

Effectiveness of Bio Psychosocial Intervention on Depression and Coping Strategy among Head and Neck Cancer Patients Undergoing Radiotherapy in Selected Cancer Research Institute of Dehradun Uttarakhand

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Abstract: A study to assess the effectiveness Bio psychosocial intervention on Depression and Coping strategy among head and neck cancer patients undergoing Radiotherapy in selected cancer research institute of Dehradun Uttarakhand. **Purpose of the study:** To assess the level of depression and coping strategies among head and neck cancer patients and evaluate the effectiveness of Bio psychosocial intervention and to find the correlation between the level of depression with the level of coping strategies among study participants. **Methodology:** Quantitative research approach was adopted; total 35 participants were selected through purposive sampling technique. Data was collected by administering Socio- demographic performa, Goldberg depression rating scale, Likert scale on coping strategies. The data was analyzed by using descriptive and inferential statistics. **Results:** This study showed that Bio-psychosocial intervention significantly reduce the level of depression mean score from baseline to 21st day of radiotherapy i, e7.66 to 4.0 at p<0.01 as measured by Goldberg depression rating scale .The results showed that coping strategies mean score was increasing from pre interventions to the third week of post interventions, e26.34 to 39.17atp<0.01which means that Bio-psychosocial intervention was effective in improving the level of coping strategies of participants, there was a weak negative non-significant correlation between level of depression with level of coping strategy tested at 0.05 level of significance. **Conclusion:** The study concluded that the participants had depression at different stages of Radiotherapy and for which Bio-psychosocial intervention was given to the participants. Bio-psychosocial intervention improved the Coping strategies and reduce the level of depression significantly after three weeks of intervention.

Keyword: Bio-Psychosocial Intervention, Depression, Coping strategy

1. Introduction

The term cancer was first described by the father of medicine Hippocrates a Greek physician and was first detected by British surgeon Percival Plot in 1775 .Cancer is generally defined as the uncontrolled proliferation of the normal cells that invade to the other part of the body and cause dysfunctioning.

According to NICPR report in 2018 major leading cause of death in India is cancer and death rate is increasing gradually it is estimated nearly eight lack and around 2.25 million people living with cancer and every year this count increase approximately to 12 lack in India'

There are not much evidence which support the importance of Psychological intervention for cancer patients therefore researcher selected this area for study. Lack of literature

related to any specific type of Bio-psychosocial intervention on patients with cancer of head and neck region

2. Material and Methods

AQuasi experimental time series design was implemented with purposive sampling technique in this study. Study was done on newly diagnosed head and neck cancer patients of CRI SRHU Uttarakhand. Total sample was 35 .The data was collected through Goldberg Depression rating scale self-structured questionnaire to assess the level of depression and coping strategy among head and neck cancer patients and demographic detail was obtained through baseline data. Psycho education on Bio psychosocial intervention was given to the study participants after assessing the pretest level of depression and coping strategy. Posttest was taken on 7th, 14th and 21st day of Radiotherapy

3. Findings

Table 1: Frequency and Percentage distribution of personal characteristics of the study participants

Variables	Subject characteristics	Frequency (f)	Percentage (%)
Age	25-45yr	20	57%
	45-65yr	15	43%
Gender	Male	22	63%
	Female	13	37%
Marital status	Married	31	88%
	Unmarried	4	12%
Educational Status	Primary	6	17%
	Secondary	13	37%
	Graduation	16	46%
Occupation	Employed	23	65.7%
	Unemployed	12	34.3%
Type of family	Nuclear	10	28.5%
	Joint	25	71.5%
Area of Residence	Rural	12	34.4%
	Urban	13	37.1%
	Semi-Urban	10	28.5%
Monthly Income	Less than 15, 000	9	25.7%
	15, 000 – 25, 000	14	40%
	More than 25, 000	12	34.3%
Duration	Less than 6 month	20	57.1%
	6.1 to 12 month	15	42.9%

Present study shows that out of 35 sample majority 57% of the participants were in age group of 25-45 years, 62.8 % were male, 88% were married. Majority of the study participant were graduate i, e 46%, 65.7% were employed and most of 71.5% of study participants were residing in

joint family. Most of study participants were from urban area i, e 37.1%. Family income of majority (40%) of study participants was between 15, 000 to 25, 000Rs, majority (42.9%) of study participant’s duration of illness was between 6.1 to 12 months.

Table 2: Mean and standard deviation of depression level of head and neck cancer patients undergoing radiotherapy

S.no	Variable	Pretest	Post-test 1	Post-test 2	Post test3	f*	p value
		Baseline	7 th Day	14 th Day	21 st Day		
		Mean ± SD	Mean ± SD	Mean ±SD	Mean ±SD		
1	Depression Score	7.66±0.72	5.80±0.63	4.89±0.63	4.0±0.48	179.6	0.001**

Anxiety, Depression Maximum Score =9

f*-Repeated measures ANOVA

Table 2 shows that mean depression score decreases from baseline 7.66±0.72 to 5.80±0.63 on 7th Day, further decreased on 14th Day i, e 4.89±0.63 and on 21st Day 4.0±0.48. Repeated measure ANOVA was used to calculate

difference within the group .Which was significant with f =179.6 at p<0.001

Therefore it could be inferred that Bio-psychosocial intervention was beneficial in decreasing the depression level of study participants.

Table 3: Frequency and percentage distribution of head and neck cancer patients undergoing radiotherapy according to depression level

S.No	Variables	Pretest		Post-test 1		Post-test 2		Post-test3	
		Baseline		7 th day		14 th day		21 st day	
		F	%	f	%	F	%	F	%
1	Depression Level	35	100%	35	100%	35	100%	35	100%
	Depression score>2	-	-	-	-	-	-	-	-
	Depression Score<2	-	-	-	-	-	-	-	-

Depression Maximum Score =9

Depression score >2 =50% chance of important clinical disturbance.

Table 3 shows that at the baseline, 7th Day, 14th Day and 21st Day all the subjects (100%) were having depression score >2, showing that there was no reduction in depression score from the baseline.

Table 4: Effectiveness of Bio-psychosocial intervention on coping strategy of head and neck cancer patients undergoing radiotherapy, N=35

S.No	Variable	Pretest	Post-test 1	Post-test 2	Post test3	f *	p value
		Baseline	7 th Day	14 th Day	21 st Day		
		Mean ±SD	Mean ± SD	Mean ± SD	Mean ± SD		
1	Overall Coping strategy	26.34±1.8	32.77±1.7	37.37±1.59	39.17±1.59	569.8	0.001**

Table No 4 shows that mean coping strategy score increased from baseline **26.34±1.8** to **32.77±1.7**, on 7th Day and further increased on 14th Day to **37.37±1.59** and on 21st Day coping strategy score was **39.17±1.59**. Repeated measure ANOVA was used to calculate difference within the group which was significant with $f = 569.8$ at $p < 0.001$

Therefore it could be inferred that Bio-psychosocial intervention was effective in improving coping strategy level of patients with head and neck cancer. Therefore researcher rejected the null hypothesis and accepted the alternative hypothesis.

Table 5: Correlation between depression Score and coping strategy score of head and neck cancer patient undergoing radiotherapy, N=35

Variable	r Value	p value
Level of Depression (21 st Day)	-0.19	0.49
Level of coping strategy (21 st Day)		

Table No 6 Shows non significant weak negative correlation between depression level and coping strategy in patients. Concluded that as coping strategy increase level of Depression decreased but not significantly. Therefore researcher accepted the null hypothesis and rejected the research hypothesis

4. Discussion

Regarding level of depression in head and neck cancer patients

Present study results showed that all the research participants had 50% chance of important clinical disturbances in terms of depression at the baseline and there was no reduction in the level of depression score on 21st day of radiotherapy, but statically it was found that the mean score of depression reduced to 7.66 to 4.0 from the baseline to the 21st day of radiotherapy.

The similar finding were supported by **Wu Y S, Lin P Y, Chien C Y, Fang F M et al** A pattern of depression observed in participants with the prevalence rate from 8.5% at baseline to 24.5% and further reduced to 14% at three and six month respectively.¹⁸

Result were further supported by **Mazumder K, Sarkar SK, Ray S, Mukherjee A. (2012)** result revealed that after diagnosed with cancer 68.89% of patient were significantly depressed at level of significance $p < .05$ level of depression after completion of six weeks of treatment significantly at $p < .05$ depends upon the type of response to the treatment.¹⁵

Effectiveness of Bio-psychosocial intervention on level of depression and coping strategies in head and neck cancer patients

In present study result showed that the mean depression score decreased from baseline 7.66 ± 0.72 to 4.0 ± 0.48 on 21st day of radiotherapy which was statically significant. Therefore it could be inferred that intervention was effective in reducing level of depression and improvement in coping strategies.

Result were supported by study conducted by **Kangas M, Milross C, Taylor A, Bryant RA. 2018** result found that intervention like cognitive behavior therapy and Supportive counseling found to be effective in decreasing Post traumatic stress disorder (PTSD) and anxiety symptoms in both short and long term. Result also revealed that early establishment of psychological intervention has capability in decreasing symptoms of PTSD, Anxiety and depression and preventing psychopathological distress in patients.²⁷

Result were further supported by study carried out **Cherith C J, Dunwoody L, Kemohan W G, McCaughen Ein 2008** to find out the evaluation and development of problem-focused psychosocial intervention .The result revealed that there was significant reduction ($p < .05$) in psychological problems like depression and significant improvement ($p < .05$) in social issues and quality of life score for the experimental group of study participants.²⁵

5. Conclusion

Depression are more common in head and neck cancer patients receiving radiotherapy and their coping skills are poor during the course of radiotherapy thus Bio-psychosocial intervention is required to reduce the level of depression and improving coping strategies.

6. Ethical Consideration

Administrative agreement was attained from principal Himalayan College of Nursing, SRHU. The ethical permission was taken from the ethical committee of SRHU than written consent of the participants was taken before doing the collection of data.

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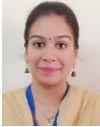
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