Effectiveness of Selected Nursing Interventions on Specific Symptoms among Cancer Clients Undergoing Radiation Therapy in Oncology Department Government Rajaji Hospital, Madurai

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Abstract- The aim of the study to evaluate the effectiveness of selected nursing interventions on specific symptoms among cancer clients undergoing radiation therapy in oncology Department Government Rajaji Hospital, Madurai. Objectives : The main objective was to evaluate the effectiveness of selected nursing interventions on specific symptoms among clients undergoing radiation therapy. Conceptual framework : The conceptual framework for this study was based on Wiedenbach's Helping Art of Clinical Nursing Theory. Design : True experimental – Pretest Post Test design. Clients were selected using simple random sampling method. Setting of the study : The study was conducted in oncology department of Government Rajaji Hospital, Madurai Subjects: A total of 60 subjects were included in the study out of which 30 were in experimental group and 30 in control group received to intervention. Main outcome measure: pre and post test was conducted by using standardized memorial symptoms assessment scale before and after intervention. Findings: The mean pretest value for experimental group 5.9 and The mean post is value is 2.76 and it is highly significant at the level of $p<0.001$. Conclusion: The study concluded that selected nursing intervention like giving lemon juice and orange is effective in reducing the symptoms of radiation therapy among the cancer cervix clients.

Cancer cervix turns out to be the most common cancer among females of age of 35 -45 years. This is the most common cancer that affects Indian women. Worldwide, cervical cancer is the third most common type of cancer in women. It is much less common in the United States because of the routine use of Pap smears. Cervical cancers start in the cells on the surface of the cervix. There are two types of cells on the cervix's surface: squamous and columnar. Most cervical cancers are from squamous cells. Cervical cancer usually develops very slowly. It starts as a precancerous condition called dysplasia. This precancerous condition can be detected by a Pap smear and is 100% treatable. It can take years for precancerous changes to turn into cervical cancer. Most women who are diagnosed with cervical cancer today have not had regular Pap smears or they have not followed up on abnormal Pap smear results. Almost all cervical cancers are caused by HPV (human papilloma virus).

HPV is a common virus that is spread through sexual intercourse. There are many different types of HPV. Some strains lead to cervical cancer. (Noller KL.et.al [2007])

Radiation oncology is the medical specialty concerned with prescribing radiation, and is distinct from radiology, the use of radiation in medical imaging and diagnosis. Radiation may be prescribed by a radiation oncologist with intent to cure ("curative") or for adjuvant therapy. It may also be used as palliative treatment (where cure is not possible and the aim is for local disease control or symptomatic relief) or as therapeutic treatment (where the therapy has survival benefit and it can be curative). It is also common to combine radiation therapy with surgery, chemotherapy, hormone therapy, immunotherapy or some mixture of the four. Most common cancer types can be treated with radiation therapy in some way. The precise treatment intent (curative, adjuvant, neoadjuvant, therapeutic, or palliative) will depend on the tumor type, location, and stage, as well as the general health of the patient. Total body irradiation (TBI) is a radiation therapy technique used to prepare the body to receive a bone marrow transplant

I. NEED FOR THE STUDY

The World has a population of 2329.08 million women ages 15 years and older who are at risk of developing cervical cancer. Current estimates indicate that every year 493,243 women are diagnosed with cervical cancer and 273,505 die from the disease. Cervical cancer ranks as the 2nd most frequent cancer in women in the World, and the 2nd most frequent cancer among women between 15 and 44 years of age. About 10.0% of women in the general population are estimated to harbour cervical HPV infection at a given time, and 70.1% of invasive cervical cancers in the World are attributed to HPVs 16 or 18. **(National health system project, Tamilnadu, 2012)**

Radiation therapy is commonly applied to the cancerous tumor because of its ability to control cell growth. Ionizing radiation works by damaging the DNA of exposed tissue leading to cellular death. To spare normal tissues (such as skin or organs

which radiation must pass through to treat the tumor), shaped radiation beams are aimed from several angles of exposure to intersect at the tumor, providing a much larger absorbed dose there than in the surrounding, healthy tissue. Besides the tumour

1.3 OBJECTIVES:

1. To assess the severity of specific symptoms for clients with cancer cervix undergoing radiation therapy among experimental and control group.

2. To evaluate the effectiveness of selected nursing interventions on specific symptoms among Clients undergoing radiation therapy in experimental group.

3. To associate the post test scores of cancer with selected demographic and clinical variables among experimental and control group.

1.4 HYPOTHESIS

H1 There will be significant difference in severity of specific symptoms before and after selected nursing interventions among experimental group .

H2 There will be a significant association between the post test scores with selected demographic and clinical variables among the Clients in experimental group.

2.1 LITERATURE RELATED TO ASSESSMENT OF THE SYMPTOMS
CANCER CLIENTS UNDERGONE RADIATION THERAPY.

Murphy BA, Gilbert J. (2009) conducted a study among head and neck cancer Clients treated within 4 to 5 weeks of radiation therapy to assess dyphagia and other symptoms. results show that Clients develop mucositis, radiation dermatitis and edema of soft tissue , pain, copius mucous production, xerostomia and tissue swelling contribute to acute dysphagia , further it reveals that as the acute effects resolve late effects including fibrosis, lymph edema and damage to neural structures become manifest. Hence the researcher concluded that early referral for evaluation by speech language pathologist is critical to ensure adequate assessment of swallow function and a treatment plan was generated that includes patient education and swallow therapy.

Vistad I, Cvancarova M, Fossa SD, Kristensen GB. (2008) conducted a study on Post radiotherapy morbidity in long-term survivors after locally advanced cervical cancer among 147 Cervical Cancer survivors treated between 1994 and 1999 at The Norwegian Radium hospital, data was collected by a questionnaire and results revealed that reduced morbidity had reduced by 91 (62%) after a median follow-up time of 96 months (65-131 months). The results were compared with physician-assessed morbidity scores recorded at 5 years, and to selected normative data using descriptive statistics. Stress incontinence, diarrhea, nausea, and sexual problems were significantly (p < 0.001) more prevalent when compared with a control sample from the general female population.

2.2 LITERATURE RELATED TO SYMPTOM MANAGEMENT OF CLIENTS UNDERGONE RADIATION THERAPY.

John A Green.et.al, (2012) conducted a study concomitant chemotherapy and radiation therapy for cancer of the uterine cervix. Meta analysis with randomized controlled trails (RCTS). 24 trials and 4921 Clients, although due to patient exclusion and differential reporting 61% t 75% were available for the analyses. Whether or not platinum was used with absolute benefits of 10% and 13% respectively. There was, however, statistical heterogeneity for this outcome. There was some evidence that the effect was greater in trials including a high proportion of stage I and II Clients. Chemoradiation also showed significant benefit for local recurrence and suggestion of benefit for distant recurrence. Acute hematological and gastrointestinal toxicity was significantly greater in the concomitant chemoradiation group.

Benze G, Alt-Epping B, Geyer A, Nauck F. (2012) conducted a systemic review to assess Treatment of nausea and vomiting with prokinetics and neuroleptics in palliative care Clients to determine the level of evidence for the treatment of nausea and vomiting with prokinetics and neuroleptics in palliative care Clients suffering from far advanced cancer and no longer being treated with chemotherapy,a total of 30 studies fulfilling the inclusion criteria were found. All studies focused on cancer Clients. The study showed that metoclopramide is seen as an effective drug in many studies whereas the evidence for it is moderate at best. Within the group of neuroleptics, levosupiride and levomepromazine seem to have good antiemetic potential but the evidence level is low in Clients with advanced cancer, hence metoclopramide can be used to reduce nausea and vomiting for these clients.

II. CONCEPTUAL FRAMEWORK

The conceptual framework for research study serves as a measure on which the purpose of the study is based. It also serves as a springboard for theory development. The framework provides the prospective from which the researcher views the problem under investigation.

The investigator adopted the Wiedenbach's Helping Art of Clinical Nursing theory (1964) as a base for developing the conceptual framework. This theory directs an action towards an explicit goal. It has 3 factors
1. Central purpose
2. Prescription
3. Realities

1. Central purpose

It refers to what the nurse wants to accomplish. It is the goal towards which a nurse strives. In this study the main central purpose is to assess the effectiveness of selected nursing interventions on specific symptoms among Clients undergoing radiation therapy in oncology department, Government Rajaji Hospital, Madurai.

2. Prescriptions

It refers to plan a care for a patient. It will specify the nature of action that will fulfill the nurse's central purpose. In this study the investigator plans to provide the nursing intervention among patient who receiving radiation therapy and assess the improvement of the symptoms.

3. Realities:

It refers to the physical, physiological, emotional and spiritual factors that affect the nursing action. The five realities identified by Wiedenbach's theory are agent, recipient, goal, means and activities and framework. The conceptualization of nursing practice according to this theory' consists of 3 steps as follows

• Step-1: Identifying the need for help.
• Step-2: Ministering the needed help.
• Step-3: Validating the help.

Step-I: Identifying the need for help.

This step involves determining the need for help assessment of the symptoms MSAS scale (Memorial Symptom Assessment Scale) among cancer cervix Clients receiving radiation therapy by means of pretest questionnaire.

Step-2: Ministering the needed help.

This step involves provision of required help for identified need. It has 2 components

Prescription: It refers the investigator nursing intervention (lemon juice, Orange juice) undergone specific symptoms like nausea vomiting and loss of appetite among cancer cervix patient receiving radiation therapy.

(i) Realities: In this study', the five realities identified by Weidenbach theory are
• Agent: Investigator
• Recipient: cancer cervix receiving radiation therapy
• Goal: Reduced of the symptoms (nausea vomiting, appetite stimulate) receiving radiation therapy.
• **Means:**
o Experimental group- Nursing intervention (Lemon juice and orange)
o Control group - No intervention

**Step: 3 validating that the need for help was met.**

The nurse validates the ministered help. It is accomplished by means of post test symptoms assessed by MSAS scale for experimental group reduce the symptoms and control group there is no changes in symptoms.

3.14 RESEARCH APPROACH
QUANTITATIVE APPROACH

The research approach used for this study was quantitative approach. An experimental study was adopted because investigator used randomization and manipulation in the form of nursing intervention to experimental group and regular care treatment for control group.

3.2 DESIGN:
True experimental — Pretest Post test design.
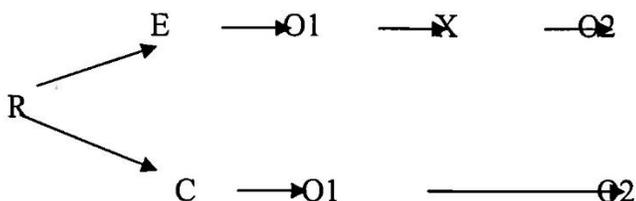
3.3 RESEARCH VARIABLES

Independent variable: Selected nursing intervention Dependent variable: Specific symptoms among Clients undergoing radiation therapy Demographic variable: Age, educational status, income, occupation, Clinical variable: Hemoglobin level, blood pressure, duration of illness, number of radiation sitting.

3.11 SCORING PROCEDURE

Part - I It includes age, education, occupation, and monthly income, duration of illness, hemoglobin level blood pressure, duration of illness, number of radiation sitting. Descriptive statistics like number, percentage used for analysis.
Part - II Each symptoms frequency as it occurred was rated as • Rarely-1 • Occasionally - 2 • Frequently — 3 and • Almost constantly — 4 Interpretation of Scores • 2 to 4 -Mild Symptoms • 4 to 6- Moderate Symptoms • 6 to 8- Severe Symptoms) 3.12

CONTENT VALIDITY:

The tool used for this study was given to five experts in the filed of nursing and medicine for content validity. Suggestions were considered and appropriate changes were made and found to be valid.

RELIABILTY:

The Memorial Symptom Assessment Scale (MSAS) is a multidimensional tool developed to evaluate measure the prevalence, characteristics and distress of common symptoms related to cancer. The author who invented this tool has conducted a study to evaluate its reliability and validity ,One hundred-twenty Clients were included in

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3.13 PILOT STUDY

The pilot study was conducted among the cancer cervix Clients receiving radiation therapy in oncology department, samples were selected from the selected population after obtaining the permission from the subjects. Pilot study was from 01.08.2012 to 07.08.2012. Clients selected for the pilot study were not included for the main study. Pilot study revealed that the study was feasible.

3.14 DATA COLLECTION PROCEDURE

Data collection was done for the period of 4 weeks. Clients were selected by simple random sampling. Data was collected on all days from 8 am to 5 pm. the period for data

collection was from 16.08.2012 to 15.09.2012. Each week twenty samples were selected by simple random sampling, out of which 10 were in experimental group and 10 were in control group and pretest assessment of was done using MSAS on day '1' and selected nursing intervention of giving 200m1 of lime juice+ one cricket ball size orange fruit was administered only to experimental group, and the control group received regular treatment. Same intervention was carried for consecutive 6 days and on the next day post test was conducted for both experimental and control group using the same MSAS. The same procedure was followed for the next two weeks.

III.   DATA ANALYSIS AND INTERPRETATION

Analysis is the appraisal of the data and interpretation of the data consisting of relation between findings of the study to the research problem and theoretical framework for the study. An important function of the research problem and theoretical framework for the study. This chapter deals with analysis and interpretation of the data collected of specific symptoms with selected nursing intervention among cancer Clients receiving

radiation therapy. From 60cancer cervix who receiving radiation thearaphy, 30 for experimental and 30 for control group being analyzed classified and tabulated on the basis of the objectives of the study.

PRESENTATION OF THE DATA

The study findings of the samples are presented in the following sections.

Section-A: Distribution of demographic and clinical variables of the client's with Cancer cervix receiving radiation therapy.

Section-B: Frequency, mean, standard deviation, mean percentage of the client's with Cancer cervix receiving radiation therapy.

Section-C: Effectiveness of selected nursing interventions on specific symptoms among Clients undergoing radiation therapy in experimental group and control group.

Section-D: Association of post test score with selected demographic and clinical variables in both experimental and control

Frequency and percentage wise distribution of patient under radiation therapy in Oncology department in both experimental and control group

(n=30)

DEMOGRAPHIC VARIABLE	Control Group		Experimental Group	
	f	%	f	%
Age (IN Year):				
(a). 30-40	-	-	1	3
(b). 41-50	20	67	19	63
(c). 51-60	10	33	10	33
(d). 61-70	-	-	-	-
Educational Status:				
(a). No formal education	28	93	29	97
(b). Primary	2	7	1	3
(c). Higher education	-	-	-	-
(d). Graduate and others	-	-	-	-
Occupation:				
(a). coolie	22	73	29	97
(b). Agriculture	6	20	-	-
(c). Business	2	7	1	3
(d). Private employee	-	-	-	-
Family income:				
(a). Rs.< 500	22	73	-	-
(b). Rs.501 - 1000	6	20	-	-
(c). Rs.1001 – 2000.	2	7	23	77
(d). Rs.>2001	-	0	7	23

DEMOGRAPHIC VARIABLE	Control Group		Experimental Group	
	f	%	f	%
CLINICAL VARIABLE				

Hemoglobin levels (gms%):				
(a). 9	-	-	1	3
(b). 9.5	2	7	1	3
(c). 10	26	87	15	50
(d). 10.5	1	3	1	3
(e). 11	1	3	11	37
(f). 11.5	-	-	1	3
Duration in years:				
(a). Less than or equal to 1 year	29	97	22	73
(b). 2-5 years	-	-	8	27
(c). More than 5 years	1	3	-	-
Blood Pressure:				
(a). > or = 130/90 mm hg	-	-	-	-
(b). < 130/90 mm hg	30	100	30	100
Radiation sitting:				
(a). 12-15	12	40	2	7
(b). 16-19	18	60	20	67
(c). 20-23	-	-	8	26

With regard the age out of 30 samples of experimental group 19 (63%) of them belongs to age group 41 - 50 years, 10(33%) of them belongs to 51 -60years, 1(3%) persons belongs to age group 30 -40years and none of the age group of 61 - 70years. With regard the age out of 30 samples of control group 20 (67%) of them belongs to age group 41 - 50 years, 10(33%) of them belongs to 51 -60years, 1(3%) persons belongs to age group 30 -40years and none of the age group of 61 -70years.

LEVEL OF SYMPTOMS FOR PRETEST & POST TEST IN EXPERIMENTAL GROUP

According to the educational status out of 30 samples of experimental group 29 (67%) of them belongs to no formal education, 1(3%) of them belongs to primary education, and none of the education status of Higher education and Graduate and others. With regard the educational status of 30 samples of control group 28 (93%) of them belongs to no formal education, 2(7%) of them belongs to primary education, none of the educational status for higher education and graduate and others.

FIG .7. Percentage wise distribution of level of symptoms for both pretest and post test in experimental group.
The figure shows that in experimental group the severe of symptoms has decreased and number of Clients in severe symptoms had reduced from 10% to 0% and most of then had came down to mild symptoms.
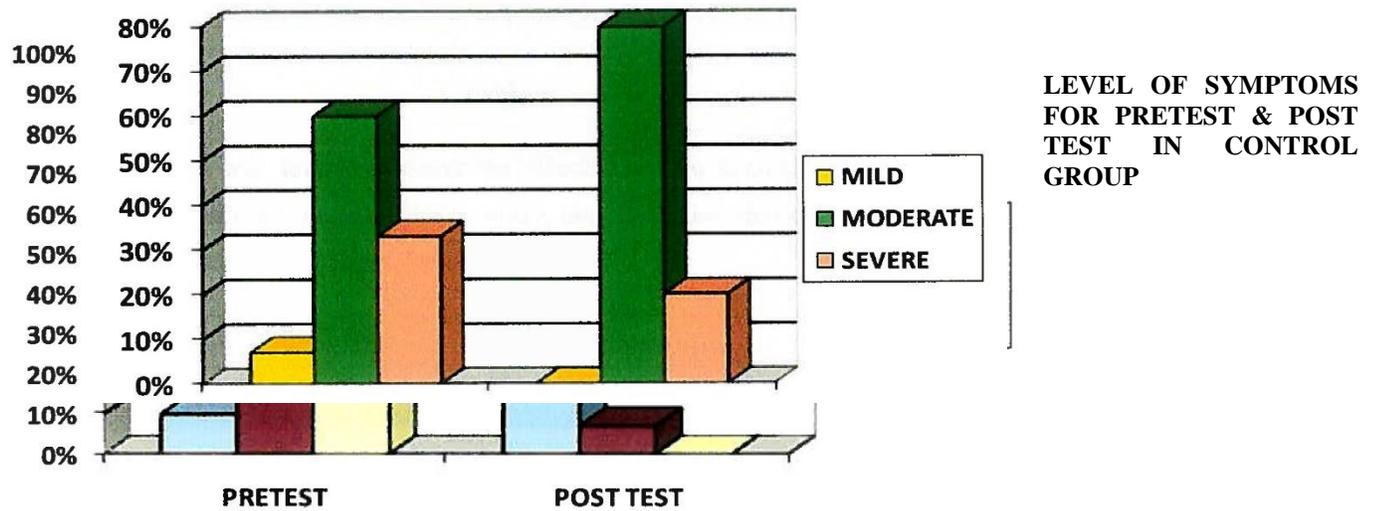

LEVEL OF SYMPTOMS FOR PRETEST & POST TEST IN CONTROL GROUP

FIG. 8. Percentage wise distribution of level of symptoms for both pretest and post test in control group.

The figure shows that in control group the level of symptoms remain almost same in both pretest and post test, in pretest 60% were in moderate symptoms and in post test 80% were in moderate symptoms.

Effectiveness of selected nursing interventions on specific symptoms among Clients undergoing radiation therapy in experimental group and control group.

Table-4
Paired "t"-test was found to assess the effectiveness to symptoms on selected nursing interventions among Clients undergoing radiation therapy in Oncology department within experimental group.
*-$P<0.05$, significant and **-$P<0.01$ &***-$P<0.001$, highly significant

	Post test		Pre test		't'-value	P-value
	Mean	SD	Mean	SD		
Overall	2.76	0.43	5.9	1.18	13.41	0.000***

Table-5

Paired "t"-test was found among Clients undergoing radiation therapy in Oncology department within the control group.
*-P<0.05, significant and **-P<0.01 &***-P<0.001, highly significant

This table reveals that in experimental group, posttest level of nursing intervention mean (2.76) is reduced from pretest mean 5.9 which is highly significant at 0.000*** level.

There was no significant change in mean comparing in control group pre and posttest level of symptoms.

	Control pretest test		Control Post test		't'-value	P-value
	Mean	SD	Mean	SD		
Overall	6.3	1.27	5.9	0.803	1.459	0.10

6.1 SUMMARY

Cancer is one of the common non communicable diseases. It is 'silent killer disease'. It is the time that we have to focus on the health care facilities and comprehensive treatment for cancer at maximum level.

Cancer is the chronic disease the long term treatment of them alters the behavioral pattern of the client. The health care providers play vital role to educate the population about the importance of early detection, treatment and prevention of its complication. Hence "A study to evaluate the effectiveness of selected nursing interventions on specific symptoms among cancer clients under radiation therapy in Oncology department, at Government Rajaji Hospital, Madurai" was undergone to see the effectiveness.

The study was done on sixty clients based on the inclusion criteria and data was collected through simple randomized (lottery method). 30 clients for experimental group 30 control group in oncology department.

6.3 CONCLUSION

Consuming lemon juice and orange is effective and feasible. It is low cost method to decrease the nausea and vomiting, food taste changes. A Cancer cervix client with receiving radiation therapy is influenced by the demographic and clinical variables. Based on the methods of sample selection, the finding may be generalized to an individual with cancer cervix client. the study findings provides the statistical evidence which early indicates that lemon juice and orange is one of the best alternative therapy which may be used in reduction of the symptoms for the cancer cervix clients receiving radiation therapy. Symptom will be reduced highly significant among the clients who received lemon juice and orange. The result suggested that association between the post test measures of symptoms level in the demographic variables.

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