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Research Article

A Study to Assess the Effectiveness of Planned Teaching Program Regarding Prevention and Management of Side-effects of Chemotherapy in Terms of Knowledge and Attitude among Cancer Patients: A Pre-experimental Study

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Abstract

Introduction: Cancer describes the disease that results when cellular changes cause the uncontrolled growth and division of cells. Although chemotherapy is an effective way to treat many types of cancer, chemotherapy treatment also carries a risk of side-effects. Planned teaching program (PTP) is one of the most effective teaching strategies, which can be used for improving the knowledge of cancer patients.

Aim: The aim of the study was to assess the effectiveness of PTP in improving the knowledge and attitude of cancer patients in the prevention and management of side-effects.

Methodology: Research design used in the study was pre-experimental (one group pre-test and post-test) design. A total of 35 samples were selected using a systematic random sampling technique. PTP was developed. A structured knowledge questionnaire and attitude rating scale were used to collect the demographic characteristics and assess the level of knowledge and attitude followed by PTP and post-test.

Results: The findings revealed that pre-test knowledge score was (12.65±4.19) and post-test knowledge score (25.54±3.39). The "*t*" value (17.40) was found to be significant at 0.05 level of significance. Pre-test attitude score was (68.51±9.79) and post-test attitude score was (79.62±7.87). The "*t*" value (8.07) was found to be significant at 0.05 level of significance. There was a weak positive correlation 0.43 that existed between the knowledge and attitude scores.

Conclusion: The study concluded that the PTP was effective in increasing the knowledge scores and attitude scores regarding the prevention and management of side-effects of chemotherapy. Early diagnosis remains the cornerstone in cancer control with a comprehensive education on the prevention and management of side-effects of chemotherapy.

Keywords: Attitude, Knowledge, Planned teaching program, Side-effects of chemotherapy

Introduction

With changing lifestyle, improved longevity, and better control of infectious diseases, non-communicable diseases have emerged as major health problems worldwide, more so in developing countries. After cardiac diseases, cancer has emerged as an important cause of morbidity and mortality in India. According to the National Centre for Disease Informatics and Research of the Indian Council of Medical Research at Bengaluru, India, 1.45 million cases of cancer were estimated to be diagnosed in 2016.[1]

Almost 75–80% of patients have advanced disease (stage 3–4) at the time of diagnosis. This has been attributed to the late presentation which in turn is due to the low level of awareness in the population and among community physicians, lack

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of screening programs, lack of diagnostic facilities locally and vast distances to travel to reach a major tertiary cancer center, financial constraints, and stigma associated with the diagnosis. The situation is even worse in rural areas (69% of the total population) where patients and families have to travel a long distance to reach a tertiary care oncology center. Lack of place to stay, long time taken for investigations, limited finances, language, and cultural differences are also some of the limitations.[2]

The study of Tian and Jia[3] revealed that patient education has associations with side effects, daily protein intake, depression, and performance status. Providing treatment and rehabilitation-related knowledge can result in increased protein intake, a lower risk of depression, reduced severity of side effects, and an improved performance status.

A study done by Reena.[4] On 74 cancer patients at Bhaktapur Cancer Hospital reported 43% had an average level of knowledge, 29% had poor knowledge, and only 2% had good knowledge regarding the management of chemotherapy-related side-effects.

A study done by Manisha and Dahiya[5] on 200 cancer patients at Rohtak, India, found that the planned teaching program (PTP) was effective in increasing the knowledge of the patients regarding side-effects of cancer and their management.

Thus, it was felt that there is a need for a study to evaluate the effectiveness of a PTP on the knowledge and attitude of cancer patients regarding the prevention and management of side-effects of chemotherapy.

Statement of the problem

A pre-experimental study to assess the effectiveness of planned teaching program on prevention and management of side-effects of chemotherapy in terms of knowledge and attitude among patients with cancer in selected hospital of New Delhi.

Aim

The aim of the study was to assess the effectiveness of PPT on the prevention and management of side-effects of chemotherapy in terms of knowledge and attitude among patients with cancer.

Objectives of the study

The objectives of the study were as follows:

1. To develop a PTP regarding the prevention and management of side-effects of chemotherapy
2. To assess the effectiveness of PTP on the prevention and management of side-effects of chemotherapy in terms of gain in knowledge scores
3. To assess the effectiveness of PTP on the prevention and management of side-effects of chemotherapy in terms of gain in attitude scores
4. To relate knowledge with the attitude of patients with cancer on the prevention and management of side-effects of chemotherapy.

Hypothesis

H_1-There will be a significant difference between the mean of pre-test and post-test knowledge scores of patients undergoing chemotherapy at 0.05 level of significance.

H_2-There will be a significant difference between the mean of pre-test and post-test attitude scores of patients undergoing chemotherapy at 0.05 level of significance.

Ho_1-There will be no significant difference between the mean of pre-test and post-test knowledge scores of patients undergoing chemotherapy at 0.05 level of significance.

Ho_2-There will be no significant difference between the mean of pre-test and post-test attitude scores of patients undergoing chemotherapy at 0.05 level of significance.

Methodology

Research approach

This study was a quantitative research approach.

Research design

The research design used in the study is a pre-experimental (one group pre-test and post-test) design.

Setting of the study

The study was conducted in Rajiv Gandhi Cancer Hospital and Research Centre, New Delhi.

Target population

Cancer patients undergoing chemotherapy in New Delhi.

Sample

Cancer patients undergoing 1st cycle of chemotherapy from a selected cancer hospital of New Delhi.

Sampling technique

Purposive sampling technique was used in the selection of the hospital and systematic random sampling technique was adopted while selecting the subjects.

Sample size

Thirty-five cancer patients undergoing 1st cycle of chemotherapy.

Criteria for selection of sample

Inclusion criteria

The following criteria were included in the study:

- The patients undergoing 1st cycle of chemotherapy
- Patients who are willing to participate in the study
- Patients who can read, write, and understand Hindi or English
- Patients who are available at the time of study.

Exclusion criteria

The following criteria were excluded from the study:

- Patients not present at the time of the study
- Those who are not willing to participate in the study.

Data collection tool and technique

A structured knowledge questionnaire and attitude rating scale were used to assess the knowledge and attitude of cancer patients.

Tool: It consists of three sections:

- Section I – Sociodemographic variables – The sociodemographic variables included age, gender, education, occupation, monthly income, type of cancer, and source of information
- Section II – Structured knowledge questionnaire – This section included two parts, part I consisted 10 true/false questions and part II consisted 20 multiple choice questions regarding the prevention and management of side-effects of chemotherapy. The maximum score was 30 and minimum score was 0. Each right response carries one mark and wrong response carries 0 marks
- Section III – Attitude rating scale – This section was prepared to assess the attitude of cancer patients undergoing chemotherapy regarding chemotherapy treatment, its side-effects, prevention, and management of side-effects. It consisted of 20 statements, including 10 positive and 10 negative statements.

Content validity of tool

Content validity was ascertained in consultation with 11 experts in the field of medical-surgical nursing and oncology. The tool was modified as per the suggestion of experts and final tool was constructed

Tool translation

English version of the tool was translated in Hindi language and back from Hindi to English to counter check the translation.

Reliability of the tool

The reliability of attitude rating scale was checked using Cronbach's alpha formula. It was found 0.78 and the tool was found reliable.

Data collection procedure

- The investigator obtained written permission from concerned authorities
- Identified the sample using a systematic random sampling technique
- Written informed consent taken from the participants
- Pre-test administered to assess the knowledge and attitude of cancer patients
- PTP was conducted
- Post-test was administered on the 6th or 7th day.

Results

Major findings

Section I: Demographic characteristics of cancer patients.

Majority of the cancer patients, i.e., 15 (42.86%), were in the age group of 40–59 years, 11 (31.43%) were in the age group of 21–39 years, 8 (22.86%) were in the age group of 60 years and above, and 1 (2.85%) were in the age group of 20 and below 20 years of age. Almost equal number of cancer patients, i.e., 18 (51.43%), were males and 17 (48.57%) were females.

Majority of patients, i.e., 7 (20%), were having breast cancer, 6 (17.15%) were having stomach cancer, 4 (11.43%) were having ovarian cancer, 4 (11.43%) were having cervix cancer, 4 (11.43%) were having cancer of the pancreas, 3 (8.57%) were having head and neck cancer, 3 (8.57%) were having prostate cancer, 2 (5.71%) were having lymphoma, and 2 (5.71%) were having cancer of the spine. Majority of cancer patients, i.e., 26 (74.29%), were taking chemotherapy treatment without any surgery and 9 (25.71%) were taking chemotherapy after surgery.

Majority of cancer patients, i.e., 19 (54.29%), had information about side-effects of chemotherapy and 16 (45.71%) did not have information about side-effects of chemotherapy.

Majority of cancer patients, i.e., 10 (52.63%), got the information from the doctor, 6 (31.58%) got information from internet, and 3 (15.79%) got information from their relatives.

Section II: Findings related to the knowledge of the cancer patients regarding the prevention and management of side-effects of chemotherapy.

The data presented in Table 1 shows that in pre-test, majority of the cancer patients 22 (62.86%) were having average knowledge, 11 (31.43%) were having poor knowledge, and only 2 (5.71%) were having good knowledge regarding the prevention and management of side-effects of chemotherapy.

In post-test, after the administration of PPT, majority of the cancer patient, i.e., 32 (91.43%), were having good knowledge and 3 (8.57%) were having average knowledge regarding the prevention and management of side-effects of chemotherapy.

Section III: Findings related to the effectiveness of PTP on knowledge scores.

The data presented in Table 2 shows that pre-test mean of knowledge scores was 12.65 and standard deviation (SD) was 4.19. Post-test mean of knowledge scores was 25.54 and SD was 3.39.

Table 1: Frequency and percentage distribution of cancer patients' level of knowledge regarding prevention and management of side-effects of chemotherapy (n=35)

Score	Level of knowledge	Pre-test		Post-test	
		Frequency	Percentage	Frequency	Percentage
0–10	Poor knowledge	11	31.43	0	0
11–20	Average knowledge	22	62.86	03	8.57
21–30	Good knowledge	02	5.71	32	91.43

The mean of pre-test scores was 12.65 and the mean of post-test score was 25.54 with a mean difference of 12.89. The SD of the pre-test score was 4.19 and post-test was 3.39, which was found to be statistically significant, as evident from the *t*-test = 17.40 for the degree of freedom 34 at 0.05 level of significance.

Section IV: Findings related to the attitude of the cancer patients regarding the prevention and management of side-effects of chemotherapy.

The data presented in Table 3 shows that in pre-test and post-test, all the cancer patients, i.e., 35 (100%), were having a positive attitude regarding chemotherapy treatment, its side-effects, and prevention and management of side-effects.

Section V: Findings related to the effectiveness of PTP on attitude scores.

The pre-test mean attitude score was 68.51 and SD was 9.79. Post-test attitude score was 79.62 and SD was 7.87.

The mean of pre-test scores was 68.51 and the mean of post-test score was 79.62 with a mean difference of 11.11. The SD of pre-test score was 9.79 and post-test was 7.87, which was found to be statistically significant, as evident from the *t*-test value of 8.07 for the degree of freedom 34 at 0.05 level of significance.

Section VI: Correlation between knowledge and attitude of cancer patients.

The mean of pre-test knowledge score is 12.65 and mean of pre-test attitude score is 68.51. The correlation was found to 0.43. This shows that there was a weak positive correlation between knowledge and attitude scores [Table 4].

Therefore, it was concluded that there was a significant increase in the knowledge scores of cancer patients regarding the prevention and management of side-effects of chemotherapy after the planned teaching program. Hence, null hypothesis H_{01} was rejected and research hypothesis H_1 was accepted. There was a significant increase in the attitude scores of cancer patients regarding the prevention and management of side-effects of chemotherapy after the planned teaching program. Hence, null hypothesis H_{02} was rejected and research hypothesis H_2 was accepted.

Discussion

The present study assessed the effectiveness of PTP on knowledge and attitude regarding the prevention and management of side-effects of chemotherapy. Majority (62.86%) of the cancer patients were having average knowledge. In congruence with Reena,[4] majority (58.1%) had average knowledge about the management of side-effects of chemotherapy. Similar findings were also reported by a study conducted by Choenyi.[6] On 60 cancer patients in 2013, the majority (63%) of the cancer patients had average knowledge.

In the present study, all the cancer patients had a positive attitude toward the management of side-effects of chemotherapy. The findings are consistent with the findings of the study conducted by Katabalo *et al*.[7] in 2018. The majority of cancer patients, i.e., 92.1% had a positive attitude.

In the present study, pre-test scores of majority cancer patients, i.e., 62.86%, had an average level of knowledge, 31.43% had a poor level of knowledge, and 5.71% had a good level of knowledge. In post-test scores, majority of cancer patients 91.42% had a good level of knowledge and 8.57% had good level of knowledge which was found to be statistically significant as evident from the *t*-test value of 17.40 for the degree of freedom 34 at 0.05 level of significance. This shows that there was a significant increase in the knowledge scores of cancer patients regarding the prevention and management of side-effects of chemotherapy after the administration of planned teaching program. In a similar study done by Preeti.[8] in 2017, the findings revealed that pre-test and post-test frequency and percentage of knowledge scores of respondents regarding home management and its side effects in terms of knowledge among patients receiving chemotherapy revealed that pre-test (13.34%) subjects had poor knowledge, 75% had average knowledge, and 11.66% had good knowledge scores, where post-test (6.67%) subjects had poor knowledge, 65% had average knowledge, and 28.33% had good knowledge scores. The effectiveness of PTP was assessed with paired *t*-test and it

Table 2: Mean, mean difference, mean percentage, standard deviation, and "*t*" value showing the effectiveness of planned teaching program on knowledge scores (*n*=35)

Test	Mean	Mean difference	Mean percentage	Standard deviation	i value	df	Table value
Pre-test	12.65	12.89	42.16	4.19	17.40*	34	2.03
Post-test	25.54		85.13	3.29			

*Significant at 0.05 level of significance

Table 3: Frequency and percentage distribution of cancer patients' attitude regarding prevention and management of side-effects of chemotherapy (*n*=35)

Score	Type of attitude	Pre-test		Post-test	
		Frequency	Percentage	Frequency	Percentage
<50	Unfavorable attitude	0	0	0	0
50–100	Favorable attitude	35	100	35	100

Table 4: Coefficient of correlation between the knowledge and attitude of cancer patients (n=35)

Variable	Mean	Standard deviation	r value
Knowledge	12.65	4.19	0.43
Attitude	68.51	9.79	

was revealed that there was a significant gain in knowledge at 0.05 level of significance.

Conclusion

The study concluded that the PTP was found to be effective in increasing the knowledge scores and attitude scores and a weak positive correlation existed between pre-test knowledge score and pre-test attitude score regarding the prevention and management of side-effects of chemotherapy.

Ethical Consideration

For the present study, the researcher obtained ethical clearance from the ethical committee of Holy Family Hospital, Okhla, New Delhi. Written permission was taken from the scientific committee of a selected cancer hospital. A written informed consent was taken from the participants.

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