patients?
2. What are the factors causing nutritional problems in cancer patients?
3. What kind of precautions does cancer patients take for their nutritional problems?

Samples of the study

This study included seventy cancer patients staying in the oncology and internal medicine clinics of the Hacettepe University Hospital between January 2010 and June 2011.

Selection criteria of the sample area

The inclusion criteria were as follows:

- Age above 18 years
- Cancer diagnosed at least 6 months ago
- Under chemotherapy or radiotherapy
- Treated by staying in a hospital
- Able to communicate.

Exclusion criteria of the sample area

- Terminally ill cancer patients.

Materials used for data collection

A questionnaire prepared in accordance with previous studies was used by the researcher to collect data.[1,11] This form had the following three parts:

- The first part contained 13 questions to learn the sociodemographic characteristics of the patients
- The second part contained 16 questions. These questions were prepared for detecting the nutritional status, nutritional problems, and reasons behind these problems.

Situations defined as nutritional problems are as follows

- Low body mass index (BMI)
- Consuming less than half of the food provided
- Not eating hospital food
- Weight loss during the stay in the hospital
- The last part contained a table to detect the problems and precautions that affect the nutritional status of the patients.

Procedure of the study

This study included seventy volunteer cancer patients staying in the oncology and internal medicine clinics of a university hospital between January 2010 and June 2011. The questionnaire was filled out by the nurses in charge of these patients. Filling out these forms took almost 30 min.

Statistical analysis

Data collected at the end of the study were analyzed using Statistical Package for the Social Sciences Windows 20.0. Descriptive measures were used to summarize the data.

Ethical perspective of the study

Written permission was obtained from the institution, and oral permission was acquired from the patients who were able to accomplish these forms.

Results

The mean age of the participants was 40.2 ± 1.82 years, of whom 37% were female, 71.4% were married, 37.1% were primary school graduates, 37.1% were homemakers, and 77% were unemployed. Regarding their caregivers, 34.3% received care from their husbands/wives, and 34.3% received care from their parents. The results are shown in Table 1.

Table 1: Descriptive characteristics of patients (*n*=70)

Characteristics	*n*	%
Age (minimum: 18, maximum: 68, mean: 40.2±1.82), year		
18-34	25	35.7
35-55	29	41.4
≥55	16	22.9
Gender		
Male	37	52.9
Female	33	47.1
Marital status		
Married	52	74.3
Single	18	25.7
Education		
Elementary school	26	37.1
High school	23	32.9
University	21	30.0
Career		
Officer	4	5.7
Worker	17	24.2
Retired	10	14.3
Homemaker	26	37.1
Students	13	18.6
Working status		
Unemployed	54	77.1
Full time	16	22.9
Caregiver		
Wife or husband	24	34.3
Children	18	25.7
Parents	19	27.1
Sister or brother	9	12.9
Total	70	100.0

When the diagnoses were analyzed, 20% of the patients had acute myeloid leukemia, 18.6% had multiple myeloma, and 18.6% had non-Hodgkin lymphoma. Moreover, 11.4% of the patients had metastasis; 27% underwent cyclophosphamide, doxorubicin, oncovin, and prednisone treatment (mean dosage of 2.7 ± 0.20); 55.7% used steroids; 30% used antidepressants; and 15.7% had edema [Table 2].

The mean BMI of the patients was 23.5 ± 0.06 (daily medical report). Of the patients studied, 62.9% ate half of all their meals, 65.7% lost weight (between 2 and 12 kg; the process of treatment), and 45.7% had difficulty eating their meal. Furthermore, 47.1% of the patients took nutritional supplements, and 35.7% took Ensure. Nutritional supplementation-related complications were observed in 27.7% of the patients [10% had constipation, and 8.6% had nausea, vomiting, and diarrhea Table 3]. As indicated in the table, 94.3% of the patients had a special diet, and 77.1% of this diet was neutropenic. Moreover, 62.95% of the patients followed their diets and were informed about their diets by their physicians and nurses.

In this study, 71.4% of the patients indicated they had nutritional problems. Of these problems, 80% were difficulty in eating hospital food, 54.3% were special diet-dependent eating problems, 30% were a loss of appetite, 27% were nausea and 14.3% were difficulty in swallowing. When the patients were asked about the precautions they took to overcome these problems, 48.5% of the patients said they brought their foods from either outside or home, and 34.2% of the patients said they have been using oral solutions [mouthwash Table 4].

Discussion

Most of the cancer patients had nutritional problems. Of the patients included in this study, 80% had difficulty eating hospital foods, 54.3% had a special diet-dependent decrease in food intake, 30% had loss of appetite, 27% had nausea, and 14% had difficulty in swallowing. Among the patients with nutritional problems, anorexia and malnutrition could dysregulate their general condition. According to previous studies, malnutrition is observed in 40%–80% of cancer patients.[4,5] Numerous factors can cause malnutrition in cancer patients, such as treatment-related

Table 2: Patients and disease characteristics ($n=70$)

Feature of diseases	*n*	%
Time taken to diagnose (3.9±0.27)		
0-11 months	44	62.9
1-3 years	22	31.4
4-6 years	4	5.7
Diagnosis of disease		
AML	14	20
MM	13	18.6
NHL	13	18.6
ALL	12	17.1
Lymphoma	7	10
Breast cancer	6	8.6
CML	3	4.3
CLL	2	2.9
Metastasis		
Yes*	8	11.4
No	62	88.6
Type of therapy		
Chemotherapy	65	92.8
Radiotherapy	5	7.2
Protocol of chemotherapy ($n=65$) - mean of cure: 2.7±0.20		
CHOP	19	29.2
VAD	14	21.5
CVAD	14	21.5
ARA-C	12	18.4
AC	4	6.2
Taxol	2	3.2
Steroid receiving status		
Yes	39	55.7
No	31	44.3
Antidepressant receiving status		
Yes	21	30
No	49	70
Edema		
Yes*	11	15.7
No	59	84.3
Total	70	100

*Colon, legs and face. CHOP: Cyclophosphamide, doxorubicin, oncovin, prednisone, VAD: Vincristine, adriamycin and dexamethasone, C-VAD: Cyclophosphamide, vincristine, adriamycin and dexamethasone, ARA-C: Cytosine arabinoside, AC: Adriamycin and cyclophosphamide, AML: Acute myeloid leukemia, MM: Multiple myeloma, NHL: Non-Hodgkin lymphoma, ALL: Acute lymphocytic leukemia, CML: Chronic myeloid leukemia, CLL: Chronic lymphocyte leukemia

side effects (e.g., mucositis, loss of appetite, taste alterations, difficulty in swallowing, constipation, and diarrhea), infection, functional weakness, hospital environment, and depression.[4,8,12] Oncology nurses are responsible for evaluating the nutritional status of the patients using an integrated approach. Early detection of malnutrition and timely administration of nutritional requirements can help manage dysregulation of the general condition of the patient and decrease morbidity and mortality rates. Given the difficulty faced by most of the patients in eating hospital food and restrictions in neutropenic diet, nutritional deficiency and malnutrition may develop.[13] In the 2014 consensus results of oncology nurses, some decisions were

Table 3: Nutritional features of the patients ($n=70$)

Nutritional features	*n*	%
BMI* (23.5±0.06)		
≤18	2	2.9
19-24	36	51.4
25-33	32	45.7
Meal consumption status		
Complete	22	31.4
Half	44	62.9
Less than half	4	5.7
Weight loss		
Yes*	46	65.7
No	24	34.3
Status of independence from eating the meal		
Eat with help	12	17.1
Hardly eat by themselves	32	45.7
Do not need help	26	37.1
Nutritional supplement status		
Yes	33	47.1
No	37	52.9
Nutritional supplement types		
Ensure	25	35.7
Biyosorb	4	5.7
Glukerna	2	2.9
Total parenteral nutrition	2	2.9
Problems due to nutritional supplements		
Yes	19	27.7
No	51	72.9
Nutritional supplement problems ($n=19$)		
Constipation	7	10.0
Diarrhea	6	8.6
Nausea and vomiting	6	8.6
Total	70	100.0

*BMI: Body mass index

Table 4: Nutritional problems and measures taken by cancer patients ($n=70$)

Nutritional problems and measures	*n*	%
Nutritional problems		
Yes	50	71.4
No	20	28.6
Type of nutritional problems*		
Inability to eat hospital food	56	80.0
Eating problem due to a special diet	38	54.3
Anorexia nervosa	21	30.0
Nausea	19	27.1
Mucositis	17	24.3
Constipation	12	17.1
Difficulty swallowing	10	14.3
Vomiting	8	11.4
Diarrhea	7	10.0
Taste changes	4	5.7
Measures taken by the patients* ($n=60$)		
Eating from outside or bringing lunch from home	34	56.6
Nutritional supplements + mouthwash	24	40.0
Mouthwash	24	40.0
Total	70	100.0

**n*-folded

made to this effect, such as evaluating appetite loss of patients with different tools by a nurse, inhibiting mucositis, and providing nutritional support.[15]

The present study found that more than half of the patients staying in the study hospital consumed only half of their meal and had lost weight. Almost half of these patients took nutritional supplements; however, they had nausea and vomiting, diarrhea, and constipation in response to these supplementations. Nutritional supplements maintain the body weight of the patients, inhibit dysregulations in general conditions, and inhibit the generation of life-threatening complications in patients.[14] If food intake is insufficient for compensating energy expenditure in an oncology patient, enteral nutritional supplementation should be given.[15,16] In the study of Lee *et al.*, prophylactic enteral feeding during radiotherapy decreased weight loss, dehydration, and mucositis-related rate of admission to hospital.[17] However, if this enteral feeding supplementation is not evaluated carefully, some product-dependent complications, such as diarrhea, nausea and vomiting, swelling in the stomach, and gas can occur.[14] Oncology nurses should evaluate the adequacy of nutritional supplementation and its effects on patients.[13]

When patients were asked about the kind of precautions they took to overcome these problems, almost half brought their food from either their home or outside. Furthermore, they used antiemetics (sourced from nutritional supplements) to deal with nausea and mouthwash to block mucositis formation as recommended by their physician. The methods used by patients to control nausea and mucositis were compatible with previous studies,[4,12,14,15,17-20] but the most interesting result was bringing their food from outside. This situation also matched with the observations of the present study, and oncology nurses were also included in this discussion. In the 2014 consensus meeting of oncology nurses, the participants decided to support the idea of bringing fresh food (consumed the same day) that should be cooked in a pressure cooker for the patients who do not have severe neutropenia.

Limitations

Data of this study were limited as the study was conducted in one hospital.

Conclusion

Cancer patients face certain nutritional problems caused either by the side effects of cancer treatments or hospital food-related problems. Oncology nurses who are in charge of these cancer patients are also responsible for evaluating their nutritional status and eliminating malnutrition. Individual and institutional responsibilities need to be taken.

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Conflicts of interest

There are no conflicts of interest.

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