

Evaluation of Effectiveness of Information Booklet Regarding Self-Care among Patients Receiving Chemotherapy in Selected Hospitals of Wardha and Nagpur, India

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ABSTRACT

BACKGROUND

The incidence rate for cancer reflects the number of new cases occurring in a specific population during a year, expressed as the number of cancer diagnosis per 10,000 people. Cancer is globally a major cause of death and morbidity and is currently witnessing an exponential increase in the number of malignancies. The present study was conducted to assess the knowledge regarding self-care among patients receiving chemotherapy, to evaluate the effectiveness of information booklet regarding self-care among patients receiving chemotherapy and to find out the association between knowledge score regarding self-care among patients receiving chemotherapy in selected hospitals.

METHODS

An experimental study was undertaken on 60 purposively selected patients receiving chemotherapy in selected hospitals of Wardha and Nagpur district. One group pre-test post-test research design was used in the study. Data was collected by using structured questionnaire during the month of December 2019. The duration of study was for 5 months from October 2019 to February 2020.

RESULTS

The findings of the study show that 33.33 % patients had average knowledge score, 61.67 % patients had good knowledge score and 5 % patients had very good knowledge score in pre-test. Minimum knowledge score was 8 in pre-test and maximum knowledge score was 23 in pre-test. Mean knowledge score in pre-test was 15.53 ± 2.98 and mean percentage of knowledge score in pre-test was 44.38 ± 8.52 . 11.67 % of patients had good knowledge score, 81.67 % of patients had very good knowledge score and 6.67 % of patients had excellent knowledge score in post-test. Minimum knowledge score was 20 in post-test and maximum knowledge score was 30 in the post-test. Mean knowledge score in pre-test was 24.61 ± 2.53 and mean percentage of knowledge score in post-test was 70.33 ± 7.25 . It indicates that information booklet is effective in improving knowledge of patients receiving chemotherapy.

CONCLUSIONS

Patients receiving chemotherapy have average knowledge regarding chemotherapy self-care. After providing information booklet, there was a very significant increase in the knowledge. The combined 't' test was assessed in all hospitals for value of pre-test knowledge and post-test knowledge score. Thus, it is concluded that the booklet on chemotherapy self-care is effective in improving the knowledge of patients receiving chemotherapy.

KEY WORDS

Cancer, Chemotherapy, Effectiveness, Self-Care

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BACKGROUND

Cancer is the major cause of death worldwide. This problem is expected to rise universally, due to an aging population. Today, toxic habits such as smoking, unhealthy diet, sedentary lifestyle and reproductive changes have increased cancer risks.¹ Chemotherapy is used as an important part of the multimodal approach to manage various malignancies.²

At present cancer is becoming one among the foremost current illness round the world. According to that, World Health Organization (WHO) estimates that the incidence of cancer will rise in following decades. In fact, this disease is estimated to be the second most common cause of death. Throughout the world, cancer ranks as the third important health problem. Unlike other illnesses, the treatment of cancer is for long duration and it is interspersed with complications and frequent admissions to hospital. Latest advancements in cancer care, especially in the development of novel chemotherapeutic and bio-therapeutic agents, have resulted in an increase of survival in cancer patients. Chemotherapeutic medications have been used in cancer therapy for several years.³

Cancer and its management present challenges to the health care system. More patients are undergoing chemotherapy in outpatient treatment centers than ever before because it is of least-cost and efficient for the patient. Patients have been treated with chemotherapy for hours in an outpatient clinic or doctor's office. Cancer patients undergoing chemotherapy need guidance on the medications they are taking and the self-care they need to take to help avoid severe complications.⁴

Cytotoxic medications also known as chemotherapy drugs, antineoplastic, anticancer drugs contain a wide variety of chemical substances. They are widely used to treat cancer because of their ability to kill cancer cells by disrupting cell division.⁵ Chemotherapy is a procedure that uses therapeutic substances or drugs to kill cancer cells in the cell cycle process, or to use substances or medications to prevent cancer cell overgrowth and spreading.⁶

The main objective of treating the patient with chemotherapy is to maximize the death of tumour cells while sparing those normal cells with a high mitotic index to cure the client with cancer and control the growth when cure is not possible.⁷ Self-care is commonly used as a wider concept encompassing all measures taken by people to improve their own health and well-being, while self-management focuses more on the ability to handle day-to-day issues arising from and long-term health issues.⁸

Cancer may have multiple effects on quality of life of cancer patients. Cancer may induce socioeconomic difficulties, depression and social withdrawal in patients. Participation of cancer patients in self-care services induces behavioural improvements and improves wellness. Essentially, the best management strategy to this chronic illness is self-care, including patient involvement in self-monitoring, recognizing, identifying and reviewing symptoms and their severity, identifying and implementing treatment options, and assessing self-care results.⁹

Relevant information on self-care strategies should also be implemented at the start of chemotherapy with adequate supervision and input during the treatment process.¹⁰ Treatment of systemic cancer is consistent with a number of

adverse effects that may adversely affect the quality of life of patients (QOL) and make it critical. Given that usually patients receive chemotherapy with ambulatory environments, symptoms at home need to be largely self-monitored.¹¹

Cancer diagnosis may have a profound effect on mental health and wellbeing. Depression and anxiety can impair cancer treatment and rehabilitation, as well as quality of life and survival.¹² Cancer patients' self-care therapeutic therapies have the potential to alleviate physical and psychosocial discomfort caused by cancer diagnosis and chemotherapy and to improve their quality of life.¹³ The need for education between these patients and their families is especially strong. Cancer care nurses are responsible for training patients before chemotherapy is given.¹⁴

The present study was conducted to assess the knowledge regarding self-care among patients receiving chemotherapy, to evaluate the effectiveness of information booklet regarding self-care among patients receiving chemotherapy and to find out the association between knowledge score regarding self-care among patients receiving chemotherapy in selected hospitals.

METHODS

Quasi experimental one group pre-test post-test research design was used to conduct the study among cancer patients and a total of 60 cancer patients receiving chemotherapy were selected by non-probability convenience sampling technique. The sample size was calculated with prevalence of cancer patients. Approximately 39.5 % of men and women will be diagnosed with cancer at some point during their lifetimes (based on 2015 – 2017 data).¹⁵

Data was collected by using structured questionnaire during the month of December 2019. Patients who are analphabetic, patients who are critically ill, patients who are unable to read booklet, patients those suffering from known mental disorders were excluded. A questionnaire was created in the most commonly spoken Marathi languages in that area. Participation was voluntary at the report and the participants answered the questionnaires themselves anonymously.

The content validity was determined after the opinion of experts in the field of medical-surgical, nursing and oncology nursing. Tool validation included measurement of inter-observer reliability; the generation of criterion related, construct related and content related validity. The tool was later revised by English language expert and then translated into Marathi language by language expert without altering the tools meaning. The reliability of the tool was $r = 0.80$. This is true and appropriate for patients receiving chemotherapy.

The Institutional Ethical Committee of the Datta Meghe, Institute of Medical Sciences, Deemed to Be University sanctioned approval for conducting the research study and was obtained. The findings were summarized by concentrations and percentages, category. The software used in the analysis were SPSS 24.0 and Graph Pad Prism 7.0 version and $P < 0.05$ is considered as level of significance.

The questionnaire consisted of parts for acquiring demographic information and relevant questions related to the knowledge about chemotherapy and self-care of the participants. After collecting the demographic data, the structured questionnaire regarding self-care during

chemotherapy was provided and then information booklet regarding self-care was given to the patients. The post-test of the study was carried out on the seventh day after the provision of information booklet, using same questionnaire.

To accomplish the objective of the study, the investigator collected data from 60 patients by a self-prepared questionnaire including 35 questions based on various aspects of self-care that has to be taken during chemotherapy. Each correct answer carried 1 mark and 0 was given for the wrong response. Knowledge was graded from poor knowledge score to excellent knowledge score based on the obtained scores. Based on total number of correct responses, the degree of knowledge was classified as poor (0 - 7), average (8 - 14), good (15 - 21), very good (22 - 28) and excellent (29 - 35).

Statistical Analysis

Analysis of the data was done by using descriptive and inferential statistics both. Descriptive statistics was used to describe the basic features of the data in a study and the inferential statistics was used to make inferences from our data to more general conditions like the percentage-wise distribution of the patients receiving chemotherapy about their demographic characteristics was calculated. The statistical tests used for the analysis of the result were: Students paired t-test, student's unpaired t-test, one-way analysis of variance (ANOVA) and reliability analysis.

A suitable sample was drawn from the study population of 60 patients who were receiving chemotherapy in selected hospitals of Wardha and, Nagpur district. The data was collected to classify sample characteristics including age, gender, education, occupation, monthly income, area of residence, time period of cancer, and duration of chemotherapy.

Table 1 shows that 41.60 % of the patients were in their age group of 31 - 40 year, 36.70 % of them were in the age group 41 - 50 year and 21.70 % of them were more than 50 years of age. The patients were educated up to primary standard are 25 %, up to secondary are 53.3 %, up to graduation are 20 % and only 1.70 % of the patients were educated up to post-graduation, Percentage wise 36.70 % of them patients were labourers, 26.60 % of them were doing business, 10 % of them were doing private services, 6.70 % of them were doing government service and 20 % of them were unemployed. 23.30 % of the patients had family income of less than Rs. 5000 per month, 36.70 % of them had monthly income of Rs. 5001 - 10000, 28.30 % of them had monthly family income of 10001 - 20000 Rs and 11.70 % of them had monthly income of more than Rs. 20000. The patients residing in urban area percentage wise is 40 % and residing in rural area is 60 %. The percentage wise 15 % of the patients had cancer from less than one month, 23.30 % of them had from 2 - 5 months, 31.70 % of them had cancer from 9 - 12 months and 30 % of them had cancer from more than 12 months. 26.70 % of the patients were taking chemotherapy from 1 - 6 months, 11.60 % of them were taking from 5 - 8 months, 30 % of them were taking from 9 - 12 months and 31.70 % of the patients were taking chemotherapy from more than 12 month.

Pre-Test Knowledge	Score Range	Pre-Test Knowledge Score No of Patients	Percentage
Poor	1 - 7	00	
Average	8 - 14	20	33.33
Good	15 - 21	37	61.67
Very good	22 - 28	03	5.00
Excellent	29 - 35	00	00
Minimum score		08	
Maximum score		23	
Mean knowledge score		15.53 ± 2.98	
Mean % knowledge score		44.38 ± 8.52	

Table 2. Assessment of Pre-Test Knowledge

N = 60

Table 2 indicates that 33.33 % of patients had average knowledge scores, 61.67 % had good knowledge scores, and 5 % had very good pre-test knowledge scores. Minimum score of knowledge was 8 in the pre-test and maximum score of knowledge was 23 in the pre-test. Mean knowledge score in pre-test was 15.53 ± 2.98 and mean percentage of knowledge score in pre-test was 44.38 ± 8.52.

Post-Test Knowledge	Score Range	Post-Test Knowledge Score No of Patients	Percentage
Poor	1 - 7 (0 - 20 %)	00	0
Average	8 - 14 (21 - 40 %)	00	0
Good	15 - 21 (41 - 60 %)	07	11.67
Very good	22 - 28 (61 - 80 %)	49	81.67
Excellent	29 - 35 (81 - 100 %)	04	6.67
Minimum score		20	
Maximum score		30	
Mean knowledge score		24.61 ± 2.53	
Mean % knowledge score		70.33 ± 7.25	

Table 3. Assessment of Post-Test Knowledge

N = 60

Table 3 shows that 11.67 % of the patients had good knowledge score, 81.67 % of them had very good knowledge score and 6.67 % of them had excellent knowledge score in post-test. Minimum knowledge score was 20 in post-test and maximum knowledge score was 30 in the post-test. Mean percentage of knowledge score in post-test was 24.61 ± 2.53 and mean percentage of knowledge score in post-test was 70.33 ± 7.25.

RESULTS

Demographic Variables	No. of Patients.	Percentage (%)	
Age in years	31 - 40 yrs.	25	41.60
	41 - 50 yrs.	22	36.70
	> 50 yrs.	13	21.70
Gender	Male	22	36.70
	Female	38	63.30
Education	Primary	15	25.00
	Secondary	32	53.30
	Graduate	12	20.00
Occupation	PG	01	1.70
	Labourers	22	36.70
	Business	16	26.60
	Pvt Service	06	10.00
	Govt Service	04	6.70
Monthly family income (Rs)	Unemployed	12	20.00
	< 5000 Rs	14	23.30
	5001 - 10000 Rs	22	36.70
	10001 - 20000 Rs	17	28.30
Area of residence	> 20000 Rs	07	11.70
	Urban	24	40.00
Time period of cancer	Rural	36	60.00
	< 1 months	09	15.00
	2 - 5 months	14	23.30
	9 - 12 months	19	31.70
Duration of chemotherapy	> 12 months	18	30.00
	1 - 6 months	16	26.70
	5 - 8 months	07	11.60
	9 - 12 months	18	30.00
	> 12 months	19	31.70

Table 1. Percentage Wise Distribution of Patients According to Their Demographic Characteristics

N = 60

Overall	Mean	SD	Mean Difference	t-Value	P-Value
Pre-test	15.53	2.98	9.08 ± 2.73	25.68	0.0001 S.p < 0.05
Post-test	24.61	2.53			

Table 4. Significance Difference in Knowledge Score in Pre-Test and Post-Test of Patients

N = 60

Table 4 indicate the comparison between pre-test and post-test information rates of patients on self-care. Mean, standard deviation and mean difference values are compared and 5

percent of significance is added to the student paired test. The tabulated value for N = 60 - 1, i.e. 59 degrees of freedom, was 2.00. The estimated value, i.e. 25.68, is much higher than the tabulated value at 5 percent of significance for overall knowledge score of patients which is statistically acceptable of significance. Hence, it is statistically interpreted that the information booklet regarding self-care among patients receiving chemotherapy in selected hospitals was effective. Thus, the H1 is accepted.

Demographic Variables	No. of Patients	Mean of Post-Test Knowledge Score	F-Value	P-Value
Age in years	31 - 40 yrs.	23.84 ± 2.30	3.20	0.042 S, P < 0.05
	41 - 50 yrs.	25.59 ± 2.26		
	> 50 yrs.	24.46 ± 3.01		
Gender	Male	23.72 ± 2.64	2.12	0.038 S, P < 0.05
	Female	25.13 ± 2.36		
Education	Primary	25.13 ± 2.82	0.27	0.84 NS, P > 0.05
	Secondary	24.43 ± 2.44		
	Graduate	24.50 ± 2.64		
	PG	24 ± 0		
Occupation	Labourer	24.72 ± 2.88	0.96	0.43 NS, P > 0.05
	Business	24.56 ± 2.42		
	Pvt service	25.66 ± 2.58		
	Govt service	22.50 ± 1.29		
	Unemployed	24.66 ± 2.22		
Monthly income	< 5000 Rs	24.28 ± 2.52	0.98	0.40 NS, P > 0.05
	5001 - 10000 Rs	25 ± 2.81		
	10001 - 20000 Rs	24.94 ± 2.24		
Area of residence	> 20000	23.28 ± 2.28	0.33	0.7 NS, P > 0.05
	Urban	24.75 ± 2.19		
	Rural	24.52 ± 2.77		
Time period of cancer	< 1 month	23 ± 1.87	2.89	0.043 S, P < 0.05
	2 - 5 months	23.92 ± 2.75		
	9 - 12 months	25.63 ± 2.00		
Duration of chemotherapy	> 12 months	24.88 ± 2.76	3.10	0.034 S, P < 0.05
	1 - 6 months	23.18 ± 2.34		
	5 - 8 months	24.42 ± 2.63		
	9 - 12 months	25.66 ± 2.05		
	> 12 months	24.89 ± 2.68		

Table 5. Association of Post-Test Knowledge Score Regarding Self-Care among Patients Receiving Chemotherapy in Relation to Demographic Variables

N = 60

Table 5 shows that there was significant association of knowledge score in relation to age, gender, time period of cancer and duration of chemotherapy. Education, occupation, monthly family income and area of residence were not significantly associated with knowledge score.

DISCUSSION

The present study focuses on to evaluate the effectiveness of information booklet regarding self-care among patient receiving chemotherapy at Rashtra Sant Tukdoji Regional Hospital Nagpur and Acharya Vinoba Bhave Rural Hospital Sawangi, Meghe, Wardha, Maharashtra. The findings of the present study were discussed with reference to the objectives and with the findings of the other studies.

Manisha C. Gholap, 2019, a study to evaluate the effectiveness of information booklet regarding self-care during chemotherapy among cancer patients at selected tertiary care hospital, Karad. One group pre-test post-test experimental design used by researcher to conduct study among patients diagnosed with cancer and by using convenience sampling technique, 38 cancer patients were selected. With the help of structured questionnaire, data was collected. The finding of the study reveals that age and gender were not significantly associated with self-care during

chemotherapy and the education was found to be significantly associated with self-care during chemotherapy.⁶

Haryani Haryani, 2017, Implementation of self-care symptom management program to enhance the quality of life of cancer patients undergoing chemotherapy and their family caregivers. The researcher used one group pre-intervention and post-interventional test, with quasi-experimental design. The research was conducted with 40 cancer patients and 30 family caregivers in a public hospital in Yogyakarta, Indonesia. The results of the study indicate that there were no significant differences between the pre-intervention score and the post-intervention score. The findings of this randomized study corroborate previous evidence that the provision of well-structured and adequate written information on cancer care is highly appreciated and beneficial to patients.

CONCLUSIONS

Information related to chemotherapy self-care includes various aspects like knowledge regarding purpose of self-care, pain management, managing nausea and vomiting, hair and skin care, managing stress and fatigue and nutrition. Knowledge of selected patients regarding self-care was inadequate; providing information booklet helped the patients to understand more about chemotherapy self-care. Thus,

information booklet is effective in improving knowledge of patients regarding self-care during chemotherapy.

Data sharing statement provided by the authors is available with the full text of this article at jemds.com.

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