

# A Study to Assess the Effectiveness of Structured Teaching Program on Knowledge Regarding “Home Management of Side Effects of Chemotherapy” among Parents

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## Abstract

**Objective:** The first objective of the study is to determine effectiveness of structured teaching programme on knowledge regarding home management of side effects of chemotherapy among parents. The second objective of the study is to find association between the pretest knowledge levels of parents with selected demographic variables.

**Methodology:** A quantitative research approach with quasi-experimental, one group pretest posttest design was used. The population for the study was parents of children receiving chemotherapy and the sample in the study was 51 parents of children receiving chemotherapy at cancer research institute, Himalayan hospital, SRHU. On the first day written consent was taken from the participants and collected the data by using tool 1-(demographic variables) and tool-2 (structured knowledge questionnaire) interview schedule. Same day structured teaching programme was given in the form of intervention. On the 7th day posttest was done by using same tool.

**Results:** The mean post-test knowledge score of parents is  $22.45 \pm 1.73$  which was significantly higher than the pretest knowledge score  $16.21 \pm 1.99$  there was a significant improvement in the knowledge of parents regarding home management of side effects of chemotherapy. Paired 't' test was calculated to find the significant difference between means of pretest and posttest knowledge scores. The calculated 't' value was 17.37 which is more than the table value 2.009. (df=50 at  $p < 0.05$ ). Chi-square test was performed to find association, only one variable relation with child was significant.

**Conclusion:** It was concluded that the structured teaching programme on home management of side effects of chemotherapy was effective in increasing knowledge of parents.

**Keywords:** Knowledge; Home management of side effects; Effectiveness; Structured teaching programme

## Introduction

Cancer is a most leading cause of death among children's in all over the world. The incidence rate of the cancer is increasing in developing countries. In 2011 approximately 12.66 million new cancer cases registered and 7.56 million deaths eventuate. Leukemia is the eminently frequent type of cancer in children's (34%), second recurrent cancer is brain tumor (23%) and third is lymphomas (12%) [1]. Parents is experiencing the difficulties with the children's having cancer and endured through the chemotherapy. They need more skills and knowledge to enhance the quality of life of children [2] in 2016 approximately 1,685,210 new cancer cases diagnosed in United States and 595,690 people die from the disease. Cancer has a burden on peoples of United States and all over the world. Cancer statistics shows the cancer burden on peoples. With the help of statistics we know about the number of peoples diagnosed with cancer every year and how many peoples live with cancer [3]. Indian council for medical research shows that childhood cancer was 2.5% of the total number of all the cancer cases. Tata memorial center in Mumbai's parel area alone

handle 2,000 new pediatric cancer cases annually. According to Dr. Gauri Kapoor, director and head of pediatric oncology at Rajiv Gandhi Cancer Institute and Research Centre Delhi, cancers have been seen increase in numbers due to technological preferment and industrialization. 50,000 childhood cancers found every year out of eight lakh cancer diagnoses [4]. In India guesstimate 40-50,000 new childhood cancer cases eventuate every year. Most of the cases diagnosed with cancer are equitably found as advance stages of cancer. In India 70% of children die with cancer because of lack of knowledge about cancer, late diagnosis, deficiency of facilities, high cost of treatment of cancer and deprivation of supportive care [5] across the past three decades enhancement in the treatment of children with cancer led to significant increase in number of children live into adulthood. It is evaluate that there are more than 328,000 peoples in the United State survived with cancer diagnosis before the age of 20 years and now one in every 640 young adults is now cancer survivor of childhood cancer [6]. According to the current report of United State cancer statistics cancer cases diagnosed and cancer deaths occurred from 1999 through 2014. Every year of data includes more than 1.5 million cases of invasive cancer cases of invasive cancer, including 15,000 cases among children's younger than 20 years [7]. Chemotherapy works in different ways and damages the cancer cells

and slows down the growth of fast growing cancer cells. It can also damage the normal healthy cells. Supportive drugs are used to manage the side effects of chemotherapy [8]. Chemotherapy, radiation therapy and surgery are the choice of treatment of cancer. Patients usually take the treatment for two to three years and a significant portion of the chemotherapy is now given while the patient stays at home [9]. Leukemia is the second leading cause of death among children's in the age of 5 years to 14 years. Maximum children's develop neutropenia during the treatment period of cancer [10]. The most common treatment of cancer is chemotherapy, radiation therapy, immunotherapy and surgery. The type of treatment depends upon the stage of cancer. According to statistics of 2010 about 6 lakhs patients underwent the chemotherapy [11]. In Mexico, cancer is the leading cause of mortality among children's between the age group of 4 to 15 years. The early detection and treatment for cancer can improve the condition of the children's with cancer [12] every child is treated according to the stage and the type of cancer. Most common treatment used for the treatment of cancer is chemotherapy. Chemotherapy is given in many cycles because it can also affect the normal healthy cells. Once the cycle is completed the side effect of chemotherapy is reduced [13] the most common side effects of chemotherapy is bone marrow suppression, gastrointestinal disorders, hair loss, fatigue, skin infections. Few drugs specific side effects have been also identified. Like anthracyclines and bleomycin are associated with cardiotoxicity and pulmonary toxicity. The effective management of side effect of chemotherapy can improve the quality of life if children's [14]. Chemotherapy induces nausea and vomiting which are frequently limiting and prevent with a serotonin receptor agonist and the steroid dexamethasone. This treatment is less effective in children's than adults [15].

## Statement of Problem

A study to assess the effectiveness of structured teaching programme on knowledge regarding home management of side effect of chemotherapy among parents in Cancer Research Institute, Jolly Grant, Dehradun.

## Objectives of the Study

1. To determine the effectiveness of structured teaching programme on knowledge regarding home management of side effects of chemotherapy among parents.
2. To find association between the pretest knowledge score of parent with selected baseline information of subjects as well as child.

## Variables

### Independent variables

Structured teaching programme is the independent variable.

### Dependent variables

Knowledge of parents of children is the dependent variable in the study.

## Assumption

1. Parents of children with cancer undergoing chemotherapy might be experiencing problems in taking care side effects of chemotherapy.
2. Samples will be true representative to the population.

## Hypothesis

**H1:** The mean posttest knowledge score would be significantly higher than the mean pretest knowledge score among the parents.

**H2:** There would be significant association between pretest knowledge score of parents and selected demographic variables.

## Methodology

### Design and setting

A quantitative research approach was used for the study. Quasi experimental one group pretest posttest design was used in the study. The study was conducted in Cancer research institute, Jolly Grant, Dehradun.

### Study sample

In this study consecutive sampling technique was used to select sample from particular area. Sample size was 51 parents of children receiving chemotherapy.

### Data collection procedure

The data was collected in cancer research institute, pediatric oncology. All participants who fulfilled the inclusion criteria were included in study, a total fifty one (51) parents of children receiving chemotherapy were taken in study. Written consent was obtained from the each participant before conducting data. Interview schedule was used as method of collecting data. Using tool the baseline information of the parents and children's and structured knowledge questionnaire. Same day structured teaching was given in the form of intervention. On 7th day knowledge was assessed by using same tool.

The tools consist of the following:

- Tool 1 : Demographic profile
- Tool 2 : Structured knowledge questionnaire

**Description of tools:** The most important aspect of any investigation is the collection of appropriate information which provides necessary data to answer the question raised in the study. For this questionnaire were prepared for the data collection. Following steps were taken to develop the tools: Review of Literature, opinion and suggestion from experts and the investigator's own experience in the clinical field.

### Section A: Demographic profile of parents as well as children

Baseline information included age of parent and child, gender, education, occupation, diagnosis of child, time of receiving chemotherapy, information regarding chemotherapy, completed chemo cycles. Clinical data gathered from the patient's record included the type of cancer and day of receiving chemotherapy.

S. No.	Demographic variables	Frequency (f)	Percentage (%)
1	<b>Age of parents</b>		
	a) 25-35 years	38	74.5
	b) Above 35 years	13	25.5
2	<b>Relation with child</b>		
	a) Mother	34	66.7
	b) Father	17	33.3
3	<b>Education of parents</b>		
	a) Literate	39	76.5
	b) Illiterate	12	23.5
4	<b>Occupation of parents</b>		
	a) Working	20	39.2
	b) Nonworking	31	60.8
5	<b>Age of child</b>		
	a) 5-10 years	28	54.9
	b) 11-18 years	23	44.1
6	<b>Gender of child</b>		
	a) Male	32	62.7
	b) Female	19	37.3
7	<b>Diagnosis of child</b>		
	a) Blood cancer	43	84.3
	b) Organ cancer	8	15.7
8	<b>Duration of receiving chemotherapy</b>		
	a) 1 month-1 year	27	52.9
	b) Above 1 year	24	47.1
9	<b>Information about chemotherapy</b>		
	a) Yes	7	13.7
	b) No	44	86.3
10	<b>Chemo cycles completed</b>		
	a) One to three cycles	37	72.5
	b) Four to six cycles	14	27.5

**Table 1:** Frequency and percentage distribution of baseline information.

## Section B: Structured knowledge questionnaire on home management of side effects of chemotherapy

Structured knowledge questionnaire consisted of 30 multiple choices questions which was tested knowledge on the aspect of management of side effects of chemotherapy. The items included from

these side effects like nausea, vomiting, diarrhea, mouth sores and skin changes. There are four distractions given in each item, only single answer is correct and given score of 1 if correct and if wrong score is 0.

## Analysis and interpretation

Analysis of study findings are organized under the following headings:

**Section 1:** Frequency and percentage of demographic variables.

**Section 2:** Knowledge regarding home management of side effects of chemotherapy.

**Section 3:** Association between pretest knowledge score of parents with selected demographic variables.

## Section 1: Frequency and percentage distribution of baseline information of subjects as well as child

Table 1 shows that majority (74.4%) of the study participants were in the age group between 25-35 years. More than half (54.9%) child in the age group of 5-10 years, two third (62.7%) children's were male, half of population (54.9%) had blood cancer. Approximately (68.6%) children was receiving chemotherapy on 2nd day after admission. Around (52.9%) children were receiving chemotherapy from one month to one year. Maximum mothers (66.7%) were staying with children more than half of population (76.5%) had education. Approximately (60.8%) participants were non-working. Majority (86.3%) parents were not aware about home management of side effects of chemotherapy. Most of the patients (72.5%) were in the induction period and completed 1-3 chemo cycle.

## Section 2: Analysis of knowledge regarding home management of side effects of chemotherapy

**Objective 1:** To determine the effectiveness of structured teaching programme on home management of side effects of chemotherapy among parents.

N=51				
Knowledge score		Range	't'-value	P value
Pre test	16.21 ± 1.99	12-20	17.37	0.001
Mean ± SD				
Post Test	22.45 ± 1.73	19-26		
Mean ± SD				
't' tabulated=2.009 at df=50 level of significance<0.05				

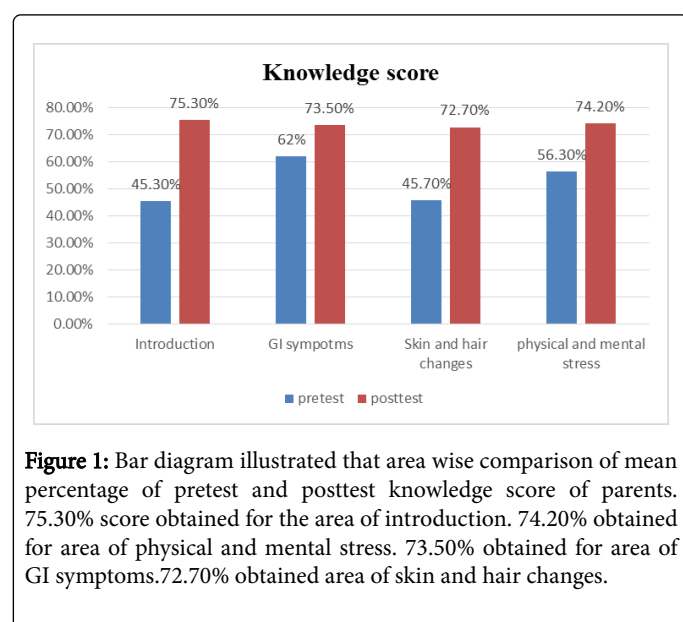
**Table 2:** Mean, Standard deviation and 't' test of knowledge score among parents of children receiving chemotherapy.

Table 2 depicts that the pre-test knowledge score was 16.21 ± 1.99 which has increased to post-test knowledge score 22.49 ± 1.77. Paired sample 't' test was calculated to find the significant difference between means of pre-test and post-test knowledge scores. The calculated 't' value was 17.37 which was more than the table value 2.009 (df=50 at p<0.05). Hence the null hypothesis was rejected and research hypothesis was accepted. This significant improvement in the knowledge can be attributed to the intervention.

N=51					
S.No	Area wise knowledge	Range pretest	Range posttest	Mean SD (Pre-test)	Mean $\pm$ SD (posttest)
1	Introduction	0-5	03-06	2.72 $\pm$ 0.91	4.52 $\pm$ 0.75
2	Skin and hair changes	01-6	05-08	4.96 $\pm$ 1.31	5.88 $\pm$ 1.08
3	GI symptoms	0-6	03-08	3.27 $\pm$ 1.25	5.09 $\pm$ 1.00
4	Physical and mental stress	03-7	03-08	5.07 $\pm$ 1.11	6.68 $\pm$ 1.17

**Table 3:** Area wise comparison of mean and SD of pretest and posttest knowledge score regarding home management of side effects of chemotherapy.

Table 3 depicts the area wise mean, standard deviation, mean percentage of knowledge score. The findings revealed that there was significant increase in posttest knowledge score of all four areas. The highest mean score were 5.078 that is the area of Physical and mental stress and the lowest were 2.76 that is Introduction. The highest mean difference were 2.14 which belong to 4th area were skin and hair changes. Hence there was a significant increase in posttest knowledge score on all 4 areas compared to pretest knowledge of all 4 areas (Figure 1).



**Figure 1:** Bar diagram illustrated that area wise comparison of mean percentage of pretest and posttest knowledge score of parents. 75.30% score obtained for the area of introduction. 74.20% obtained for area of physical and mental stress. 73.50% obtained for area of GI symptoms. 72.70% obtained area of skin and hair changes.

### Section C: Association between pretest knowledge score of parents with selected demographic variables

**Objective 2:** To find the association between the pretest level of knowledge of parents with selected demographic variables.

Table 4 depicts that the association between pre intervention knowledge score with selected demographic variables. Since all data were categorical in nature, chi-square test was performed to find association.

S. No.	Demographic profile	Below median (<16)	At above median 16) and (≥	Chi-square and Yates correction (#)	P. value
1	Age of parents				
	a) 25-35 years	13	25	0.591	0.442
	b) Above 35 years	6	7		
2	Age of child				
	a) 5-10 years	8	20	2.004	0.157
	b) 11-18 years	11	12		
3	Gender				
	a) Male	12	20	0.002	0.963
	b) Female	7	12		
4	Diagnosis of child				
	a) Blood cancer	16	27	0.155	0.987
	b) Organ cancer	3	5		
5	Duration of receiving chemo cycle				
	a) 1 month-1 year	10	17	0.001	0.973
	b) Above 1year	9	15		
6	Relation with child				
	a) Mother	9	25	5.075	0.024
	b) Father	10	7		
7	Education of parent				
	a) Literate	14	25	0.131	0.718
	b) Illiterate	5	7		
8	Occupation of parent				
	a) Working	10	10	2.286	0.077
	b) Nonworking	9	22		
9	Information about chemotherapy				
	a) Yes	3	4	0.109	0.741
	b) No	16	28		
10	Chemo cycle completed				
	a) Less than three cycles	21	16	0.006	0.14
		8	6		

**Table 4:** Association between pre intervention knowledge score with selected demographic variables.

The result showed that there is no statistically significant association between knowledge score and their selected demographic variable in terms of age of parents (0.442), age of child (0.157), gender (0.963),

diagnosis of child (0.987), day of receiving chemotherapy (0.065), first time of receiving chemotherapy (0.973), education of parents (0.718), occupation of parents (0.131), previous information about chemotherapy (0.741). Chemotherapy cycles (0.006) completed only one variable relation with child (0.024) were significant. So it can be concluded that demographic variables have no impact on the knowledge of the participants.

## Discussion

### Section A: Description of demographic variables of study participants

Findings of the present study show that majority (74.4%) of the study participants were in the age group between 25-35 years. Around more than half (54.9%) children in the age group of 5-10 years, two third (62.7%) children were male, half of population (54.9%) had blood cancer. Approximately (68.6%) children were receiving chemotherapy on 2nd day after admission. Around half of (52.9%) children were receiving chemotherapy from one month to one year. Maximum mothers (66.7%) were staying with children in the hospital. Majority of parents (76.5%) were educated. Approximately (60.8%) participants were non-working. Majority of (86.3%) sample were not aware about home management of side effects of chemotherapy.

Finding of the study are consistent with the study conducted by M.P, Nikhitha et al. to assess the knowledge of parents in Kochi, Kerala, India [10]. Study showed that 53.3% parents were in age group of 31-40 years, 50% children's in the age group of 4-7 years, 56.7% children's were male, majority of the children's were taking chemotherapy from one-two years.

### Section B: Effectiveness of structured teaching programme on home management of side effects of chemotherapy

Finding of the present study showed that the pre-test knowledge score was  $16.21 \pm 1.99$  which has increased to post-test knowledge score  $22.45 \pm 1.73$ . Paired sample 't' test was calculated to find the significant difference between means of pre-test and post-test knowledge scores. The calculated 't' value was 17.37 which is more than the table value 2.009 (df=50 at  $p < 0.05$ ). Hence the null hypothesis was rejected and research hypothesis was accepted. This significant improvement in the knowledge can be attributed to the intervention.

Finding of the study are consistent with the study conducted by Novrianda Dwi, Khairinalla to assess knowledge of parents regarding home management of side effect of chemotherapy. Pre-test knowledge score was  $180.83 \pm 14.43$  which has increased to posttest knowledge score  $226.9 \pm 11.76$ .

### Section C: Association between pre intervention knowledge score with selected demographic variables

The association between pre intervention knowledge score with selected demographic variables. Since all data were categorical in nature, chi-square test was performed to find association. The result

showed that there is no statistically significant association between knowledge score and their selected demographic variable in terms of age of parents (0.442), age of child (0.157), gender (0.963), diagnosis of child (0.987), day of receiving chemotherapy (0.065), first time of receiving chemotherapy (0.973), education of parents (0.718), occupation of parents (0.131), previous information about chemotherapy (0.741). Only one variable relation with child (0.024) was significant. So, it can be calculated that demographic variables have no impact on the knowledge of the participants.

## Conclusion

It is concluded that structured teaching programme on knowledge regarding home management of side effects of chemotherapy was found effective in increasing knowledge of parents of children receiving chemotherapy.

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