

Assessment of Knowledge on Selected Side Effects and Coping Strategies Among Patients Receiving Radiation Therapy In A State Of Andhrapradesh

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Abstract

Background: Cancer affects everyone and represents a tremendous burden on patients, families and societies. cancer may be treated through surgery, chemotherapy, and radiation therapy. Radiotherapy is more acceptable treatment modality and it can cause acute and late side effects.

Aims/Objectives: To assess the knowledge on selected side effects and coping strategies and to find the association between the selected demographic variables with the knowledge on selected side effects and coping strategies among patients receiving radiation therapy.

Method: The present descriptive explorative study was conducted to assess the knowledge on selected side effects and coping strategies among 100 cancer patients receiving radiation therapy at SVIMS hospital, Tirupati. The data was collected by using validated EORTC QOL C30 rating scale for assessing side effects of radiotherapy and structured questionnaire was used for assessing coping strategies.

Results: Result revealed that demographic variables showed 28 (28%) belongs to the age group of 41-50years, 63 (63%) females, 36(36%) were with cervical cancer. Cancer patients receiving Radiotherapy had 51% had moderate side effects with 88.6 ± 14.1 and 45% had inadequate coping strategies with 6.3 ± 2.1 . There was association between selected side effects and gender, educational status, occupation, marital status, place of residence, habit of consuming alcohol, smoking and tobacco chewing, duration of illness in months shows association at $p < 0.01$ level and monthly income at $p < 0.05$ level and for coping strategies there was association with gender, educational status, place of residence, habit of consuming alcohol, smoking and tobacco chewing were significant association at $p < 0.01$ level, occupation, duration of illness in months were association at $p < 0.05$ level.

Conclusion: It is essential to raise awareness on cancer treatment and its impact on health and to develop health seeking behaviours among the patients and caregivers to provide better cancer care and to improve the quality of life.

Keywords: Coping strategies, Radiotherapy, Side effects.

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I. Introduction

Cancer is a disease in which abnormal cells divide uncontrollably and destroy body tissue. Cancer may be treated through surgery, chemotherapy, and radiotherapy. Radiotherapy is more acceptable treatment modality and it can cause acute and late side effects. The most acute side effects are fatigue, skin changes, hair loss, nausea, vomiting, oral ulcers, throat changes, intestinal discomfort, swelling, infertility, pain, urinary problems, sexual changes, and sleep disturbance. The late side effects include fibrosis, epilation [hair loss], dryness [xerostomia & xerophthalmia], lymphoedema, cancer, cardiovascular disease, cognitive decline, radiation enteropathy, and radiation induced polyneuropathy. There are several methods being utilized for the prevention of radiation therapy side effects. Two delivery methods that were originally used to reduce radiation side effects include dose fractionation or splitting the total dose or radiation therapy into multiple doses and physically shielding with lead blocks to reduce the area of exposure while preventing side effects from occurring. Sometimes side effects are inevitable, in these situations, several types of drugs can be used to decrease the side effects of radiation therapy.¹⁰

Here are some tips that may help the patient to manage acute side effects; Don't wash off your marks from the radiation simulation. These help us ensure we're direction the radiation to the right place during actual treatment; Clean the skin gently with warm water and a mild soap. Avoid using powders, perfumes, lotions, aluminium deodorants and products containing alcohol in the treatment area unless approved by oncology nurse; Avoid putting

anything hot (heating pads) or cold (ice packs) directly on the treated skin; If spend time outdoors, wear a hat or clothing to protect skin. Many cancer patients faces malnutrition. While certain types of radiation therapy may require a change in patient diet to minimize side effects like malnutrition and nausea, it's important to maintain weight. It's also important to remember that radiation therapy is not the time to start a weight loss program. For patients that are up for it and are already physically active, exercising during radiation therapy can help with fatigue, mood issues and stress management. Even going for a walk for a few minutes can help. We generally do not recommend starting a new rigorous training program during radiation. During cancer diagnosis and treatment, patients likely to experience an array of emotions, including anxiety, depression, fear or hopeless. It may help to talk about feelings with a close friend, family member, chaplain or other spiritual leader, nurse, social work counsel or psychologist.

Cancer patients who miss two or more radiation therapy sessions have a worse outcome than fully compliant patients, investigators have found. Accelerated repopulation is a marked increase in the tumour growth rate (15-20 times faster) after the commencement of radiotherapy that becomes measurable, usually three to four weeks, after the start of the treatment.

II. Review of literature

- **Karl-Heinz Schulz, Stefan Patra et.al;(2017)**conducted a study on physical condition, nutritional status, fatigue, and quality of life among oncological out-patients receiving radiation therapy. The aim of this study is to describe the association of physical condition and nutritional status with fatigue and quality of life in oncological out-patients. The data was used in this descriptive study was collected on bioelectrical impedance analysis, postural stability (stability index), body mass index, Karnofsky Index, quality of life (Short-Form 36-Item Health Survey) and fatigue (multidimensional fatigue inventory-20) in a consecutive sample of 203oncological out-patients. The results showed that phase angle and stability index outcomes were far below the values of a healthy population of similar age ($p < 0.001$). Quality of life was significantly lower than in the normal population ($p < 0.001$), and the level of fatigue was significantly higher ($p < 0.001$). Phase angle correlated with Karnofsky Index ($p = 0.002$) and Short-Form 36-Item Health Survey Summary physical function ($p < 0.001$). Furthermore, multidimensional fatigue inventory-20 scales 'physical fatigue' and 'reduced activity' were significantly associated with phase angle ($p = 0.04$, $p = 0.005$). Stability indices correlated with Short-Form 36-Item Health Survey physical function. They concluded that results highlight the need for interdisciplinary cooperation to detect physical, nutritional and psychological deficiencies in oncological out-patients.
- **Nilesh Mhaske et. al;(2013)**conducted a descriptive study among 50 cancer patients receiving radiation therapy, to assess for side effects experienced and the coping strategies adopted at Pravara Rural Hospital. Sample selected by using non-probability purposive sampling technique. The data were collected by using self- prepared; and validated rating scales. The study results revealed that patients receiving radiation therapy had variety of side effects with wide range; and patients followed many things to make the side effects more acceptable and easier to adopt with. There was significant association was found between the side effects and type of cancer; coping strategies with sex and type of cancer ($p < 0.05$ level). There was significant positive relationship were found between side effects and coping strategies. The overall coping strategies score was 62.76% indicates cancer patients had partially adaptive coping; the highest mean score was 69.6% for the coping strategies of psychological side effects, shows completely adaptive coping and the physical side effects mean score was 61.1% indicates patients had partially adaptive coping. They concluded that essential to raise awareness on cancer treatment and its impact on health; and develop health seeking behaviors among the patients and care givers to provide better cancer care and improve the quality of care. The overall side effects score was 64.8%of total score indicates cancer patients had moderate level of side effects and 68.1% was obtained by the cancer patients who were secondary educated had completely coping.

III. Operational definitions

ASSESS: It refers to determine or evaluate the level of knowledge on side effects and coping strategies among patients receiving radiation therapy.

SIDE EFFECTS: It refers to problems that occur when radiotherapy treatment goes beyond the desired effects such as fatigue, nausea, vomiting, diarrhoea, skin rashes, and difficulty swallowing.

COPING STRATEGIES: The specific efforts both behavioural and psychological that people employ to tolerate, reduce or minimize stressful events.

RADIATION THERAPY: It uses high-energy radiation to shrink tumours and kill cancer cells. X-rays, gamma rays, and charged particles are types of radiation used for cancer treatment.

PATIENT: It refers to who was clinically diagnosed as having cancer.

HYPOTHESIS

Ho1: There is no significant difference in knowledge on selected side effects and coping strategies among cancer patients receiving radiation therapy.

Ho2: There is no significant association between the knowledge on selected side effects and coping strategies with their selected demographic variables among patients receiving radiation therapy.

ASSUMPTIONS

- Cancer patients will not have adequate knowledge on selected side effects and coping strategies.
- Awareness will improve the level of coping among patients receiving radiation therapy which will help them.

IV. Methodology

This descriptive exploratory study was conducted among 100 cancer patients receiving radiation therapy treatment at SVIMS Hospital, Tirupati. Before commencement of the study, official permission was received from the authority. Patients who were between 20-65 years of age, receiving radiation therapy treatment, willing to participate in the study were included in the study by using the non-probability purposive sampling method.

The Patients with co-morbid cardiovascular diseases, respiratory illness, pre-existing psychiatric disturbances, cognitive decline and not willing to participate in the study were excluded from the study. The purpose of the study was informed and explained to the participants and those who voluntarily agreed to participate in the study and gave an informed consent for the same were asked to fill the rating scale according to the response format provided in the questionnaire. The data was collected by using validated rating scale for assessing side effects of radiotherapy and self-prepared tool was used for assessing coping strategies. For data analysis, each response like 'very often', 'often', 'sometimes', 'rarely' and 'never' were given a score 5, 4, 3, 2 and 1 respectively. Individuals scores were summed up to yield a total score. The collected data was tabulated and analysed using appropriate statistical methods like descriptive statistics (mean, standard deviation, and Item analysis) and Inferential statistics (Chi-square test, Correlation and One-way ANOVA).

V. Results and conclusion

Table 1: (annexure-I) distribution of demographic variables among cancer patients receiving radiation therapy

The data presented in table-1 shows that 28 (28%) belongs to the age group of 41-50 years, 63 (63%) were females, 92 (92%) were Hindus, 58 (58%) illiterate, 60 (60%) working as cultivation/coolie, 73 (73%) were married, 83 (83%) were earning between 5000-10000/-, 83 (83%) were living in rural area, 54 (54%) belongs to nuclear family, 21 (21%) had a habit of consuming alcohol and only 8 (38.1%) taking alcohol since 11-20 years, 23 (23%) had a habit of smoking and only 9 (39.1%) smoking since 21-30 years, 44 (44%) had a habit of tobacco chewing and 16 (36.4%) chewing tobacco since 21-30 years, 3 (3%) had family history of cancer, 36 (36%) were with cervical cancer and 28 (28%) suffering with illness >7 months, 40 (40%) had 10-19 radiation fractions, 36 (36%) received information about radiation therapy, 34 (34%) had information about radiation therapy from health personnel.

Table 2: (annexure-II) distribution of knowledge on side effects among cancer patients receiving radiation therapy

The study finding showed that the side effects was, 51% of patients were having moderate side effects, 26% were having mild side effects, and only 23% were having severe side effects in cancer patients receiving radiotherapy. Mean and standard deviation of side-effects among cancer patients receiving radiation therapy was 88.6±14.1.

Table 3: (annexure-III) distribution of knowledge on coping strategies among cancer patients receiving radiation therapy

The study finding showed that 45% of patients were having inadequate knowledge, 34% were having adequate knowledge and only 23% were having moderate knowledge on coping strategies among cancer patients receiving radiation therapy. The Mean and Standard deviation of knowledge on coping strategies for side effects among cancer patients receiving radiation therapy was 6.2±2.1.

Conclusion

The study findings concluded that a majority of radiotherapy receiving patients (51%) were having moderate side effects and (41%) were having inadequate knowledge on coping strategies. So, patient education and counselling should be planned on impact of radiation therapy side effects and its coping strategies.

Nursing Implication:

The implications drawn for the present study is of a vital concern to health professionals including nursing practice, nursing education, nursing administration and nursing research.

Nursing practice:

The present health care delivery system gives emphasis on comprehensive health care, which includes preventive, curative and rehabilitative.

- Hand notes can be given to the patients and family members, in their language, with an appropriate picture.

Nursing education:

- Nursing students should be encouraged to teach the patients and their family members, regarding the importance of the general information, risk factors, causes, assessment and diagnostic tests, treatment and preventive measures of cancer both in hospital and community.
- Conduct in-service education program for nurses regarding radiation therapy side effects and its coping strategies.

Nursing administration:

- Nursing administrators should have a health education cell with a group of adequately trained nurses for developing health education material for teaching patients as well as general population on side effects and preventive measures of radiation therapy.
- In all areas of administration, hospital, community and institutions administrators can plan programs of awareness.

Nursing research:

- ❖ The new knowledge obtained through the study would enhance evidence-based nursing practice.
- ❖ Nursing research should be based on practicing newer methods of teaching program which include video assisted teaching etc.

Limitations:

The study was limited to the patients receiving radiation therapy.

Recommendations:

- ✚ Similar study can be done on a large sample that helps to draw more definite conclusion and make generalization.
- ✚ Effectiveness of structured teaching program on home management of radiation therapy side effects among patients receiving radiotherapy.
- ✚ A study to assess the awareness of treatment modalities of cancer among patients and attenders attending oncology out-patient department at SVIMS, Tirupati.

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Table 1: (annexure-1)distribution of demographic variables among cancer patients receiving radiation therapy (n=100)

S. No	Demographic variable	Frequency (f)	Percentage (%)
1.	Age		
	< 40 years	22	22%
	41-50years	28	28%
	51-60years	24	24%
	>60years	26	26%
2.	Gender		
	Male	37	37%
	Female	63	63%
3.	Religion		
	Hindu	92	92%
	Muslim	6	6%
	Christian	2	2%
4.	Educational status		
	Illiterate	58	58%
	Primary education	14	14%
	Secondary education	19	19%
	Intermediate education	4	4%
	Under graduation	5	5%
	Post -graduation	-	-
5.	Occupation		
	Home maker	23	23%
	Un-employee	-	-
	Cultivation/coolie	60	60%
	Self-employee	7	7%
	Private job	7	7%
	Government job	3	3%
	Retired	-	-
6.	Marital status		
	Unmarried	6	6%
	Married	73	73%
	Widow/widower	21	21%
	Separate/divorce	-	-
7.	Monthly income in rupees		
	Rs.5000-10,000/-	83	83%
	Rs.10001-15000/-	14	14%
	Rs.15001-20000/-	2	2%
	Rs.>20000/-	1	1%
8.	Place of residence		
	Rural	83	83%
	Semi urban	4	4%
	Urban	13	13%
9.	Type of family		
	Nuclear family	54	54%
	Joint family	46	46%
10.	Do you have a habit of consuming alcohol?		
	Yes	21	21%
	No	79	79%
10.1.	If yes, duration of habit in years?		
	<10years	4	19%
	11-20years	8	38.1%
	21-30years	6	28.6%
	>30years	3	14.3%
11.	Do you have a habit of smoking?		
	Yes	23	23%
	No	77	77%
11.1.	If yes, how many cigarettes per day		
	<10	6	26.1%
	10-20	12	52.2%
	>20	5	21.7%
11.2.	How long have you been smoking in years?		
	<20years	8	34.8%
	21-30years	9	39.1%

	>30years	6	26.1%
12.	Do you have a habit of tobacco chewing?		
	Yes	44	44%
	No	56	56%
12.1.	If yes, duration of habit in years		
	<10years	6	13.6%
	11-20years	12	27.3%
	21-30years	16	36.4%
	>30years	10	22.7%
13.	Do you have a family history of cancer?		
	Yes	3	3%
	No	97	97%
13.1.	If yes, relationship		
	Parents	-	-
	Siblings	1	33.3%
	Grand parents	1	33.3%
	Others(specify)	1	33.3%

14.	Type of cancer		
	Ca. breast	7	7%
	Ca. lung	19	19%
	Ca. cheek/buccal mucosa	32	32%
	Brain tumors	3	3%
	Thyroid cancer	3	3%
	Cervical cancer	36	36%
15.	Duration of illness in months		
	1month	7	7%
	2months	23	23%
	3 months	15	15%
	4months	4	4%
	5months	4	4%
	6months	19	19%
	7 and above months	28	28%
16.	Specify the number of fractions		
	0-9 fractions	30	30%
	10-19 fractions	40	40%
	20-29 fractions	25	25%
	30-33 fractions	5	5%
17.	Did you receive any information about radiation therapy?		
	Yes	36	36%
	No	64	64%
18.	If yes, what was the source of information		
	Family members	-	-
	Friends and relatives	-	5.6%
	Health personnel	2	-
	Mass media	34	-
		-	-

**Table 2: (annexure-II)distribution of knowledge on side effects among cancer patients receiving radiation therapy
n=100**

S. No.	Severity of side effects	Frequency (f)	Percentage (%)
1	Mild side effects	26	26%
2	Moderate side effects	51	51%
3	Severe side effects	23	23%

**Table 3: (annexure-III)distribution of knowledge on coping strategies among cancer patients receiving radiation therapy
(n=100)**

S. No	Level of coping strategies	Frequency (f)	Percentage (%)
1.	Inadequate coping	45	45%
2.	Moderate coping	21	21%
3.	Adequate coping	34	34%

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