Appraisal of Adequate Nutritional Knowledge and Related Sociodemographic Factors among Cancer Patients

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Abstract

Objective: To assess nutritional knowledge among cancer patients.

Material and Method: It was a cross sectional descriptive study conducted at Ittefaq hospital, affiliated with Sharif Medical and Dental College, Lahore from 6th November,2021 to 6th May,2022. 192 cancer patients aged 15-70 years were selected by non-probability convenient sampling technique.

Results: The mean age of sample population was 43.46±15.257 years. Out of 192 participants, 56.3% of participants were females. About 25% of participants were illiterate. Majority of participants had monthly family income ranging from 25,000 to 50,000 rupees. Participants were undergoing various treatment modalities with the highest percentage (88%) of patients receiving chemotherapy. About 78% of participants had adequate nutritional knowledge. Participants had poor knowledge regarding diet disease relationship, role of snacking and amount of fat in egg. We found statistically significant association between nutritional knowledge and education, monthly income, and treatment modality.

Conclusion: In the study, more than two thirds of participants had adequate nutritional knowledge. Treatment modality, monthly income, and education level were observed as major determinants of nutrition-related knowledge.

Keywords: cancer, malnutrition, treatment, knowledge

Introduction

Diet plays pivotal role in maintenance of health and prevention of diseases by providing various nutrients to our body required for normal functioning.[1] Cancer cases are increasing day by day worldwide becoming one of the main public health issues. This increase in incidence rates is due to increase in environmental carcinogens, unhealthy dietary habits and sedentary lifestyles.[2,3]

Malnutrition and cancer are deeply interrelated. Cancer and its aggressive treatment both cause huge effects on health and nutrition, leading to cancer cachexia. The complicated etiology of malnutrition in cancer patients is influenced by the location and type of tumor, stage of the disease, side effects of the aggressive therapies, socioeconomic status, lack of nutritional knowledge, inadequate nutritional therapy, number and interest of caretakers, financial stress as well as lack of medical staff awareness.[4] Muthike CW, et al found out that nutritional practices among cancer patients revolve around various factors which are inter-related. These include lack of diet-disease knowledge, patient's dietary preferences, poor choice of food quality, improper hygiene, ignorant cultural practices, myths and superstitions, metabolic state impacted from cancer, impact

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of chemo-radiation, nausea and taste alterations associated with treatment, poor management of symptoms, limited role of appetite-enhancers, difficult timely navigation through health system, financial and psychiatric influences of cancer, poverty of interest to seek nutritional advice and unavailability of qualified nutritionist.[3]

Many studies have suggested that a healthy diet containing rich amount of vegetables, fruits, whole grains and legumes and less amount of red meat is very helpful to help body fight against cancer. Such diet provides various vitamins, minerals and other protective substances which are beneficial against cancer. American Institute of Cancer Research (AICR) recommends healthy eating and maintaining healthy weight to reduce risk of new and recurrent cancers[5] as obesity is one of the important risk factors for various carcinomas including breast and prostate carcinomas.[2,6] Patients undergoing cancer treatment should also have ample knowledge regarding food safety because immune system is compromised in some treatments which increases risk of food-borne infections.[7] As there is no nutritional knowledge study done in cancer patients previously in Pakistan, this study will also help to find the sociodemographic determinants associated with nutritional knowledge in these patients so that dietary modifications would be implemented in future to improve nutritional status which will in turn produce better survival and quality of life.

Material and Method

It was a cross sectional descriptive study conducted at Ittefaq hospital, affiliated with Sharif Medical and Dental College, Lahore from 6th November, 2021 to 6th May, 2022. After taking permission from Ethical Review Committee(No SMDC/SMRC 155-20 Dated: 19-01-2021), a sample of 192 cancer patients aged 15-70 years of both genders with any type of cancer presented in outdoor or indoor departments, was selected by non-probability convenient sampling technique. Patients who were unconscious and who did not give consent were excluded. Data was collected by three researchers and recorded on semi-structured questionnaire containing 18 questions in knowledge section. A score of ≥ 9 (50%) was considered adequate. Data collected was entered and analyzed using the SPSS version 21. Mean ± standard deviation was calculated for the quantitative variables like age. Frequency and percentages were calculated for categorical variables like gender, occu-pation,

education and nutritional knowledge. Effect modifiers like age, gender, education, employment, family size, diagnosis and treatment modality were addressed through stratification. Post stratification, data was analyzed by using Chi-square test taking p-value ≤ 0.05 as significant.

Results

The mean age of the sample population was 43.46 years ±15.257 years standard deviation. 56.3% of participants included in the study were females while 43.7% were males. The most common cancer among females was breast carcinoma while the most common cancer among males was prostate carcinoma. This study showed that out of 192 participants, 150 (78.1%) participants scored ≥ 9 out of 18, which is indicative of adequate nutritional knowledge. 42 (21.9%) had inadequate nutritional knowledge as they scored less than 9 out of 18 (Table 1). Stratification was done for categorical variables like age, gender, education, marital status, employment status, family size,

Table 1: *Frequency distribution of respondents according to the adequacy of nutritional knowledge*

Nutritional knowledge	Frequency	Percentage
Adequate (≥9/18)	150	78.1
Inadequate (<9/18)	42	21.9
Total	192	100

Table 2: *Association of adequacy of nutritional knowledge with stratified data on basis of various sociodemographic factors*

Sociodemographic characteristic of respondents		Nutritional knowledge		Total	p-value
		Adequate	Inadequate		
Education status	Illiterate	17	31	48	0.001
	Primary/middle	44	09	53	
	Matric/intermediate	61	02	63	
	Graduation &above	28	0	28	
	Total	150	42	192	
Monthly family income (in rupees)	Less than 25000	25	14	39	0.01
	25000-50000	56	16	72	
	51000-75000	31	10	41	
	Above 75000	38	2	40	
	Total	150	42	192	
Treatment modality	Chemotherapy	137	32	169	0.04
	Radiotherapy	6	5	11	
	Surgery	6	5	11	
	Palliative	1	0	1	
	Total	150	42	192	

monthly family income, diagnosis, and treatment modality. Chi-square test was applied, and our results revealed that there was significant asso-ciation (p≤ 0.05) between level of knowledge of respon-dents and their educational status, monthly family income, and treatment modality (Table 2). There was no significant association found between adequate nutritional knowledge and age, gender, marital status, employment status, family size, or diagnosis. Majority of participants 92.7% and 62.5% were not aware of the diet-disease relationship and importance of snacking during cancer respectively while only 37.5% of partici-pants knew the correct frequency of food intake by cancer patients, i-e: 3 meals and 2 snacks.

Discussion

Nutrition plays an important role in prevention or causa-tion of most cancer. Moreover, malnutrition during cancer can lead to adverse treatment outcomes leading to poor prognosis. This study showed that certain sociodemographic characteristics of population greatly affect the participants' responses and their level of knowledge. The study included 192 participants from various age groups. The minimum age of respondent in our study was 17 years while the maximum age was 70 years. The mean age of our sample was 43.46 years±15.257 years. Almost 62 % of participants in this study belonged to middle age group, ranging from 31 years to 60 years. Majority (58%) of participants of study conducted by Muthike CW also belonged to middle age group.[3] The relatively early onset of cancer is mainly due to various nutritional and lifestyle changes, leading to obesity which in turn promote the cancer development.[8] The study partici-pants were divided based on marital status with 135 married, 37 unmarried, 2 divorced and 18 widowed participants. There was no association found between marital status and nutritional knowledge in our study. This contrasts with the findings of study conducted by Parmenter K et al. in England where there was a signifi-cant difference of nutritional knowledge among married and unmarried, widowed or divorced groups.[9] A highly significant association was found between education status and nutritional knowledge (p value 0.001). This result is in accordance with a study conducted by Muthike CW who also found strong association between nutri-tional knowledge and education status.[3] We found statis-tically significant difference among nutritional know-ledge of people belonging to various income groups

(p value 0.01). This finding is in accordance with the study conducted on patients of breast carcinoma by Patella MN et al. to assess the nutritional knowledge where education status and social status have been strongly associated with nutritional knowledge of patients.[10] Participants of the study were receiving diffe-rent treatment modalities including chemotherapy, radiotherapy, surgery, and palliative care. Patients recei-ving chemotherapy were in the majority with 88% while 5.7%, 5.7% and 0.5% of participants were receiving radiotherapy, surgery and palliative care respectively. Majority (67%) of participants of study conducted by Muthike CW were also receiving chemotherapy.[3] It was concluded in this study that nutritional knowledge of participants varied with the type of treatment modality (p value 0.04)

Mean nutritional knowledge score of the study came out to be 11.53±2.705 (64%). The maximum knowledge score was 18/18 while minimum score was 5/18. 78% of participants in this study had adequate nutritional knowledge while 22% of participants had inadequate knowledge. This study results are close to the findings of Patella MN et al. who found that 60% of breast cancer patients had adequate nutritional knowledge.[10] Similarly, Nambala E et al. also found 60% of patients with non-communicable diseases in their study had sufficient nutritional knowledge.[11] Regarding knowledge about relation of inadequate nutrition with any disease, majo-rity (92.7%) of participants were not aware of this rela-tionship. Similarly, Muthike CW also found very poor knowledge score in diet disease relationship section.[3] Majority (62.5%) of participants thought that snacking is not required while only 37.5% of participants knew that snacking plays an important role in maintaining health of cancer patients. American Cancer Society recommends having snacks in addition to meals during a day. During cancer treatment, energy requirement of human body is increased, and snacking can help to provide needed energy and maintain healthy weight.[12] Moreover, it is also proven that fruits and vegetables taken as snacks decrease the mortality rates in cancer patients.[13] Only 37.5% of participants knew the correct frequency of food intake by cancer patients, i-e: 3 meals and 2 snacks. Enough number of participants (40.6%) responded to have only 3 meals per day while 18.2 % of participants answered to have 2 meals and 3 snacks daily. AICR recommends at least 5 servings per day, 3 meals and 2 snacks.[5]

This study was conducted in one center only and nutri-

tional practices were not evaluated in this study. So, further research is recommended.

Conclusion

More than two-thirds (78.1%) of our study participants had adequate nutritional knowledge. The worst scores were found in diet-disease relationship, the role of snacking, and required frequency of food intake. Education, income status, and treatment modality of participants showed statistically significant association with nutritional knowledge.

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Authors Contribution

AR, MSI: Conceptualization of Project
AR, MAS, LA: Data Collection
AR,AIB: Literature Search
AR, MAS, MSI: Statistical Analysis
LA, QA: Drafting, Revision
AR, AIB: Writing of Manuscript