To Evaluate the Effectiveness of Awareness Program on Self Care Management Among Patients Undergoing Radiotherapy

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ABSTRACT

Diagnosis and treatment of cancer can contribute to psychological distress and anxiety among cancer patients. Evidence indicates that information giving can be beneficial in reducing patient anxiety. To assess the pre-test knowledge regarding self care management among patients undergoing radiotherapy.2) To assess the pre-test perception regarding self care management among patients undergoing radiotherapy. 3)To evaluate the effectiveness of awareness program on self care management among patients undergoing radiotherapy. 4.)To assess the post-test knowledge regarding self care management among patients undergoing radiotherapy. 5)To assess the post-test perception regarding self care management among patients undergoing radiotherapy.6) To associate the knowledge regarding self care management among radiotherapy receiving patients related to their demographic variable.7) To associate the perception regarding self care management among radiotherapy receiving patients related to their demographic variable. This study was based on an Interventional evaluatory approach. In this study 60 Head and Neck cancer patients undergoing radiotherapy were included. The result shows the findings of the study were discussed. The mean value of the pre-test knowledge score is 4.68 and effectiveness of the awareness program is 13.88 .The mean difference between pre-test and post-test knowledge scores is 9.20 ± 3.01 . The mean value of the pre-test perception score is 44.56 and effectiveness of the awareness program is 76.76 .The mean difference between pre-test and post-test perception scores is 32.20 ± 12.89 . Hence it is statistically interpreted that the awareness program on knowledge and perception regarding self care management among cancer patients undergoing radiotherapy was effective.

KEY WORDS: EFFECTIVENESS, AWARENESS PROGRAM, SELF CARE MANAGEMENT, PATIENTS UNDERGOING RADIOTHERAPY. POWER; HYDRO PLANT; MOPSO; POWER SYSTEMS; TRANSMISSION LOSSES; VALVE POINT EFFECT.

INTRODUCTION

Cancer is one of the most significant as well as a life-threatening disease. In the health care delivery system, a large number of care efforts are required for this disease. Cancer is a large group of diseases it commences in our body in any system when cells started to grow rapidly without control. In cancer cell growth is considered abnormal. In the current situation, According to estimates

from the World Health Organization (WHO) in 2019 cancer is the first or second leading cause of death worldwide. Overall, the burden of cancer incidence and mortality is rapidly growing worldwide. The worldwide cancer burden is estimated at 19.3 million new cases and 10 million deaths occurred in 2020. breast cancer has surpassed lung cancer as the most commonly diagnosed cancer, with an estimated 2.3 million new cases (11.7%), followed by lung (11.4%), colorectal (10.0 %), prostate (7.3%), and stomach (5.6%) cancers. Lung cancer remained the leading cause of cancer death, with an estimated 1.8 million deaths (18%), followed by colorectal (9.4%), liver (8.3%), stomach (7.7%), and female breast (6.9%) cancers.

According to the head and neck cancer burden, the prevalence of head and neck cancer has 57.5% globally occur in the Asian region especially in India. In India,

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30% of patients reported head and neck cancer from all types of cancers. Patients in India have advanced stages of disease in 60 to 80 percent of cases, compared to 40 percent in more developed nations. The upper aerodigestive tract, paranasal sinuses, salivary glands, and thyroid glands are all affected by head and neck cancer. Managing head and neck cancer needed a multidisciplinary approach, but surgical procedure and radiotherapy became the most effective therapies.

Patients with head and neck cancer commonly having a significant problem with body image because of disfigurement of body parts and organ dysfunction due to disease and the treatment. The patient with head and neck cancer having extensive disfigurement especially after surgery had a significantly higher impact on their self-image. Eighty-five percent of head and neck cancer caused due to use of tobacco and it is the largest risk factor which includes smoking and chewing tobacco. Other risk factors are considered such as heavy alcohol consumption, environmental or occupational inhalants, poor oral and dental hygiene, Human papillomavirus (HPV) are risk factors for developing head and neck cancer.

According to different types of cancer and their location, every person reacts uniquely to the treatment of cancer. The side effect of radiotherapy had classified the acute and chronic side effects. The acute side effect occurs instantly within weeks of during the treatment period. The adverse effect for short periods such as on acute basis includes nausea and vomiting like feeling, exhaustion, skin desquamation and chronic adverse effects of radiotherapy include bald-headedness, scarring, cancer blood-forming tissue (Leukemia) and hereditary problems. Cancer survivors are increasingly focusing on optimizing their general well-being and quality of life by adopting illness self-management principles and encouraging safe habits such as stopping smoking, keeping a healthy body weight, limiting ultraviolet radiation exposure, and remaining physically active throughout their lives. Several strategies for cancer patients have been created and tested to help them control their diet, weight, and physical activity.

Research has shown that Radiotherapy (RT) is an effective treatment modality in head and neck cancer. RT has the potential treatment to improve the rate of cure and provide palliative relief to additional people. These optimistic assumptions are based on the fact that only about half of all cancer patients will benefit from radiation therapy in the treatment of their disease. 10 Studies on self-care awareness and perception undergoing radiotherapy patients have shown that the patient having low levels of awareness and negative perception regarding self-care management.

Objectives

1. To assess the pre-test knowledge regarding self care management among patients undergoing radiotherapy.
2. To assess the pre-test perception regarding self

care management among patients undergoing radiotherapy.

3. To evaluate the effectiveness of awareness program on self care management among patients undergoing radiotherapy.
4. To assess the post-test knowledge regarding self care management among patients undergoing radiotherapy.
5. To assess the post-test perception regarding self care management among patients undergoing radiotherapy.
6. To associate the knowledge regarding self care management among radiotherapy receiving patients related to their demographic variable.
7. To associate the perception regarding self care management among radiotherapy receiving patients related to their demographic variable.

METHODS

An Interventional evaluatory study was undertaken on 60 purposively Head and neck cancer patients who are undergoing radiotherapy from the selected hospital in the Vidarbha region. Data was collected by using a structured knowledge questionnaire and perception questionnaire from November 2020 to December 2020. Before the data collection, the willing consent from a participant was taken in their understanding language. Those who were diagnosed with head and cancer patients undergoing radiotherapy were included in the study and those who already attended a similar type of study before 6 months were excluded from the study. A tool was derived through several steps of item generation, reduction, weightage, pilot testing of the tool and validating of the tool. The content validity was determined after the opinion of 10 experts in the field of medical-surgical nursing. The tool was later revised by English - language expert and then translated into the Marathi language by language experts without altering the meaning of the tools.

The Institutional Ethical Committee of Datta Meghe, Institute of Medical Sciences, deemed to be university sanctioned approval for conducting the research study Central Ethics Committee on Human Research. Ref. No. DMIMS (DU) / IEC / Dec - 2019 / 8686 was obtained. The findings were summarized by concentration and percentages categorically. The program used in the study was SPSS 24.0 . To accomplish the objective of the study, the investigator collected data from 60 head and neck cancer patients undergoing radiotherapy. A structured knowledge questionnaire and perception questionnaire including 20 items based on self care management undergoing radiotherapy scoring for knowledge questionnaire each correct answer carried 1 mark and 0 were given for the wrong response. Knowledge was graded from poor to very good knowledge based on scores.

The minimum score was (1) and the maximum score was (20). Based on the total number of correct responses the degree of knowledge was classified as Poor (1-5), Average (6 - 10), good (11 - 15) and very good (16 - 20). The

perception level score was graded from strongly agree, agree, neutral, strongly disagree, disagree perception level based on scores. Data collection was conducted with the pre-test questionnaire on 1st day and after the pre-test assessment of knowledge and perception, The Informational booklet on awareness program of self care management during radiotherapy was provided to each head and neck cancer patient undergoing radiotherapy. The post-test assessment of knowledge and perception questionnaire was conducted with the same structured questionnaire on the 7th day of assessment.

RESULTS

Section - A The percentage-wise distribution of demographic variables of patient's data undergoing radiotherapy.

Table 1. Percentage-wise distribution of demographic variables of patient's data. n=60

Demographic variables	No. of patients	Percentage (%)
Age in (yrs.)		
21-30 yrs.	03	05.0
31-40 yrs.	08	13.3
41-50 yrs.	26	43.3
51-60 yrs.	15	25.0
>60 yrs.	08	13.4
Gender		
Male	35	58.3
Female	25	41.7
Monthly income (Rs)		
Rs 51-10000/-	34	56.7
Rs 10001-15000/-	14	23.3
Rs 15001-20000/-	04	06.7
Rs 20001 and above	08	13.3
Educational status		
Primary	41	68.3
Higher Secondary	14	23.3
Graduate	04	06.7
Post Graduate and above	01	01.7
Number of radiotherapy cycles completed		
1-10 Fraction	19	31.7
11-20 Fraction	20	33.3
21-30 Fraction	17	28.3
31-40 Fraction	04	06.7

The above table no - 1 shows that the distribution of head and neck cancer patients according to their age in years indicates that 3 (5%) of the patients were in the 21-30 age group, 8 patients (13.30%) were in 31-40 years age group, 26 (43.30%) had in the 41-50 years age group, 15 (25%) had in 51-60 years age and 8 (13.40%) were more than 60 years age group. The distribution of head and neck cancer patients according to their gender indicates that 35(58.30 %) of male patients and 25 (41.70%)

of females. The distribution of head and neck cancer patients according to monthly income in rupees shows that 34 (56.70%) of the patients had monthly income between Rs 5001-10000, 14 (23.30%) had between Rs 10001-15000, 4(6.70%) had between Rs 15001-20000 and 8 (13.30%) of the patients had monthly income between Rs 20001 and more.

Table 2. Assessment with the level of pre-test knowledge score. n=60

Level of pre-test knowledge score	Score range	Percentage score (%)	Level of pre-test knowledge score	
			No of patients	Percentage (%)
Poor	1-5	0-25	44	73.33
Average	6-10	26-50	10	16.67
Good	11-15	51-75	05	08.33
Very Good	16-20	76-100	01	01.67
Minimum score			01	
Maximum score			20	
Mean knowledge score			4.68 ± 3.68	
% of knowledge score			23.41 ± 18.44	

Figure 1: Assessment with the level of pre-test knowledge score

Table 3. Assessment with the level of post-test knowledge score. n=60

Level of post-test knowledge score	Score range	Percentage score (%)	Level of post-test knowledge score	
			No of patients	Percentage (%)
Poor	1-5	0-25	00	00.00
Average	6-10	26-50	03	05.00
Good	11-15	51-75	44	73.33
Very Good	16-20	76-100	13	21.67
Minimum score			09	
Maximum score			20	
Mean knowledge score			13.88 ± 2.40	
% of knowledge score			69.41 ± 12.00	

Figure 2: Assessment with the level of post-test knowledge score.

The distribution of head and neck cancer patients according to their educational status shows that 41(68.30%) of the patients were educated up to primary standard, 14 (23.30%) up to higher secondary standard, 4 (6.70%) was graduates and 1 (1.70%) of the patients were postgraduates and above. The distribution of head and neck cancer patients according to their number of radiotherapy cycles completed in fraction shows that 19 (31.7%) of the patients completed between 1-10 fraction of radiotherapy cycles, 20 (33.30%) patients completed between 11-20 fraction, 17 (28.30%) completed between 21-30 fraction and 4 (6.70%) of the patients completed between 31-40 fraction of radiotherapy cycles. Section - B The Assessment of existing knowledge and post-test knowledge regarding self care management among patients undergoing radiotherapy. Above table no.2 and fig no.1 shows that 44 (73.33%) of the patients were having a poor level of knowledge score in the pre-test, 10 (16.67%) patients had average, 5 (8.33%) patients had good and 1(1.67%) the patients have a very good level of knowledge score.

Table 4. Pre-test perception score regarding self care management among patients undergoing radiotherapy. n=60

Level of pre-test perception score	Score range (%)	Level of pre-test perception score	
		No of patients	Percentage (%)
Disagree	01-20	00	00.00
Strongly Disagree	21-40	27	45.00
Neutral	41-60	26	43.33
Agree	61-80	06	10.00
Strongly Agree	81-100	01	01.67
Minimum score		29	
Maximum score		82	
Mean perception score		44.56 ± 12.43	
% of perception score		44.56 ± 12.43	

Figure 3: Pre-test perception score regarding self care management among patients undergoing radiotherapy.

Above table no.3 and fig no.2 shows that 3(5%) of the patients were having an average level of knowledge score in the post-test, 44 (73.33%) had good, and 13 (21.67%) of the patients had a very good level of knowledge score. Section - C Assessment of existing perception and post-test perception regarding self care management among patients undergoing radiotherapy.

Above table no.4 and fig no.3 shows pre-test perception score regarding self care management among patients

undergoing radiotherapy shows that 27(45%) of the patients were strongly disagree, 26 (43.33%) were neutral, 6 (10%) agree and 1(1.67%) of the patients strongly agree.

Above table no.5 and fig no.4 show post-test perception score regarding self care management among patients undergoing radiotherapy shows that 2 (3.33%) of the patients were neutral, 45 (75%) were agree and 13 (21.67%) of the patients were strongly agree.

Table 5. Post-test perception score regarding self care management among patients undergoing radiotherapy. n=60

Level of post-test perception score	Score range (%)	Level of post-test perception score	
		No of patients	Percentage
Disagree	1-20	00	00.00
Strongly Disagree	21-40	00	00.00
Neutral	41-60	02	03.33
Agree	61-80	45	75.00
Strongly Agree	81-100	13	21.67
Minimum score		56	
Maximum score		89	
Mean perception score		76.76 ± 5.95	
% of perception score		76.76 ± 5.95	

Figure 4: Post-test perception score regarding self care management among patients undergoing radiotherapy.

Table 6. Significance of difference between knowledge score in pre and post-test of patients undergoing radiotherapy. n=60

Overall test	Mean	Standard Deviation	Mean Difference	T-Value	P-Value
Pre-test	04.68	3.68	9.20±3.01	23.60	0.0001 S, p<0.05

The section - D I)The effectiveness of awareness program on knowledge regarding self care management among patients undergoing radiotherapy.

Above table no.6 and fig no.5 shows a comparison of pre-test and post-test knowledge scores of patients undergoing radiotherapy regarding self care management. Mean, standard deviation and mean difference values are compared and the student's paired 't' test is applied at a 5% level of significance. The tabulated value for n=60-1

i.e., 59 degrees of freedom was 2.00. The calculated 't' value i.e., 23.60 is much higher than the tabulated value at 5% level of significance for the overall knowledge score of patients undergoing radiotherapy which is a statistically acceptable level of significance. Hence it is statistically interpreted that the awareness program on knowledge regarding self care management was effective.

II) The effectiveness of awareness program on perception regarding self care management among patients undergoing radiotherapy.

Figure 5: Significant difference between pre-and post-test knowledge scores of patients undergoing radiotherapy.

Table 6. Significance of difference between knowledge score in pre and post-test of patients undergoing radiotherapy. n=60

Overall test	Mean	Standard Deviation	Mean Difference	T- Value	P- Value
Pre-test	44.56	12.43	32.20±12.89	19.33	0.0001
Post-test	76.76	05.95			S, p<0.05

Figure 6: Significance of difference between perception score in pre and post-test of patients undergoing radiotherapy.

Above table no.7 and fig no.6 shows a comparison of pre-test and post-test perception scores of patients undergoing radiotherapy regarding self care management. Mean, standard deviation and mean difference values are

compared and the student's paired 't' test is applied at a 5% level of significance. The tabulated value for n=60-1 i.e., 59 degrees of freedom was 2.00. The calculated 't' value i.e., 19.33 is much higher than the tabulated value at a 5% level of significance for the overall perception score of patients undergoing radiotherapy which is the statistically acceptable level of significance. Hence it is statistically interpreted that the awareness program on perception regarding self care management was effective.

The section - E Correlation between knowledge and perception regarding self care management among patients undergoing radiotherapy.

Above table no.8 and fig no.7 show by using Pearson's correlation coefficient positive correlation was found between knowledge score and perception score of patients ($r=0.31$, $p=0.008$).

The section - F Association of knowledge and perception score regarding self care management among patients undergoing radiotherapy with their selected demographic variables.

There is no significant association of knowledge score with gender, monthly income in rupees, number of radiotherapy cycles completed only there is a significant association of knowledge score with age and educational status. The perception score is not significantly associated with age, gender, monthly income in rupees, only there is a significant association of perception score with educational status and number of radiotherapy cycles completed.

DISCUSSION

The findings of this study show that the mean value of the pre-test knowledge score is 4.68 and effectiveness of the awareness program is 13.88 The mean difference is 9.20±3.01 between the pre-test and the post-test information score. 23.60 is the calculated t-value and 0.0001 is the p-value. The mean value of the pre-test perception score is 44.56 and effectiveness of the awareness program is 76.76 . The mean difference between the perception score for the pre-test and post-test is 32.20 ± 12.89. 19.33 is the calculated t-value and 0.0001 is the p-value. Hence it is interpreted that an awareness program on knowledge and perception regarding self care management during radiotherapy was effective.

A similar type of study was conducted in the Ashwin Cancer Hospital Coimbatore between April 2015, a total of 30 patients with head and neck cancer i.e., oral cancer to determine the efficiency of intervention (Package for Information Education and Communication) on knowledge and practice concerning the management of side effects due to radiotherapy. Using the structured knowledge and practice questionnaire, Pre-test knowledge and practice score regarding the management of radiotherapy side effects. The mean knowledge score

of pre-tests was 8.93 and the post-test was 26.03. The mean score for pre-test practice was 7.23 and for post-test practice was 16.36.

The mean difference between the pre-test and the post-test indicates that the patients had insufficient knowledge and poor practice concerning the side effects and radiotherapy management. The intervention i.e. The package on Information, Education and Communication

booklet for managing the side effects due to radiotherapy was distributed to patients. The calculated t-value was 20.29 for the knowledge score and 13.91 for the practice score. At $p < 0.05$ significance level. The outcomes after intervention show that there has been a significant improvement in knowledge and practice regarding the management of radiotherapy side effects among patients with oral cancer receiving radiotherapy. After that reveals the intervention i.e., the IEC package was effective.

Table 8. Correlation between knowledge and perception score of patients. Pearson's Correlation Coefficient

	Mean	Std. Deviation	N	Correlation 'r'	p-value
Knowledge score	13.8833	2.40121	60	0.341	0.008, S
Perception score	76.7667	5.95567	60		

Figure 7: Correlation between knowledge and perception score of patients.

CONCLUSION

The present research was conducted to determine the effectiveness of the awareness program on self care management during radiotherapy among head and neck cancer patients undergoing radiotherapy. The result of this study shows Mean value of the pre-test knowledge score is 4.68 and effectiveness of the awareness program is 13.88. The mean difference is 9.20 ± 3.01 between the pre-test and the post-test score of knowledge. 23.60 is the calculated t-value and 0.0001 is the p-value. The mean value of the pre-test perception score is 44.56 and effectiveness of the awareness program is 76.76. The mean difference between the perception score of the pre-test and the post-test is 32.20 ± 12.89 . 19.33 is the calculated t-value and 0.0001 is the p-value. Hence it is interpreted that an awareness program on knowledge and perception regarding self care management during radiotherapy was effective.

REFERENCES

- Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries - Sung - 2021 - CA: A Cancer Journal for Clinicians - Wiley Online Library.
- Yeh S-A. (2010) Radiotherapy for Head and Neck Cancer. Seminars in Plastic Surgery. May;24(2):127.
- A Study to Assess the Effectiveness of Information, Education and Communication Package on Knowledge and Practice Regarding the Management of Selected Side Effects of Radiation Therapy Among Clients with Oral Cancer in Ashwin Hospital, Coimbatore.
- Head and Neck Cancer - Risk Factors and Prevention. Cancer.Net. 2012.history_cancer.pdf
- Hung T-M, Lin C-R, Chi Y-C, Lin C-Y, Chen EY-C, Kang C-J, et al. (2017) Body image in head and neck cancer patients treated with radiotherapy: the impact of surgical procedures. Health Qual Life Outcomes Aug 23.
- Kulkarni M. (2013) Head and Neck Cancer Burden in India. International Journal of Head and Neck Surgery. Jan 1; 4:29-35.
- Promoting a Healthy Lifestyle among Cancer Survivors.
- Radiation Therapy for Cancer - PubMed.
- Radiation Therapy Side Effects.
- Soko GF, Burambo AB, Mngoya MM, Abdul BA. (2019) Public Awareness and Perceptions of Radiotherapy and Their Influence on the Use of Radiotherapy in Dar es Salaam, Tanzania. J lob Oncol. Nov; 5:1-10.