

A Quasi-Experimental Study to Evaluate the Effectiveness of Chromotherapy on the Levels of Anxiety and Depression Among the Cancer Patients Admitted in Hospitals at Selected Areas

Ms. Harshada Kishor Joshi¹, Prof. Shivaprasad Halemani², Prof. Suchita Sawant³,
Prof. Milind Kale⁴

¹Tutor, Bombay Hospital College of Nursing, Mumbai, Maharashtra, India

²Mental Health Nursing, M.E.S. College of Nursing, Ratnagiri, Maharashtra, India

³Bombay Hospital College of Nursing, Mumbai, Maharashtra, India

⁴M.E.S. College of Nursing, Ratnagiri, Maharashtra, India.

Abstract— Aim: The aim of the study was a quasi-experimental study to evaluate the effectiveness of chromotherapy on the levels of anxiety and depression among the cancer patients admitted in hospitals at selected areas. **Materials & Method:** Quasi experimental research design was used for this study in which control was missed and randomization was present. The independent variable in this was chromotherapy. The study was conducted at selected hospitals, Maharashtra after obtaining ethical permission. Sample includes 40 mild and moderate levels of cancer patients admitted in hospitals those were selected by tool used Hamilton rating scale for anxiety and Hamilton rating scale for depression with considering inclusion criteria with probability simple random sampling technique. **Result:** Effectiveness of chromotherapy compared pre-test anxiety score and depression with post-test score anxiety and depression which shows result that the mean score during pre-test anxiety score is 18.6 ± 2.487 , and the mean score during post-test anxiety is 14.9 ± 2 . The paired t test value is 22.81 which is significantly higher than the table value of 2.02 at $p \leq 0.05$ level. Also mean score during pre-test depression score is 13.6 ± 3.08 , and the mean score during post-test depression is 10.2 ± 2.613 . The paired t test value is 11.0 which is significantly higher than the table value of 2.02 at $p \leq 0.05$ level. **Conclusion:** The study was conducted to evaluate effectiveness of chromotherapy on the levels of anxiety and depression among cancer patients admitted in hospital at selected areas. The study findings showed chromotherapy was effective in reducing levels of anxiety and depression among cancer patients. There was significant association age with pre-test anxiety score and depression. This study intervention would help to restore the emotional balance of the cancer patients and increase their quality of life.

Keywords— Anxiety, Depression, Cancer, Chromotherapy.

I. INTRODUCTION

Cancer develops when normal cells are transformed into tumor cells in a multi-stage process that usually evolves from a pre-cancerous lesion to a malignant tumor. According to a report released by the World Health Organization (WHO) and its specialized International Agency for Research on Cancer (IARC) in 2018, India's population of 1.35 billion people experienced 1.6 million new cancer cases, 784,800 cancer deaths, and 2.26 million 5-year prevalent cases in 2018.¹

The treatment for cancer begins with surgery, chemotherapy, and radiation, all of which have an impact on the physical, mental, social, and spiritual well-being of the patient. Fear, distortion of self-image, low self-esteem, false self-perception, hair loss (secondary to chemotherapy), social isolation, communication and relationship problems with family members or friends are all side effects of cancer treatment that can lead to the development of "cancer stigma" among women. In addition, the patient may have discomfort, insomnia, anxiety, despondency, worry, and depression in the future.

Colors have the potential to have a strong influence on our feelings and perceptions. The visible spectrum, or color light,

is used in chromotherapy to treat physical, mental, and spiritual energy imbalances that can lead to disease. This is one of the most holistic and straightforward approaches for curing sickness. Each color charges our cells and provides us with a specific quantity of energy that manifests as creativity, motivation, enjoyment, or energy that calms our body, relieves worry and tension, and allows us to get a good night's sleep.^{2,3}

II. MATERIALS AND METHOD

Quasi experimental research design was used for this study in which control was missed and randomization was present. The independent variable in this was chromotherapy. The study was conducted at selected hospitals, Maharashtra after obtaining ethical permission. Sample includes 40 mild and moderate levels of cancer patients admitted in hospitals those were selected by tool used Hamilton rating scale for anxiety and Hamilton rating scale for depression with considering inclusion criteria with probability simple random sampling technique. Chromotherapy administer 20 minutes 2 session daily for 14 days followed post-test.

III. RESULT

Data was analyzed using descriptive and inferential statistics. SPSS was used to analyze the data.

TABLE 1: Distribution of samples according to their pre-test and post-test levels of anxiety among cancer patients.

Anxiety levels	Scores	Pre-test		Post-test	
		Frequency	Percentage (%)	Frequency	Percentage (%)
Mild	17 or less	15	37.5	35	87.5
Moderate	18 to 24	25	62.5	5	12.5

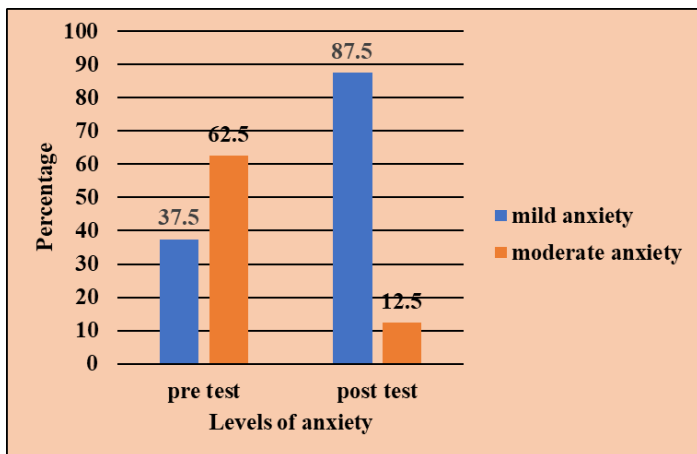


Figure.1: Distribution of samples according to their pre-test and post-test levels of anxiety among cancer patients.

The above table 1, figure 1 shows that during pre-test majority that was 25 (62.5%) samples in moderate levels of anxiety and 15 (37.5) samples were in mild levels of anxiety while in post-test 35 (87.5%) samples were in mild levels of anxiety and 5 (12.5%) in moderate levels of anxiety.

Table.2: Distribution of samples according to their pre-test and post-test levels of depression among cancer patients.

Depression levels	Scores	Pre-test		Post-test	
		Frequency	Percentage (%)	Frequency	Percentage (%)
Not depressed	0-7	-	-	5	12.5
Mild	8-13	18	45	30	75
Moderate	14-18	22	55	5	12.5

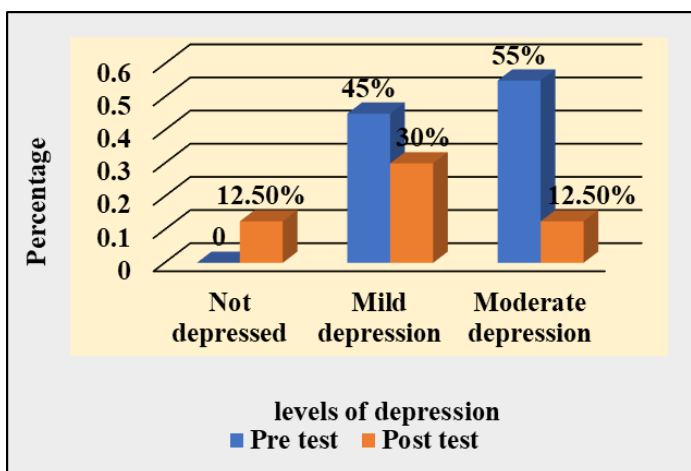


Figure.2: Distribution of samples according to their pre-test and post-test levels of anxiety among cancer patients.

The above table 2, figure 2 shows that during pre-test majority that was 22 (55%) samples in moderate levels of depression and 18 (45%) samples were in mild levels of depression while in post-test 30 (75%) samples were in mild levels of anxiety and 5 (12.5%) in moderate levels of anxiety and 5 (12.5%) samples were not depressed.

Effectiveness of chromotherapy on the levels of anxiety and depression among the cancer patients.

TABLE 3: Comparison of pre-test and post-test levels of anxiety and depression with paired "t" test.

Aspects	Pre-test		Post-test		Calculate 't' value	Df	Table 't' value
	Mean	SD	Mean	SD			
Anxiety	18.6	2.487	14.9	2	22.81	39	2.02
Depression	13.6	3.08	10.2	2.613	11.0		At P=0.05

The above table 3 shows that the mean score during pre-test anxiety was 18.6 ± 2.487 , and the mean score during post-test anxiety is 14.9 ± 2 . The paired 't' test value for anxiety was 22.81 which was significantly higher than the table value of 2.02 at $P=0.05$ level. Also mean score during pretest depression is 13.6 ± 3.0 and the mean score during posttest depression was 10.2 ± 2.613 . The paired 't' value for depression is 11.0 which was significantly higher than table value of 2.02 at $p \leq 0.05$ level.

TABLE 4: Association between the pre-test anxiety score with selected sociodemographic variables

Sr.no	Demographic variables	Frequency	Levels of Anxiety		Chi square
			Median (≤ 18) N= 24	Median (>18) N= 16	
1.	Age (in years)				
	A. 21-30	2	0	2	11.362 df = 4 P = 0.023 Significant
	B. 31-40	6	3	3	
	C. 41-50	9	4	5	
	D. 51-60	9	4	5	
	E. 61-70	14	13	1	

TABLE 5: Association between the pre-test depression score with selected sociodemographic variables.

Sr.no	Demographic variables	Frequency	Levels of Anxiety		Chi square
			Median (≤ 15) N= 26	Median (>15) N=14	
1.	Age (in years)				
	A. 21-30	2	0	2	13.696 df = 4 P = 0.008 Significant
	B. 31-40	6	3	3	
	C. 41-50	9	3	6	
	D. 51-60	9	7	2	
	E. 61-70	14	13	1	

Table 4: It indicates that there was a significant association between the anxiety score and the selected socio-demographic variable such as age.

Table 5: It indicates that there was a significant association between the depression score and the selected socio-demographic variable such as age

IV. DISCUSSION

This study was done to determine the effectiveness of chemotherapy on the levels of anxiety and depression among cancer patients admitted in hospitals at selected areas.

The first objective of study was to assess the pretest levels of anxiety among cancer patients. To complete this objective there was taken pre-test by using Hamilton rating scale for anxiety with structured interview technique, which shows result that was 15(37.5%) sample are in mild level of anxiety and 25(62.5%) samples were in moderate levels of anxiety. Also mean score pre-test anxiety was 18.6 ± 2.487 , and the mean score during post-test anxiety was 14.9 ± 2 .

For supporting this result Study done at the King Hussein Cancer Center in Amman, Jordan with the purpose Depression and Anxiety in Patients with Cancer. The prevalence of depressive and anxious symptomatology among all patients was 23.4 percent and 19.9 percent, respectively.⁴

The second objective of this study was to assess the pretest levels of depression among cancer patients. To complete this objective there was taken pre-test by using Hamilton rating scale for depression with structured interview technique, which shows result that was 18(45%) sample are in mild level depression and 22(55%) sample are in moderate level of depression.

For supporting this result Data on the anxiety and depression of Tibetan and Han cancer patients was collected using questionnaires, included the Zung Self-Rating Anxiety Scale, Zung Self-Rating Depression Scale, and a general information questionnaire. According to the data, Tibetan cancer patients had 53% depression and 37.4% anxiety, while Han cancer patients had 23.5% and 16% depression and anxiety, respectively.⁵

The third objective of the study was to assess effectiveness of chemotherapy on the levels of anxiety and depression. To complete this objective chemotherapy was implement and after that post-test was taken by using same scale with structured interview to assess posttest levels of anxiety and depression, which shows result that was for posttest of anxiety 35(87.5%) samples are in mild depression and 5(12.5%) are in moderate level of depression as well as posttest of depression shows results was 35(87.5%) are in mild level of depression and 5(12.5%) are in moderate level of depression.

For supporting finding study done in Christian College of Nursing in Neyyoor, Kanyakumari, Tamil Nadu, India, on the effect of chemotherapy on the level of depression among head and neck cancer patients in a selected hospital in the Kanyakumari district of Tamil Nadu. Study result shown that depression had a t value of 21.36, which was significant at the 0.05 level. The study's findings demonstrated that chemotherapy was beneficial in lowering depression in patients with head and neck cancer.⁶

The fourth objective of the study was to find out association between pretest levels of anxiety with selected demographic variables among cancer patients. The results indicates that there was a significant association between the levels of anxiety and the selected socio-demographic variable

such as age. For supporting result finding research taken Study conducted on prevalence and correlates of psychological distress among cancer patients in a tertiary care hospital in northern India. The outcomes are displayed as an estimated 39% of cancer patients experienced psychological distress (anxiety, depression, or both). Psychological discomfort was shown to be more common in Age (those who were older).⁷

The fifth objective of the study was to find out association between pretest levels of depression with selected demographic variables among cancer patients. Result shows there was a significant association between the levels of depression and the selected socio-demographic variable such as age.

A cross-sectional study was carried out with the goal of determining the prevalence of pain, exhaustion, anxiety, and depression in relation to demographic and clinical parameters was taken to support result finding. The outcomes are displayed that cancer patients reported modest levels of pain, weariness, anxiety, and sadness. Study also discovered a clear link between anxiety and depression. Anxiety and depression were shown to be substantially higher in women than in men and increased pain levels were linked to higher levels of weariness and anxiety.⁸

V. CONCLUSION

The study was quasi experimental study to evaluate effectiveness of chemotherapy on the levels of anxiety and depression among the cancer patients admitted in hospitals at selected areas. The study findings showed that chemotherapy was effective in reducing levels of anxiety and depression. There was significant association found between pretest levels of anxiety with selected demographic variables as well as pretest levels of depression with selected demographic variables. This study intervention would help the cancer patient to reduce anxiety and depression and run healthy life without any worries and tension, also help to the others friend's family members who suffering from cancer to reduce their levels of anxiety and depression.

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