



## Knowledge Regarding Care of Patients Undergoing Radiation Therapy among Staff Nurses And Nursing Students

Authors

**C.Y.Mounika Sree<sup>\*1</sup>, Saranya.R<sup>2</sup>, Radhika.M<sup>3</sup>, Indira.S<sup>4</sup>**

<sup>\*1</sup>Tutor, Dept of OBG, Narayana College of Nursing, Nellore, Andrapradesh

Email: [cymounika@gmail.com](mailto:cymounika@gmail.com)

<sup>2</sup>Assistant Professor, Dept of Medical Surgical Nursing, Sree Narayana Nursing College, Nellore, AP

Email: [saranapr26@gmail.com](mailto:saranapr26@gmail.com)

<sup>3</sup>Vice –Principal cum HOD Dept of Child Health Nursing, Narayana College Of Nursing, Nellore, AP

Email: [radhika.grm@gmail.com](mailto:radhika.grm@gmail.com)

<sup>4</sup>Principal, Narayana College Of Nursing, Nellore, Andrapradesh

### Abstract

**Introduction:** Radiation therapy is constituent of two words “radio” and “therapy”. Radio mean “rays of radium”, therapy means “curative treatment”. Radiation therapy means treatment by x-rays, by emission and propagation of energy through space through a material medium in the form of waves.

**Objectives:** This study aimed to assess the level of knowledge regarding care of patient undergoing radiation therapy among staff nurses and nursing students.

**Materials & Methods:** Quantitative research approach and descriptive design was used for the study, which was conducted in Narayana medical College Hospital, NELLORE, Andrapradesh. A total of 30 samples in those 15 staff nurses and 15 nursing students were studied, by non probability convenience sampling technique. Structured questionnaire was used to collect the data. Data was analyzed by using descriptive and inferential statistics. Percentage of categorical variables was computed.

**Results:** The results reveal that with regard to level of knowledge among 30 samples, 2(13%) have adequate knowledge, 3(20%) have moderately adequate knowledge, 10(67%) have inadequate knowledge. Among nursing students, 6(40%) have adequate knowledge, 3(20%) have moderately adequate knowledge, 6(40%) has inadequate knowledge. Regarding the association between the level of knowledge regarding care of patients undergoing radiation therapy among staff nurses and nursing students with demographic variables. Total professional experience has significant association at  $\alpha = 0.05$  level. Other variables are non significant.

**Conclusion:** The findings of study revealed that majority of staff nurses 10(67%) have inadequate knowledge, nursing students 6(40%) have adequate and inadequate knowledge.

**Keywords:** cancer, radiation therapy, staff nurses, nursing students, level of knowledge.

## INTRODUCTION

Cancer is characterized by uncontrolled and unregulated growth of cells. Cancer encompasses a broad range of diseases of multiple causes that can arise in any cell of the body capable of evading regulatory controls over proliferation and differentiation.

Radiation therapy is the one of commonly used treatment for the cancer. Radiation therapy is constituent of two words “radio” and “therapy”. Radio mean “rays of radium”, therapy means “curative treatment”.

Radiation therapy means treatment by x-rays, by emission and propagation of energy through space through a material medium in the form of waves.

Radiation therapy has an important role in treating all stages because it is so effective and relatively safe. Radiation can also be very helpful to people with stage-IV cancer that has spread to other parts of the body.

Radiation therapy treats cancer by using high energy radiation to kill tumor cell. The goal is to kill or damage cancer cell without hurting too many healthy cells. It works by damaging the DNA of cancerous cells. This DNA damage is caused by one of two types of energy, photon or indirect ionization of the atoms which make up DNA chain. Indirect ionization happens as a result of ionization of water forming free radicals, notably hydroxyl radicals, which then damage the DNA.

Radiation cause injury to the cells that can induce change in rapidly dividing cells (early reacting tissues), and slowly dividing cells (late reacting tissues). However, stable cells like kidney cells, and brain cells cannot regenerate after a given radiation damage and the effects of radiation damage are permanent. The common acute reaction are radiation sickness, mucositis and sore throat, diarrhea, cystitis, vomiting and fall in blood count. Many people who receive radiation therapy experience skin problems, such as dryness, itching blistering or peeling.

The late- effects of radiation appear 6 months to years following radiation. The common late

effects are rectal bleeding, hematuria, osteo radio necrosis, radiation nephritis square pneumonia etc. Now a days the incidence of cancer is going on increase in all the age groups, and the treatment modalities are also advanced. It is important to understand the care of patients who are undergoing radiation therapy to reduce the negative and positive effects of therapy

**ADIYAR CANCER SOCIETY (2012)** estimated 10.1 million new cases representing 20% increase in 2012. Every year there are 50,000 new cases of childhood cancer in India out of 25,000. Approximately 83% receive the radiation therapy in 2012.

## PROBLEM STATEMENT

“A STUDY TO ASSESS THE KNOWLEDGE REGARDING CARE OF PATIENT UNDERGOING RADIATION THERAPY AMONG STAFF NURSES AND NURSING STUDENTS IN NMCH, NELLORE”.

## OBJECTIVES

1. To assess the level of knowledge regarding care of patient undergoing radiation therapy among staff nurses in NMCH, Nellore.
2. To assess the level of knowledge regarding care of patient undergoing radiation therapy among nursing students in NNI, Nellore.
3. To compare the level of knowledge between staff nurses and nursing students regarding care of patient undergoing radiation therapy.
4. To find the association between the level of knowledge regarding care of patient undergoing radiation therapy among staff nurses with their selected socio-demographical variables.

## METHODOLOGY

The study was conducted by using descriptive design in Narayana medical College Hospital, NELLORE, Andrapradesh. A total of 30 samples among them 15 staff nurses and 15 nursing

students were studied, by non probability convenience sampling technique. Structured questionnaire was used to collect the data. Data was analyzed by using descriptive and inferential statistics.

#### Description of the tool:

A self structured questionnaire which consist of 45 closed multiple choice questions which was developed by the investigator to assess the knowledge regarding care of patient undergoing radiation therapy among staff nurses and nursing students. Each right answer scores 1 mark and wrong answer scores 0 marks. >70% Adequate knowledge, 70 – 50% Moderately Adequate knowledge, <50% Inadequate knowledge.

#### Data collection procedure

The data collection procedure was carried out for a period of 2 weeks after obtaining permission from the Medical Superintendent and Nursing Superintendent in NMCH at Nellore. 15 staff nurses and 15 nursing students were selected in NMCH at Nellore. written consent was obtained from the subjects after explaining the purpose and nature of study. 30 nurses who fulfill inclusion criteria were selected by using convenience sampling technique. Data was collected by using structured questionnaire to assess the knowledge regarding care of patient undergoing radiation therapy among staff nurses and nursing students. It took 30 mts for each nurse to complete the questionnaire. The data was analyzed and tabulated according to the objectives.

## RESULTS

**Table No. 1:** Frequency and percentage distribution based on the socio - demographical variables among staff nurses.

S.No	Demographic variables	Staff nurses	
		(f)	(%)
1.	Age 22-24 years	15	100
2.	Gender Female male	10 5	67 33
3.	Educational qualification GNM B.Sc(N)	4 11	27 73
4.	Professional experience Below 1 year 1-3 years	5 10	33 67

Table 1: shows that with regards to age 15(100%) were between 22-24 years, in gender 10(67%) were female, 5(33%) were male, 4(27%) completed GNM, 11(73%) completed B.Sc(N), 5(33%) had 1 year experience, 10(67%) had 1-3 years experience.

**Table 2:** Table No. 1: Frequency and percentage distribution based on the socio - demographical variables among nursing students.

S.No	Demographic variables	Nursing students	
		(f)	(%)
1.	Age 18-20 years 21- 23 years	1 14	7 93
2.	Educational qualification B.Sc(N)	15	100
3.	Attended any CNE programme Not attended Attended	15 0	100 0

Table 2: shows that with regard to age ,1(7%) student is between 18- 20 years,14(93%) were between 21- 23 years, 15(100%) were studying B.Sc(N), 15 (100%) have not attended any CNE related to radiation therapy.

**Table 3:** Frequency and percentage distribution on comparison level of knowledge regarding radiation therapy between staff nurses and nursing students.

LEVEL OF KNOWLEDGE	STAFF NURSES		NURSING STUDENTS	
	(f)	(%)	(f)	(%)
Adequate	2	13	6	40
Moderately adequate	3	20	3	20
Inadequate	10	67	6	40
TOTAL	15	100	15	100

Table 3. Shows that level of knowledge regarding radiation therapy between staff nurses and nursing students. Among 15 staff nurses, 2(13%) have adequate knowledge, 3(20%) have moderately adequate knowledge, 10(67%) have inadequate knowledge. Among nursing students, 6 (40%) have adequate knowledge, 3(20%) have moderately adequate knowledge, 6 (40%) has inadequate knowledge.

**Table 4:** Frequency and percentage distribution of central values with knowledge regarding care of patients undergoing radiation therapy among staff nurses and nursing students.

SAMPLE	MEAN	STANDARED DEVIATION
Staff Nurses	21.06	6.02
Nursing students	25.46	8.77

**Table 5:** Association of level of knowledge of staff nurses regarding care of patient undergoing radiation therapy with their selected socio demographic data.

Socio Demographic variables	Adequate		Moderately Adequate		Inadequate		Chi-square ( $X^2$ )
	F	%	F	%	F	%	
Gender							C=1.9571 T=5.991 df = 2 NS P=0.05
Female	1	6.7	3	20	6	40	
Male	1	6.7	-	-	4	26.6	
Educational qualification							C=4.432 T=5.991 df=2 NS P=0.05
GNM	1	6.6	2	13.3	1	6.7	
B.Sc (N)	1	6.7	1	6.7	9	60	
Total professional experience							C=6.007 T=5.991 df=2 S* P=0.05
Below 1 year	-	-	1	6.7	4	26.7	
1-3 years	2	13.3	2	13.3	6	40	
Source of information							C=6.357 T= 12.592 df=6 NS P=0.05
Text books	2	13.3	1	6.7	5	33.3	
Journals	-	-	1	6.7	-	-	
Internet	-	-	1	6.7	4	26.6	
All the above	-	-	-	-	1	6.7	
Attended any CNE programme on Radiation therapy							C=0.832 T=5.991 df=2 NS P=0.05
a)Yes	-	-	1	6.7	2	13.3	
b)No	2	13.3	2	13.3	8	53.4	

Table 5: Shows that association of level of knowledge among staff nurses regarding radiation therapy with their selected socio-demographic variables in that total professional experience is significant, remaining variables like gender, educational qualification, source of information, attended any CNE programme on radiation therapy is non significant.

**Table 6:** Association of level of knowledge of nursing students regarding radiation therapy.

Socio Demographic variables	Inadequate		Moderately Adequate		Adequate		Chi-square (x <sup>2</sup> )
	F	%	F	%	F	%	
Age							
18-19 years	-	-	-	-	1	6.7	C=1.6067
20-21 years	6	40	3	20	5	33.3	T=5.991
							df=2
							NS
							P=0.05
Source of information							
Curriculum	-	-	-	-	1	6.6	C=4.7668
Text books	5	33.3	3	20	3	20	T=12.592
Journals	-	-	-	-	1	6.7	df=6
All the above	1	6.7	-	-	1	6.7	NS
							P=0.05

Table 6: shows that the association of level of knowledge of nursing students regarding radiation therapy with their selected demographical variables such as age, source of information is non significant.

## DISCUSSION

This study was conducted in Narayana medical College Hospital, NELLORE, Andrapradesh. A total of 30 samples in those 15 staff nurses and 15 nursing students were studied, Level of knowledge regarding radiation therapy between staff nurses and nursing students. Among staff nurses, 2(13.3%) have adequate knowledge, 3 (20%) have moderately adequate knowledge, 10(67%) have inadequate knowledge. Among Nursing students, 6 (40%) has adequate knowledge, 3(20%) has moderately adequate knowledge and 6 (40%) has inadequate knowledge.

**Hyun Jung Jho, Kyung Ae Kong (2011)** conducted descriptive study on medical professionals; nurses on knowledge regarding cancer therapy. This study aimed to evaluate knowledge among staff nurses with the sample size of 284 nurses. A nationwide questionnaire survey was administered to nurses involved in the care of patient undergoing radiation therapy. A total of 333 questionnaires were analyzed. In that only 35% nurses are having adequate knowledge on radiation therapy. An effective educational strategy for radiation therapy management is needed in order to improve medical professional and nurses knowledge.

Comparison of mean and standard deviation between staff nurses and student nurses. In that staff nurses mean score is 21.06 with standard

deviation is 6.02 are, as in nursing students the mean score is 25.46 with standard deviation is 8.77 regarding Radiation therapy.

**Maysoon S.Abdul Rahim, Maram S. Herzallah (2014)** conducted a descriptive cross sectional design was used to examine the knowledge of nurses to take care of patient with radiation therapy among staff nurses with sample size of 81 nurses. 50% of the estimated sample size was added to management any attrition, missing data or incomplete questionnaires. A total 81 nurses participated in this study. Most of the participants 60 (74.1%) were female with a mean age of 35.2 years. Only 14 (17.3%) of the participants has some knowledge. The final significant result is concluded this may indicate a satisfactory level of knowledge

Association between knowledge of staff nurses regarding radiation therapy with their selected socio demographic variables. Such as age, gender, educational qualification, source of information, attended any CNE and significant at total professional experience with level of knowledge regarding radiation therapy among staff nurses.

Sunitha goevind Erande (2012) conducted a pre-experimental study to evaluate effectiveness of informational booklet on management of cancer therapy among oncology nurses, among the oncology nurses with sample size of 100 oncological nurses. There results of the study were the mean post test score was 21.73±3.46

which should be increased to the mean of pre-test score was  $12.7 \pm 3.13$ . When comparing the knowledge score, the post test knowledge score were significantly higher than the pre -test scores chi-square value (2dg  $P < 0.05$ ) were found to be significant (tabulated  $\chi^2 = 5.999$ , 2df,  $P = 0.000$ ). The study concluded that information book let was enhancing the nurse's knowledge about management of cancer therapy.

Association between the knowledge of nursing students regarding radiation therapy with their selected socio demographic variables. Such as age, educational qualification, year of course, source of information, attended any CNE with level of knowledge regarding Radiation therapy among student nurses.

**Libin Chacko (2012)** conducted a descriptive study on management of skin reactions during radiotherapy among student nurses posted at radiation therapy department in Flanders with sample size of 67 student nurses. Census for a given advice was categorized as small if less than 50% of the student nurses gave the same answer, as moderate if between 50% and 75% and as large when more than 75% . The highest census was seen for advice in cases of moist and dry desquamation, there was less agreement in the case of erythema and it decreased further for preventive advice.

## CONCLUSION

The study reveals that majority of staff nurses have inadequate knowledge, nursing students have adequate and inadequate knowledge. In association of level of knowledge among staff nurses regarding radiation therapy with their selected socio- demographic variables in that total professional experience is significant, remaining variables like gender, educational qualification, source of information, attended any CNE programme on radiation therapy is non significant. Hence the study shows that experience would give adequate knowledge.

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