IJNRD.ORG ISSN : 2456-4184
INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG
An International Open Access, Peer-reviewed, Refereed Journal

A STUDY TO EVALUATE THE EFFECTIVENESS OF AN INFORMATION BOOKLET ON SIDE EFFECTS OF RADIATION THERAPY AND IT'S MANAGEMENT AMONG PATIENT WITH ORAL CANCER IN A SELECTED CANCER HOSPITAL AT AGARTALA, WEST TRIPURA.

Manaswi Debbarma

Assistant professor

Medical Surgical Nursing

Tripura college of Nursing , Hapania, Agartala, west Tripura

ABSTRACT: The researcher conducted a study to evaluate the effectiveness of an information booklet on side effects of radiation therapy and it's management among patient with oral cancer in a selected cancer hospital at Agartala , West Tripura. Objectives : The objective of this study were to assess the knowledge on side effects of radiation therapy and it's management among the patient with oral cancer ,to find the effectiveness of an information booklet on side effects of radiation therapy and it's management among patient with oral cancer in terms of gain in knowledge and to find association between pretest knowledge level of the patient with oral cancer with selected variables . This study was based on Ernestine Wiedenbach's prescriptive theory (1968) Clinical nursing : A Helping Art used as conceptual framework. Method: An quantitative evaluative approach , One group pre-test post-test design and non probability convenience sampling technique were used in this study. Data collection : The 30 samples were collected from Regional Cancer Centre, radiation department under the treatment of cobalt 60 , after their 1st to 7th dose of radiation therapy. The data were collected through structured knowledge questionnaire on side effects of radiation therapy and it's management. The study was revealed that, out of 30 samples,15 (50%) patients were belonged to age group of 40-60 years , majority [26 (86.67%)] were male ,10(33.33%) patients had higher secondary education, maximum [15(50%)] of patients came from rural place and majority [19(63.66%)] of patient had addiction to chewing tobacco/ pan /betel nut's . The maximum [15 (50%)]of patients had oral cancer on cheek and buccal mucosa , majority of samples [20 (66.67%)] had received 1st -3rd dose of radiation therapy and maximum 16(53.33%) patients got information received from

professional and health educator on oral cancer . The mean pretest knowledge score was 11.5, median 11.83 and standard deviation was 3.612. The mean posttest knowledge score was 23.3 , median 24.1 and standard deviation was 3.437 with mean difference of 11.8. The paired 't' test was computed between the pretest and posttest knowledge score and computed 't' value (21.83) statistically found to be significant ('t' $_{(29)}$ =2.04) at 0.05 level of significance. The chi-squire values computed between pretest knowledge level with selected variables were not significant at 0.05 level of significance. Hence the knowledge of the patient was independent and not associated with selected variables .

Conclusion :- The study revealed that the information booklet on side effects of radiation therapy and it's management of patient with oral cancer was effective .

Keywords:- Effectiveness , side effects of radiation therapy and it's management, patient with oral cancer.

INTRODUCTION

According to the Global Cancer Statistics (GLOBOCAN) 2,63,900 new cases and 1,28,000 deaths from oral cavity cancer were detected in 2008 worldwide. Generally, the highest oral cavity cancer rates are found in South-Central Asia and Eastern Asia for both males and females . Oral cancer is the sixth most common malignancy reported would wide and high mortality ratios among all the malignancies. Highest rates are reported in south Asian such as India and Srilanka.

A high incidence of oral and pharyngeal cancer in India shows that 35 % of cases founded in the oral cavity or in the pharynx. Leukoplakia is regarded as a precancerous oral lesion, was noted in 32 % of all cases. The presence of localized fibrosis affecting mainly the soft and hard palates, the tonsillar fossae, and the buccal mucosa. Carcinoma has been seen to develop in 30% of such cases. The oral cancer was more common in Patna and Agra.

According to The Times of India (2011,May 31), the number of oral cancer cases was increasing in India. India accounts for 86% of the world's oral cancer cases, commented by the National Institute of Public Health in February 2011 . Ninety percent of these cases were due to chewing tobacco, unlike in the west where smoking was the main reason.

Emily et.al. (2011) conducted a study to analyze outcomes after radiation therapy for head and neck cancer among a cohort of patients with human immunodeficiency virus (HIV) . The medical records of 12 patients with serologic evidence of HIV who subsequently underwent radiation therapy to a median dose of 68 gy (range , 64-72 Gy) for newly diagnosed squamous cell carcinoma of the head and neck were reviewed . The 3 years estimates of overall survival and local regional control were 78% and 92% . Acute grade III toxicity occurred in 7 patients (58%) , the most common being confluent mucositis (5 patients) and moist skin desquamation (4 patients) seen after the 7th dose of radiation therapy . Two patients experienced greater than 10% weight loss.

NEED OF THE STUDY :-

Jefford , Gibbs , Reading (2005) conducted a study on development and evaluation of an information booklet/decision-making guide for patients with colorectal cancer considering therapy in addition to surgery. The aim of this project was to develop and evaluate a decision-making guide for patients with colorectal cancer contemplating adjuvant therapy. Initially, a focus group was held, and then a draft booklet was developed, which was reviewed by patients and professionals. A subsequent revised booklet and a questionnaire were mailed to 24 patients and 32 professionals for evaluation. Further changes resulted in the final 100-page decision-making guide, which had a Flesch-Kincaid reading level of 8.0 and discern rating 5. Seventeen patients (71%) and 22 professionals (69%) completed the questionnaire. All patients agreed/strongly agreed the guide was 'informative' and 'written in a way you like' and 94% considered it 'helpful for making decisions'. Professionals found it 'informative' (95%), 'written in a pleasing style' (95%), 'easy to understand' (91%) and felt it would 'help patients make decisions' (76%), 'be appropriate to give to patients' (91%) and would 'improve patient knowledge and preparedness' (100%). This study has resulted in a high-quality decision-making guide that both patients and professionals consider to be useful and informative.

Moreover as per the researcher's experience in our Indian society humans are always directive in nature and especially in lower class family where man are the only earning members. So the researcher felt that information on side effects of radiation therapy and it's management of oral care , during treatment cycle will be increased patient comfort and the management of subsequent oral problem . As a member of health care provider the researcher has undertaken the responsibility of providing a non judgemental information booklet on side effects of radiation therapy and it's management of patient with oral cancer. Keeping all this in mind the researcher chosen the present study among patient with oral cancer on side effects of radiation therapy and it's management in a radiation therapy unit of cancer hospital.

ASSUMPTIONS

The study assumes that

1. Patient with oral cancer undergoing radiation therapy will have side effects.
2. Information booklet is an accepted method of delivering knowledge.

HYPOTHESES:-

All hypotheses were tested at 0.05 level of significance.

H_1 :- The mean post test knowledge score of patient with oral cancer on side effects of radiation therapy and it's management is significantly higher than the mean pretest knowledge score.

H_2 :- There is significant association between pretest knowledge level of patient with oral cancer on side effects of radiation therapy and it's management with their selected demographic variables.

DEFINITION OF TERMS:-

Effectiveness— In this study effectiveness referred to gain in posttest knowledge score after administration of information booklet on side effects of radiation therapy and it's management as measured by structured knowledge questionnaire .

Knowledge- In this study knowledge referred to the information on side effects of radiation therapy and it's management.

Informational booklet regarding side effects of radiation therapy and it's management –In this study it was a thin booklet containing information regarding 'side effects of radiation therapy and it's management '. The areas were what is the meaning of cell?, what is cancer?, what are the causes of oral cancer?, what are the sign of oral cancer ?, management of oral cancer, what is radiation therapy?, what are the side effects of radiation therapy?, local management, general management and alternative therapy .

Oral cancer— In this study it referred to the cancer in oral cavity around the oropharynx , gingiva , floor of the oral cavity, lower lip, and base of the tongue.

Radiation therapy- In this study it referred the Eternal beam radiation therapy .

Side effects- In this study it referred to the undesired effects after 1^{st} -7^{th} dose of radiation therapy. The side effects were sore throat or mouth, sore or bleeding gums ,dry mouth, changes in food tastes and smells, changes in voice quality, skin changes in treated area.

CONCEPTUAL FRAMEWORK

Conceptual framework acts as building block for the research study. It provides a certain framework of reference for clinical practice, education and research. A conceptual model is a group of concepts and set of propositions that provides prescription on the major concepts. Conceptual model refers to set of values, beliefs and preferences for research approach. The conceptual framework selected for the study was based on Ernestine Wiedenbach's "prescriptive theory" (Clinical Nursing : A Helping Art).,WIEDENBACH'S PRESCRIPTIVE THEORY described as a system of conceptualization invented to some purpose. Prescriptive theory may be described as one that conceptualizes both a desired situation and the perception by which it is to be brought about. The prescriptive theory directs action toward an explicit goal. The factors included in prescriptive theory are central purpose, prescription and realities.

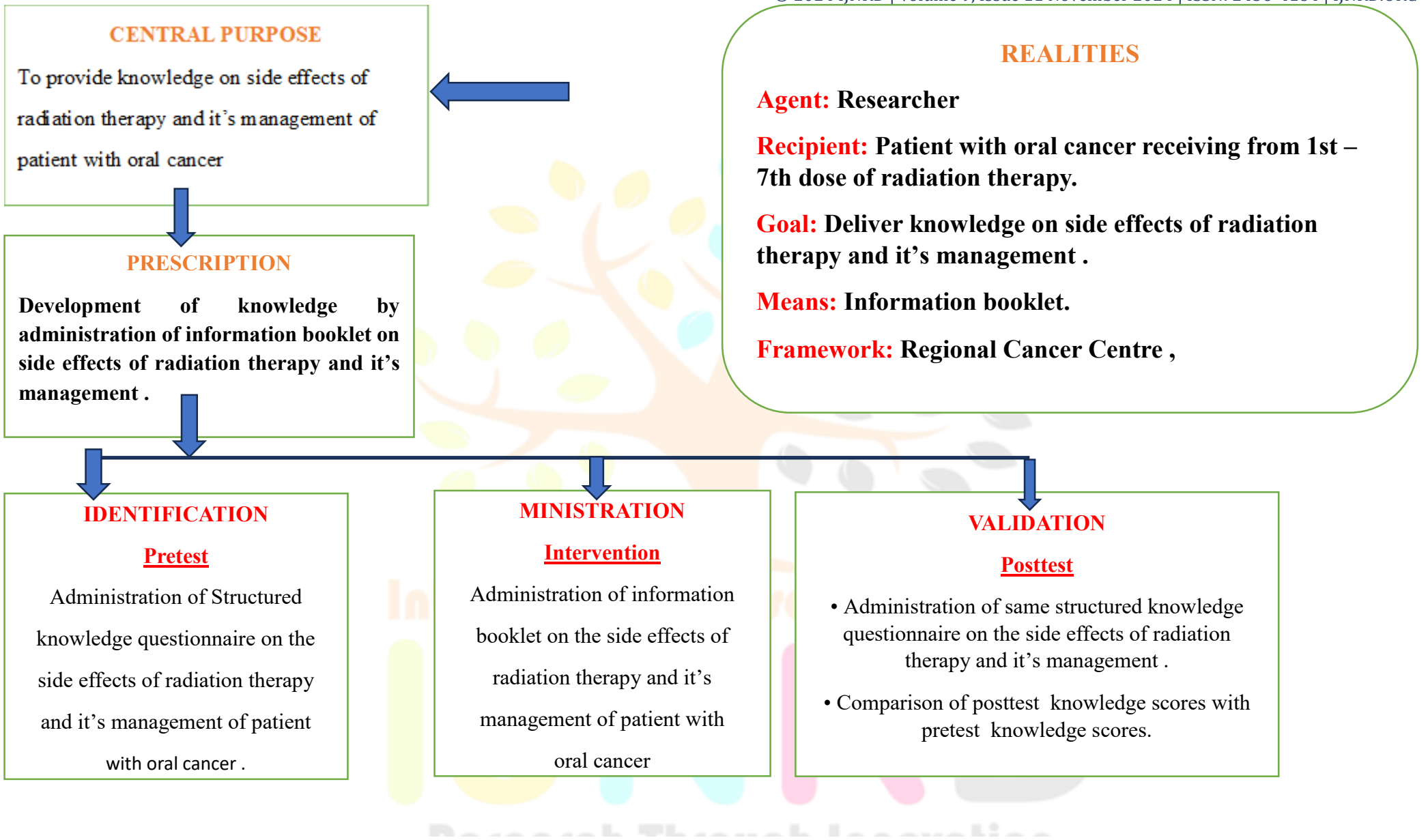

Fig.1 Conceptual framework based on Ernestine Wiedenbach's prescriptive theory (1968) Clinical nursing : A Helping Art (Parker ME. Nursing Theories and Nursing Practice . United States of America : F. A. Davis Company;2001 . p 68-84.

DELIMITATION

• Patient with oral cancer undertaking external beam radiation therapy.

• The sample was only out patient basis.

• Patient with oral cancer receiving 1st to 7th dose of radiation therapy.

• The patient who can read and write Bengali and English.

Review of literature:- The review of literature under this study was organized under the following heading**,** Section 1:- Studies related to management of oral cancer by External beam radiation therapy . Section 2:- Studies related to side effects of radiation therapy and it's management of patient with oral cancer. Section 3:- Studies related to effectiveness of information booklet.

RESEARCH METHODOLOGY:-

Research approach: Quantitative evaluation research approach

↓

Research design: One group pre-test post-test research design

↓

Research setting : Regional Cancer Centre , Agartala, West Tripura**.**

↓

Target population : Oral cancer patients receiving external beam radiation therapy.

↓

Sample size : 30

↓

Sampling technique : Non probability convenience sampling technique.

↓

Selection and development of tools :

Tool I - Demographic proforma

Tool II- Structured knowledge questionnaire on side effects of radiation therapy and it's management

↓

Data collection method : Self administered

↓

Plan for data analysis : Data analysis were done by using descriptive and inferential statistics

↓

Communication of findings

Fig 2:- Schematic presentation of research methodology

RESEARCH DESIGN:-

The schematic representation of the study design was as fallows :-

O1 – Pretest X – Intervention O2 – Posttest

Group	Day 1 O1	Day 1 X	Day 8 O2
Patient with oral cancer **Sample size :- 30**	Administration of tools **Tool I-** demographic proforma **Tool II –** Structured knowledge questionnaire on side effects of radiation therapy and it's management .	Administration of information book let on side effects of radiation therapy and it's management	Administration of Same structured knowledge questionnaire on side effects of radiation therapy and it's management

Fig 3:- Schematic representation of the one group pretest posttest research design

VARIABLES UNDER STUDY

- **Independent variables-** Information booklet on side effects of radiation therapy and it's management .
- **Dependent variables-** knowledge of the patient with oral cancer on the side effects of radiation therapy and it's management.
- **Selected variables-** Age , gender , educational qualification , occupation, place of residence , addiction , site of oral cancer , dose of radiation therapy, information on oral cancer have received from and information on radiation therapy have received from .

Description of tools :-

- Tool I :- Demographic proforma

The demographic proforma has two parts

- Part A:- Personal information – It consisted of six items (6) which were age , gender , educational qualification , occupation , place of residence and addiction .
- Part B:- Health related information – It is composed of four items (4) which were site of oral cancer , dose of radiation therapy, information on oral cancer received from and information on radiation therapy have received from .

- Tool II :- Structured Knowledge questionnaire on side effects of radiation therapy and it's management . There were thirty items (30) and all the items were multiple choice questions, each items had four options and only one correct answer, one mark was allowed for each correct answer.

VALIDITY OF THE TOOLS :- The constructed tool was given to the experts for validity of the tools along with the blue print and objectives of the study. Among ten experts oncologist (1) , statistician (1) , staff nurse from radiation department (1) and Medical Surgical Nursing speciality (7).

RELIABILITY OF THE TOOL:- The tools was tested for it's reliability on 28th-29th September 2011 to 20 patients with oral cancer at AMRI hospital ,Dhakuria, West Bengal . The reliability co-efficient was 0.89 as calculated by using split half technique followed by Spearman Brown prophecy formula. Hence the structured knowledge questionnaire was seemed to be reliable.

ITEM ANALYSIS:- The item analysis of the Structured knowledge questionnaire was done to find out the difficulty index and discriminating index . Out of thirty items 26 items has difficulty index between (50 - 66.6)% ,which indicated that all 26 items of questions were satisfactory and in four items (1,3, 18, 20) the difficulty index has 83.3%, which indicated that all four items were easy questions . All the items has discrimination index 0.33 which indicates that all items were good question.

PILOT STUDY :- The pilot study was conducted in AMRI hospital , Dhakuria, West Bengal between 30th September to 7th October 2011 after obtaining administrative permission from the Medical superintendent . The result showed that mean post test knowledge score (24.4) was higher than the mean pretest knowledge score (19). The calculated 't' value = 5.89 ($t'_9 = 2.26$ $p<0.05$) was significant . So it showed that the information booklet was effective in gaining knowledge on side effects of radiation therapy and it's management .

DATA COLLECTION :- The main study was conducted from 21st to 29th December 2011 on 30 subjects in Regional Cancer Centre , Agartala , West Tripura, after obtaining administrative permission from the Medical superintendent .

ANALYSIS AND INTERPRETATION OF DATA:-

HYPOTHESES:-

All hypotheses were tested at 0.05 level of significance.

H_1 :- The mean post test knowledge score of patient with oral cancer on side effects of radiation therapy and it's management is significantly higher than the mean pretest knowledge score.

H_2 :- There is significant association between pretest knowledge level of patient with oral cancer on side effects of radiation therapy and it's management with their selected demographic variables.

Null hypotheses:-

H_{01}:- The mean post test knowledge score of patient with oral cancer on side effects of radiation therapy and it's management is not significantly higher than the mean pretest knowledge score.

H_{02}:- There is no significant association between pretest knowledge level of patient with oral cancer on side effects of radiation therapy and it's management with their selected demographic variables.

The findings of the study have been organized and presented in the following sections:-

SECTION I :- Description of demographic proforma

Table 1:- Frequency and percentage distribution of personal information

n=30

Characteristics	frequency (f)	percentage(%)
1. Age in years		
≤20 years	00	00
21-40 years	03	10.00
41-60 years	15	50.00
>60 years	12	40.00
2. Gender		
Male	26	86.67
Female	04	13.33
3. Educational qualification		
Primary level	08	26.67
Secondary level	08	26.67
High Secondary level	10	33.33
Graduate and above	04	13.33
4. Occupation		
Govt . employee	01	3.34
Private employee	03	10.00
Business and others	13	43.33
Unemployed	13	43.33
5. Place of residence		
Urban	12	40.00
Rural	15	50.00
Semi urban	03	10.00
6. Addiction		
Chewing tobacco/ pan /betel nut's	19	63.33
Smoking	06	20.00
Alcohol	00	00
d. No addiction	05	16.67

The data presented in the table 1 showed that 15 (50%) oral cancer patients belonged to age group of 41-60 years , 26(86.67%)patients were male , 10(33.33%) patients were from higher secondary education , 13(43.33%) patients in businessman and unemployed in occupation. Majority of the patients were [15(50%)] from rural place , Maximum patients were addicted to [19(63.33%)] chewing tobacco/pan/betel nut's.

Table 2:- Frequency and percentage distribution of health related information

n=30

Characteristics	frequency (f)	Percentage (%)
7. Site of oral cancer		
Gum and gingival buccal sulcus	11	36.67
Cheek and buccal mucosa	15	50.00
Base of tongue	02	6.67
Lower lips	01	3.33
Palate	00	00
		3.33

Wisdom teeth	01	
8. Dose of radiation therapy taken		
1st – 3rd dose	20	66.67
4th - 7th dose	10	33.33
9. Information on oral cancer have received from		
News paper and journal / information displayed in public place		
Radio, television and internet	06	20.00
Peer groups and neighbours and relatives	02	6.67
Health professional/ health educator	06	20.00
	16	53.33
10. Information on radiation therapy have received from		
News paper and journal / information displayed in public place		
Radio, television and internet	03	10.00
Peer groups and neighbours and relatives	02	6.67
d. Health professional/ health educator	02	6.67
	23	76.66

The data presented in the table 2 showed that out of 30 sample, 15(50%) patients had cancer on cheek and buccal mucosa. All the patients were receiving radical radiation therapy . Out of 30 samples 20(66.67%) patients had receiving 1st -3rd doses of radiation therapy , 10(33.33%) patients had receiving 4th to 7th dose of radiation therapy . Majority [16(53.33%)] of the patients had received information on oral cancer from health professional /health educator and 23(76.66%) patients had received information on radiation therapy from health professional/health educator.

SECTION II :- Effectiveness of an information booklet on side effects of radiation therapy and it's management of a patient with oral cancer .

Table 3:- Range ,mean ,median, standard deviation ,mean deference and 't' value of pretest and post test knowledge score

n=30

knowledge	Range	Mean	Median	Standard deviation	Mean difference	't' value
Pretest	6-20	11.5	11.83	3.612	11.8	21.83*
Postest	17-29	23.3	24.1	3 .437		

't'$_{29}$ =2.04 p<0.05 level of significance

The data presented in table 3 shows that the mean difference between the pretest and posttest knowledge score was 11.8 , computed 't' value (21.83) statistically found to be significant ('t' (29) = 2.04 p<0.05) . Hence the null hypotheses was rejected and research hypothesis was accepted . Thus the information booklet was effective to gain in knowledge on side effects of radiation therapy and it's management of patient with oral cancer . So from the above analysis and interpretation of data presented in tables indicate that an information booklet on

side effects of radiation therapy and its management of a patient with oral cancer significantly increased the knowledge in post test .

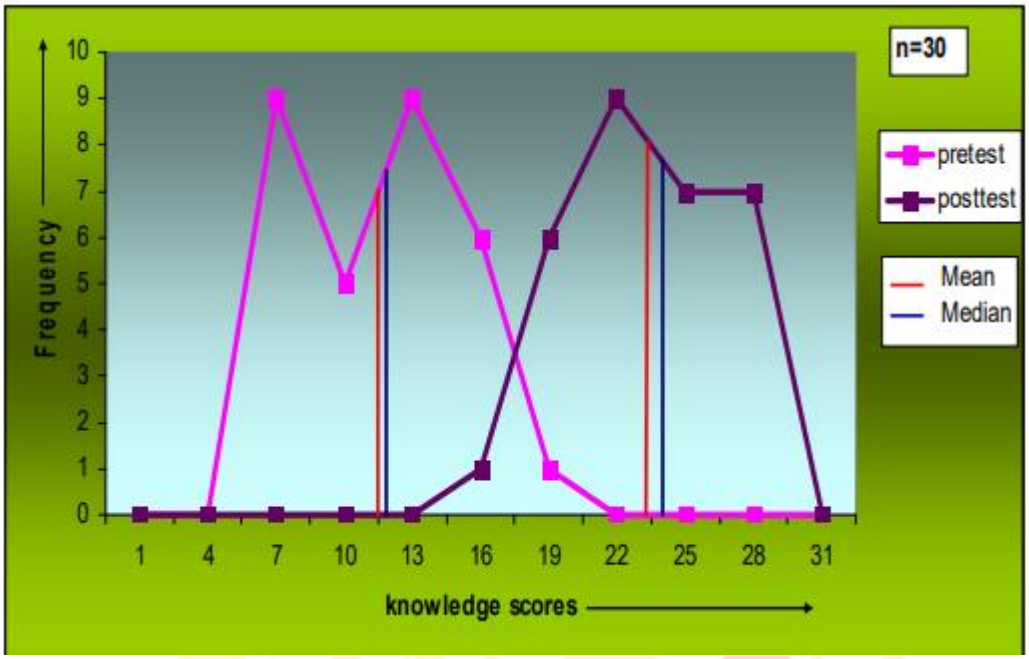

Fig. 4:- Frequency polygon on pretest and posttest knowledge scores

The pretest and posttest frequency polygon presented in fig.4 where showed that the posttest frequency polygon lie at the right side of the pretest frequency polygon indicating a higher score range during posttest compared to pretest. In both pre test and post test frequency polygon mean and median lie close to each other and mean lie at the left side of median, indicated that the scores were negatively skewed. The skewness of pretest frequency polygon was -0.274 and the skewness of post test frequency polygon was -0.698 ,where in posttest most of the samples lies more than the average knowledge score . So it is indicated that there was significant gain in post test knowledge scores after administration of information booklet on side effects of radiation therapy and it's management of patient with oral cancer.

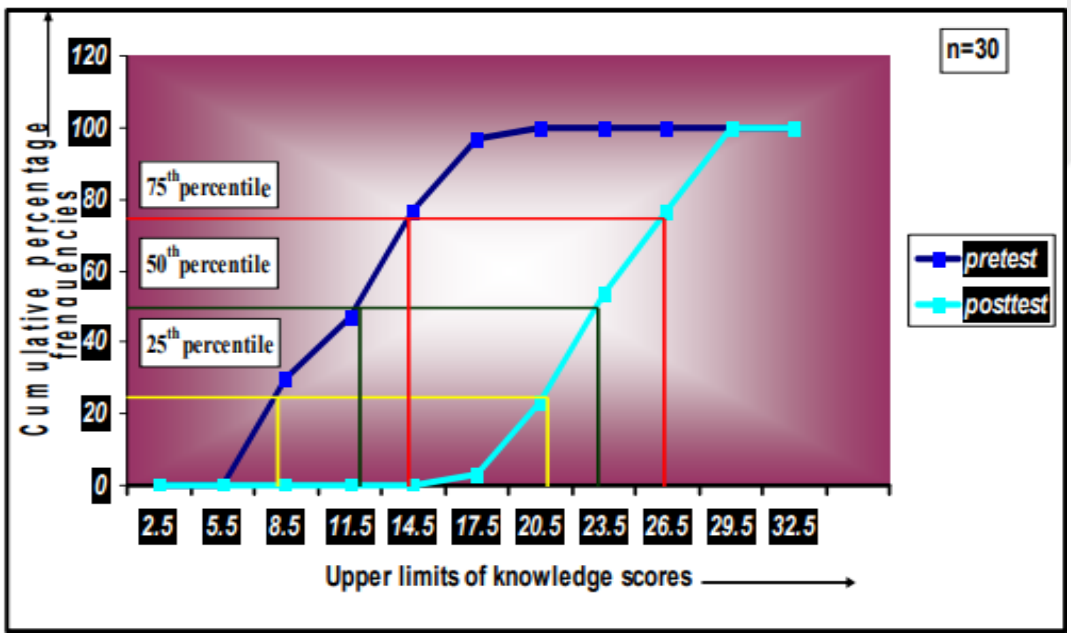

Fig.5:- Ogive represents Pretest and Posttest knowledge score

The cumulative frequency percentage of pre test and post test knowledge scores were presented in Fig 5. The post test Ogive lie to the right of the pretest Ogive over the entire range, indicating that the posttest knowledge scores were consistently higher than the pretest knowledge scores. It also revealed that the gain in knowledge in post test by comparing the score of pre test at the level of 25th percentile (Q1) were 20.67 and 8.0, at 50th percentile (Q2) as 23.17 and 11.83, 75th percentile (Q3) as 26.28 and 14.33. Thus the gain in knowledge of patient after administration of information booklet on side effects of radiation therapy and it's management with oral cancer was obvious by significant differences in pretest and posttest knowledge scores at various levels of Ogive**.**

Table 4

Area wise comparison of mean percentage, actual and modified knowledge gain between pre test and post test.

n=30

Areas of knowledge	Mean percentage (%) Pretest	Posttest	Actual gain score	Modified gain score
I) What is the meaning of cell?	43	90	47	0.824
II) What is cancer?	33	93	60	0.895
III) What are the causes of oral cancer?	**70**	100	**30**	**1**
IV) What are the sign of oral cancer ?	10	73	63	0.7
V) Management of oral cancer .	67	97	30	0.91
VI) What is radiation therapy ?	50	93	43	0.86
VII)What are the side effects of radiation therapy ?	33.33	76.67	**43.34**	**0.650**
VIII) Local management	26.625	63.75	**37.125**	**0.506**
IX) General management	46.63	80.27	33.64	0.630
X) Alternative therapy	25	86.5	61.5	0.82

The modified gain scores presented in table 4 showed that the maximum (1) modified gain was found in the area of 'what are causes of oral cancer?', followed by 0.91 modified gain score had in the area of ' management of oral cancer', 0.895 modified gain score had in the area of 'what is cancer ?', 0.86 modified gain score had in the area of "what is radiation therapy?', 0.824 modified gain score had in the area of' what is the meaning of the cell?' followed by 0.82 modified gain score had in the area of ' alternative therapy ', 0.7 modified gain score had in the area of 'what are the signs of oral cancer?', 0.650 modified gain score had in the area of 'what are side effects of radiation therapy?' , 0.630 modified gain score had in the area of 'general management' and 0.506 modified gain score had in the area of 'local management ', . So it can be concluded that there were area wise significant gain in knowledge in posttest.

SECTION III :- Association between pretest knowledge level with selected demographic variables

The chi square values computed between pre test knowledge level with selected variables were not significant at 0.05 level of significance. Thus research hypothesis was rejected and null hypothesis was accepted. So these selected variables were not significantly associated with pretest knowledge level of patient with oral cancer on side effects of radiation therapy and it's management. Hence the knowledge of the patient was independent and not associated with age , gender , educational qualification , occupation, place of residence , addiction , site of oral cancer , dose of radiation therapy, information on oral cancer have received from and information on radiation therapy have received from .

CONCLUSION:- From the findings of the present study it can be concluded that information booklet on side effects of radiation therapy and it's management of patient with oral cancer was effective in terms of gain in knowledge among patient with oral cancer. The study findings also revealed that there was no significant association between the pre test knowledge level among the patient with oral cancer with selected variables such as age, educational qualification, occupation, residence, addiction, site of oral cancer, doses of radiation therapy, information on oral cancer have received from and information on radiation therapy have received from .

IMPLICATIONS

NURSING EDUCATION :- The information booklet can be used as a ready reframe by the nursing personnel and nursing student in the radiation therapy unit to enhance their knowledge and clarify their doubts regarding the side effects and it's management

NURSING PRACTICE :- An information booklet are helpful to take part in imparting a knowledge to the people and help to find out the side effects of radiation therapy and help them to cope up with the situation. The community health nurses would be able to advise the home level management with the help of this information booklet to the patients, undertaking radiation therapy and their family

NURSING ADMINISTRATION :- The nursing administrator should supervise the nurse while teaching the patient and their family. Pamphlets, hand out , patient booklet should be kept in radiation unit , out patient department for further use by patient and their relatives. The nurse administrator can take part in formulating public health policies and further the dissemination of health information.

NURSING RESEARCH :- The study can be conducted by considering various factors related to physical, psychological, social and economical relating to radiation therapy .

LIMITATION:-

• The present study was limited only to a small, thus posing restriction to make

broader generalization .

• The study did not use a control group, hence exposing the finding to the

possibility of biasness.

RECOMMENDATION :-

• The similar study may be conducted by taking large sample .

• A study could be conducted on the health professional (nurses) to assess their knowledge and attitude towards the side effects of radiation therapy and it's management .

• A follow up study can be conducted to evaluate the information booklet on long term side effects of radiation therapy and it's management among patient with oral cancer .

REFERENCES

1. Jemal A, Bray F, Center M, Ferlay J, Ward E ,Forman D. Global Cancer Statistics. Cancer journal of clinical 2011;61:69–90.

2. Petersen P. Strengthening the prevention of oral cancer: the WHO perspective. Community Dentistry and Oral Epidemiology 2005; 33: 397–9.

3. Paymaster J C , Gangadharan P . Oral and pharyngeal cancer in India. Mumbai: Mosby company 2001; 71-3.

4. Mehrotra R, Singh M, kumar D, Pandey AN, Gupta RK , Sinha US. Age specified incidence rate and pathological spectrum of oral cancer in allahabad. Indian journal of medical sciences. [Serial online]. 2003;57(9): p 400-4. Available from:http://www.indianjmedsci.org/text.asp?2003/57/9/400/11871.

5. Attner P, Du J, Nasman A, Hammarstedt L , Torborn R, Marklund L, Dalianis T , Wikland E . The role of Human Papilloma Virus in the increased incidence of base of tongue cancer . International journal of cancer 2009;126(4): 2879-83.

6. Khandekar P, Bagdey P, Tiwari R . Oral Cancer and some epidemiological factors : a hospital based study . Indian Journal of Community Medicine 2006 July –September; 31(3): 233-7.

7. Attar E , Dey S ,Hablas A ,Seifeldin IA , Ramadan M , Rozek LS , Soliman . Head and neck cancer in a developing country: a population-based perspective across 8 years . Oral Oncology. [Serial online]. 2010 Aug; 46(8): p 345-7. Availablefrom:URLwww.cinahl.com/cgibin/refsvc?jid=3264&accno=2010737082.

8. Buunk AP , Sanderman R . Social comparison and coping with radiation therapy the

significance of different dimensions of comparison. Oral Oncology. [Serial

online].2003; 8(3):33-7.Available from : http://irs.ub.rug.nl/ppn/243381352.

9. Sankaranarayanan R, Ramadas K, Thomas G, Muwonge R, Thara S, Mathew B,

Rajan B. Effect of screening on oral cancer mortality in Kerala, India: a clusterrandomised controlled trial. Lancet 2005 June; 365 (4): 1927–33.

10. The times of India . 2011; 6. Available at : URL www.timesofindia.com.

72

11. Mitra P. Cancer on the rise among youth. The times of India .2009; 3. Available at :

URL www.timesofindia.com.

12. Oral cancer foundation, kolkata Project entrusted by Ministry of Health & Family

Welfare, Govt. of India with funding from World Health Organization (India) .

2009; 3. Available at : URL www.timesofindia.com.

13. Smeltzer CS , Bare GB . Brunner and suddarth's testbook of medical surgical

nursing, 10th ed.2004 Wolters kluwer; Philadelphia: p 654-5.

14. Pramilaa R. Nursing Communication and Educational Technology .1st ed. Haryana:

Jitendar P Vij; 2010. p 205-6.

15. Jesse H. The treatment of oral cancer.Ca–A cancer journal for clinicians,1998; 5(6):

209-15.

16. Emily A, klein B , Michael G, Gregory F , Quang L, Derick H Srinivasan V. Primary

Radiation Therapy for Head and Neck Cancer in the setting of Human

Immunodeficiency Virus. International journal radiation oncology, biology, physics

2011;79(1):p 60-4.

17. Patricia M, Erika L, Renata L, Andre L, Carvalho A Scheperand AF .Oral health

status of 207 head and neck cancer patients before, during and after radiotherapy.

Clinical Oral investigations 2001;12(1): p 19-24.

18. Parsons J T . Management of head and neck cancer a multidisciplinary approach

.Philadelphia: J.B. Lippincott company; 2001. p 173-5.

19. Fletcher HG. Testbook of Radiotherapy .2nd ed . Philadelphia: Lea Febiger; 2009.p

456-9.

20. Hogarth H , Mcaleer L. Patient with oral cancer could be exacerbated and can also increase the risk of infection during radiation therapy, thus further reducing the quality of life. International journal radiation oncology, biology, physics 2007;9(1):p 61-4.

21. Reddall C. A study to assess the side effects of radiation therapy related characteristics .Clinical oncology[Serial online]. 2001;36(2): p 34-7. Available from : URL www.cinahl.com/cgi-bin/refsvc?jid=635&accno=201069056