

Diet Management of Cancer Patients Who Undergo Chemotherapy—An Experimental Study

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Abstract

Background: Chemotherapy is the one major treatment module for cancer patients, but it has so many side effects, including nausea, vomiting, fatigue, and pain. These side effects reduce the adherence towards chemotherapy and reduce the interest to have foods. This, in turn, affects the normal tissue metabolism and disturbs the functions of cell and tissue regeneration. Food is very important for patients who receive chemotherapy. The cyclic administration of chemotherapy is aimed to give space to regenerate the damaged tissues. Normal cells exhibit a greater healing potential than cancer cells, and a well-balanced diet can expedite the recovery process for these healthy cells. **Aims:** The research was designed to evaluate the knowledge concerning the diet of cancer patients undergoing chemotherapy among the caregiver in oncology units and also planned to prepare a teaching module for the cancer patient who receives chemotherapy. **Materials and Methods:** This research employed a quasi-experimental design, specifically utilizing the one-group pre-test post-test design. A total of 40 caregivers were chosen as the sample from selected hospitals. **Results:** The study proved that the knowledge level of patients regarding diet management was increased after the implementation of teaching practice. This will affect the output of chemotherapy. **Conclusion:** The study concluded that patients' knowledge regarding diet management of chemotherapy is less. Hence it is necessary to teach the patients regarding diet management before initiating chemotherapy.

Keywords: Cancer, diet, chemotherapy, nursing, health, patient care, health education

INTRODUCTION

Cancer is an illness identified by the uncontrollable proliferation of genetically aberrant cells. These cells divide rapidly and form a cluster or a group of abnormal tissue. These cells can then overrun and disturb the normal functions of healthy tissue and result in the functional loss of organs. Various statistical reports related with cancer found that there were 19.3 million cancer cases and 10 million cancer deaths in the year 2020; of these, the majority deaths were reported in the economically developing world [1, 2]. The cancer registry report of India shows that the cancer cases are alarmingly

increasing and the report indicates that the statistics of cancer cases are more than 13.9 lakh in 2020. This data shows only the registered cancer cases, if the data includes the unregistered cases also the number may increase [3, 4].

Common and cost-effective approaches for treating cancer include surgery, chemotherapy, and radiation therapy. The other therapies used to treat cancer are gene therapy, immunotherapy, bone marrow transplantation, biologic therapy etc. [5]. The word chemotherapy is split into two: chemical and therapy. Chemotherapy is one of the scientifically proven cancer treatment. Chemotherapeutic medications attack the cancer

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cells in various ways. They destruct the cancer growth and also reduce the size of tumor. Chemotherapy medications are administered for various purposes like care, cure, and palliative [6].

Chemotherapy can be used to treat all types of cancer by terminating tumor cells and inhibiting them from metastasis. Chemotherapy also affects normal cells causing undesirable side effects, for reducing the side effects it will be administered in a cyclic pattern typically given in every 1st, 2nd, 3rd, or 4th week. A typical course may consist of numerous sequences. The following are the common side effects: nausea and vomiting, hair loss, oral mucositis, sores in mouth and throat, fatigue, constipation, diarrhea [7, 8].

The nutritional needs of patients with cancer vary from individual to individual. Healthcare teams need to take up the responsibility to teach the importance of maintaining good nutritional status as well as to cope up with the side effects of chemotherapy. If patients are maintaining nutritional status, they feel good and increase the tolerance towards chemotherapy. A standardized diet plan will provide all sufficient nutrients which help the patient to lower the risk of infection and helps to heal and recover. A balanced diet will support the patient's immune system to fight against the cancer cells even with the treatment side effects [7].

For the development of normal cells, a normal pattern of nutritional supply is very necessary. This nutrition can be supplied only through a balanced diet. Hence the diet has a crucial role in the success of chemotherapy [9–12].

Background of the Study

Chemotherapy is one major treatment module for cancer, but it has some major side effects. The side effects of chemotherapy like nausea, vomiting, fatigue, and pain will lead to reduction in food intake of patients. To reduce the side effects and improve the effectiveness of chemotherapy, patients need to maintain adequate diet supplements. A prospective study was conducted with an aim to evaluate the various treatment impacts on the diet pattern of patients and also identify the nutritional status of patients with breast cancer. The study's findings indicated that patients undergoing chemotherapy experience difficulties in preserving their weight. The study concluded that chemotherapy affects the patient nutritional status dramatically [5].

Objectives

- To assess the knowledge regarding diet of cancer patients who undergo chemotherapy among the caregivers in oncology units.
- To develop and deliver a structured educational program on the dietary needs of cancer patients undergoing chemotherapy.
- To evaluate the efficacy of the structured teaching program on the dietary habits of cancer patients undergoing chemotherapy among caregivers in oncology units.
- To investigate the correlation between caregivers' knowledge about the dietary requirements of cancer patients undergoing chemotherapy and specific socio-demographic factors.

METHODOLOGY

Research Design

Research designs are the direction of every research. In this research, the design selected was one-group pre-test–post-test design (Figure 1).

Variables

The study was adopted with both independent and dependent variables.

Independent Variable

In this research, the independent variable is the structured educational program focused on enhancing knowledge about the diet of cancer patients undergoing chemotherapy.

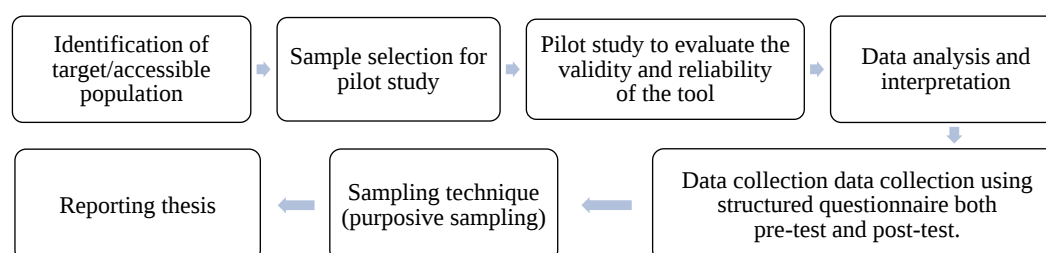


Figure 1. Research design.

Dependent Variable

In this investigation, the independent variable is represented by the organized teaching program concerning the understanding of the dietary aspects for cancer patients undergoing chemotherapy.

Setting of the Study

Selected hospitals at Thane and Dombivli.

Sampling Technique

The sampling technique used in this study is purposive sampling.

Sample Size

The sample size for this research is 40 caregivers in selected hospitals.

Research Tool

A questionnaire was used in this study.

Section I

This includes demographic factors such as age, gender, professional qualifications, monthly income, caregivers' relationship, family history of cancer patients, and previous experience in caring for individuals with cancer.

Section II

The section on knowledge comprised a total of 30 structured questionnaires. It includes 6 items for knowledge regarding cancer, 3 items for knowledge regarding chemotherapy, and 21 items for knowledge regarding diet in chemotherapy.

RESULTS

In this study, out of 40 caregivers, 13 (32.5%) of the samples were from age group 20 to 29 years, 8 (20.0%) of them were from 30 to 39 years, 8 (20.0%) of them were from 40 to 49 years, 9 (22.5%) of them were from 50 to 59 years, and 2 (5.0%) of them were from >60 years. In the study, 26 (65%) of caregivers were men and 14 (35%) were women. Caregiver' education: The majority, 16 (40.0%), of them had qualified primary education, 15 (37.5%) of them had completed secondary education, and 9 (22.5%) were graduates. Caregiver' income: The majority, 17 (42.5%) of them had income less than INR 10,000, 13 (32.5%) of them had income between INR 10,001 and 20,000, 6 (15%) of them had income between INR 20,001 and 30,000, and 4 (10%) of them had income >30,001 rupees. A total of 15 (37.5%) caregivers were parents, 9 (22.5%) were siblings, and the frequency of husband and wife as caregivers in the sample were 5 (12.5%) and 11 (27.5%), respectively. In all, 7 (17.5%) of the caregivers have the history of cancer in the family and 33 (82.5%) of them have no history of cancer in the family. Out of the caregivers, 7 individuals (17.5%) had past encounters with family members diagnosed with cancer, while 33 individuals (82.5%) had no history of dealing with family members diagnosed with cancer. Based on the results of the analysis, the following conclusions can be drawn. In the pre-test seven samples (17.5%) belong to inadequate knowledge group, 29 samples (72.5%) belong to moderately adequate knowledge group, and 4 samples (10%) had adequate knowledge (Figure 2).

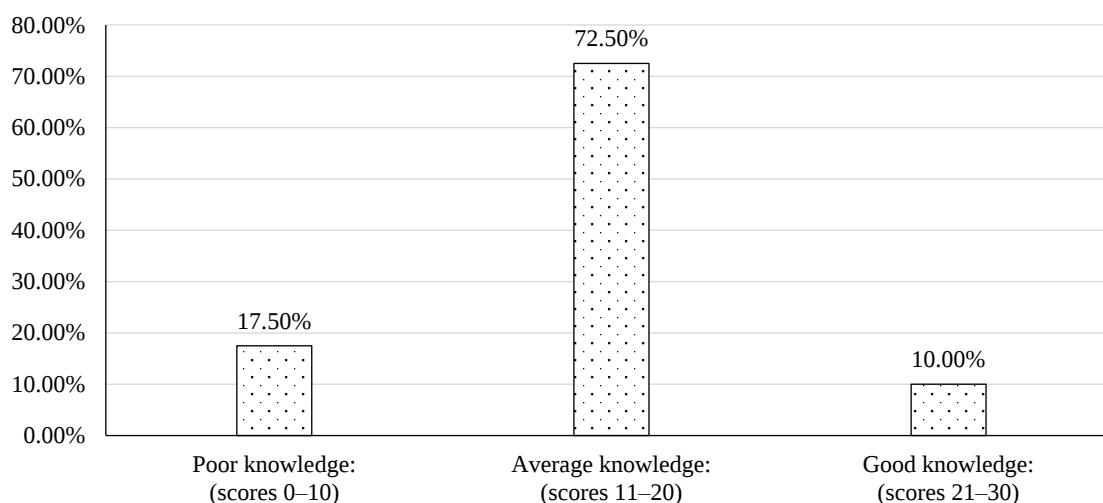


Figure 2. Knowledge score in pre-test.

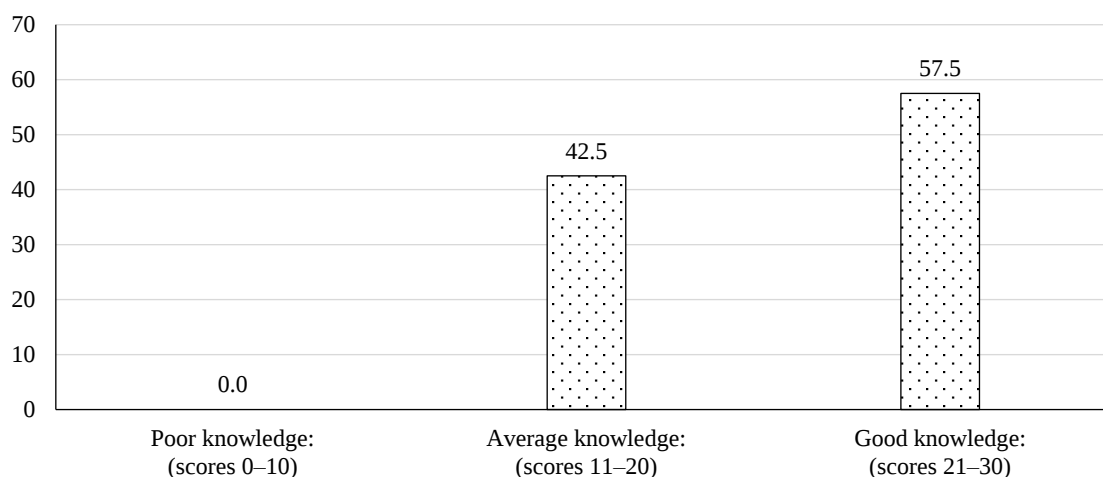


Figure 3. Knowledge score in post-test.

Table 1. Comparison of pre-test and post-test knowledge score.

Test	Mean	SD	t-Test	df	p
Pre-test	14.675	4.226	16.928	39	0.000
Post-test	21.800	4.207			

In the post-test, after the planned health teaching program, there was no sample in inadequate knowledge group, 17 samples (42.5%) belonged to moderately adequate knowledge group, and 23 samples (57.5%) got promoted to adequate knowledge group (Figure 3).

The mean of the post-test knowledge score was 14.675. Following the implemented health teaching program, there was an enhancement in the caregivers' knowledge levels, with a mean score of 21.800. The 't' value 16.928 was significant at 0.000 level which means there was a significant hike in the knowledge level of caregivers after the implementation of planned health teaching program (Table 1).

The statistical assessment was done by using paired t-test. The 'p' value was found at the level 0.000, by comparing the means of both pre-test and post-test. As the $p < 0.005$, the test is significant at the level 0.000. Hence the planned teaching was highly effective. The knowledge level of caregivers regarding diet of cancer patients undergoing chemotherapy increased significantly.

Since p -value is checked at the 0.000 (<0.05) level, the planned teaching is statistically significantly effective in improving knowledge of caregivers regarding diet of cancer patients undergoing chemotherapy. The mean knowledge of caregivers concerning the diet of cancer patients undergoing chemotherapy demonstrates improvement following the implementation of the planned teaching. Consequently, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted, signifying a significant difference in knowledge scores between the pre-test and post-test phases. There was no significant association established between variables like age, gender, qualification, monthly income, relation with the patient, history of cancer patient in the family, previous experience in handling cancer patients.

DISCUSSION

This study discussed the need and the importance of diet in patients receiving chemotherapy and educates both the caregivers and the patient regarding diet. The study pre-test results show that the patients and their caregivers have very less knowledge regarding the diet management and the need. After the implementation of the planned teaching program, they acquired good knowledge, it benefited the patients.

CONCLUSION

The findings of the study helped the researchers to come to a conclusion that it is necessary to provide information about diet in chemotherapy to the caregivers as it reduces the risk of side effects and patients will be able to tolerate the chemotherapy regimen better.

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