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Instrumental Music on Anxiety among Patients Receiving Radiation Therapy

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Abstract

The objectives of the study were to assess the level of anxiety of patients receiving radiation therapy using State Anxiety Inventory, determine the effectiveness of instrumental music on anxiety among patients of experimental group and find out the association between level of anxiety and selected demographic and clinical variables. Wiedenbach's helping art of clinical nursing theory helped the researcher in the development of the conceptual framework. This quasi experimental study with a pretest- posttest control group design and purposive sampling technique was conducted on 40 patients receiving radiation therapy in a selected hospital at Calicut. A structured questionnaire on demographic and clinical profile and State Anxiety Inventory was used to assess the level of anxiety among the sample. The findings of the study revealed that 80% of subjects from both the experimental and control group were having moderate level of anxiety. There was a significant reduction in the level of anxiety among the experimental group after instrumental music intervention (p=0.001). There was a significant difference in the post test level of anxiety among the experimental group than the control group (p=0.001). The level of anxiety had no significant association with socio demographic variables.

Keywords: Instrumental music; Anxiety; Patients receiving radiation therapy; State; Anxiety Inventory.

INTRODUCTION

An estimated 14.1 million adults in the world were diagnosed with cancer in 2012, with incidence rates varying across the world. By 2030, the global burden is expected to grow to 21.4 million new cancer cases and 13.2 million cancer deaths simply due to the growth and aging of the population, as well as reductions in childhood mortality and deaths from infectious diseases in developing countries. An individual's risk of developing cancer depends on many factors, including age, life style and genetic make-up.

In India, around 5,55,000 people died of cancer in 2010. Total number of cases are likely to go up to 11,48,575 by the year 2020. The lifetime risk of developing any type of cancer is 44% for men and 38% for women. Cancer rates in India were lower than western countries, but are rising with increasing migration of rural population to the cities, increase in life expectancy & changing life styles.

Non-pharmacologic interventions are important adjuncts to treatment modalities for patients with cancer pain and anxiety. A variety of modalities can

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be used to reduce concomitant mood disturbance and increase quality of life.

According to American society of Clinical Oncology, up to 30% of people with cancer experience anxiety. The affecting pain of cancer, undergoing treatment, the systemic physical and psychological changes and possibility of facing death, may provoke an inevitable anxiety response in the individuals. Nurses face many challenges as they care for the needs of hospitalized patients, and they often have to prioritize physical care over the patient's emotional, spiritual, and psychological needs. Meeting these additional needs is a challenge.

Music therapy can become a universal practice due to its low cost, ease of administration, minimal to no risk of harmful side effects and potential to improve the hospital experience for patient. Music can be used as a self-management technique to reduce or control distress. The potential for music to reduce anxiety, alleviate pain and improve patient satisfaction may have an impact in today's healthcare environment. Anxiety and stress reducing effects of music is that it acts as a distractor, focusing the patient's attention away from negative stimuli to some thing pleasant and encouraging.

MATERIALS AND METHODS

The research approach adopted in this study is quantitative in nature. Quasi experimental research design in the present study involves the manipulation of the independent variable (instrumental music) to observe the effect on dependent variable (anxiety), with a control group but it lacks randomization. The setting of the present study was the radiation therapy department of MIMS Oncology centre, MIMS Hospital, Calicut. In the present study the sample consisted of 40 Patients receiving the radiation therapy fraction for the first week, who met the sampling criteria. The sampling technique was purposive sampling. Lottery method was used to randomly allocate the subjects to experimental group and control group. Ethical clearance was obtained after submitting the proposal on the prescribed format to the Institutional Review Board (IRB) of MIMS Hospital Calicut. Tools used for the investigation consisted of a questionnaire to collect the demographic and the clinical data, State Anxiety Inventory (SAI) to assess the level anxiety of patients receiving radiation therapy.

RESULTS

80% of patients receiving RT (both the experimental and control group) were having the moderate level of anxiety. There was a significant difference in the level of anxiety after listening the instrumental music among patients of experimental group ($p<0.001$). Level of anxiety had significant association between the demographic variable, type of family ($p<0.040$).

Fig. 1 exhibits that 80% of subjects from both the experimental and control group have moderate level of anxiety.

In order to identify the effectiveness of

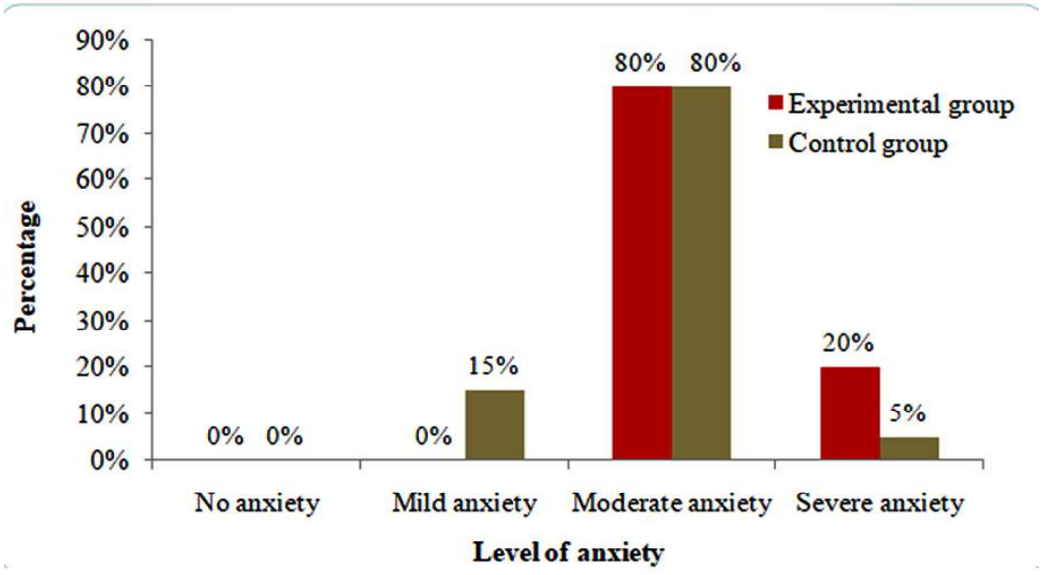

Fig 1: distribution of sample based on the level of anxiety of patients receiving radiation therapy

instrumental music on anxiety, the pretest and post test anxiety among the patients of experimental group were checked. A hypothesis was stated and paired t test was applied to test the significance.

The data presented in table 1 shows that there was a significant difference in the level of anxiety among the experimental group after music intervention.

Group	Variable	N	Mean	SD	pvalue
Experimental Group	Pre test Anxiety	20	54.60	5.879	<0.001*
	Post test Anxiety	20	36.70	4.041	

DISCUSSION

In the present study 40 patients were assessed for the effectiveness of instrumental music on anxiety during radiation therapy. The first objective of the present study was to assess the level of anxiety of patients receiving radiation therapy using State Anxiety Inventory. The results showed that 80% of subjects from both the experimental and control group were having the moderate level of anxiety. This is consistent with the findings of a study by Anderse B, Karlsson J, Anderson B, Tewfik H on Anxiety and cancer treatment: Response to stressful radiotherapy in 2006. Gynecologic patients with cancer receiving their first internal radiotherapy therapy were studied. As the time for treatment neared, subjective and physiologic indicants of anxiety and distress among the patients significantly increased (P=0.004) and till 24 hours post-treatment, anxiety for all patients remained elevated.

Most of the patients receiving radiation therapy have moderate level of anxiety. The study proved that instrumental music is effective in reducing the level of anxiety among patients receiving radiation therapy. It can be used in various settings due to its low cost, ease of administration and no harmful side effects, to reduce the level of anxiety of patients.

A randomized control study was conducted by Bally K, Campbell D, Chesnick and Tranmer J on the effects of Patient Controlled Music Therapy during Coronary Angiography on Procedural Pain and Anxiety Distress Syndrome in 2003. Anxiety and pain were measured at baseline and after the procedure, just before removal of the arterial sheath. Results found no difference between groups in anxiety after the procedure. Patients reported moderate levels of state anxiety before the procedure. Patient controlled music therapy had no significant effect on state anxiety, pain intensity, heart rate, or blood pressure. The above study is consistent with the finding of the present study, that 80% of subjects from both the experimental and control group were having the moderate level of anxiety. But it contradicts the finding that instrumental music significantly reduced the level of anxiety among patients receiving radiation therapy

The second objective of the present study was to determine the effectiveness of instrumental music on anxiety among patients receiving radiation therapy. Results showed that instrumental music was significant in reducing the level of anxiety among patients receiving radiation therapy. The findings are consistent with the findings of the following studies reviewed by the investigator. A study was conducted by Judith Ferrer on the Effect of Live Music on decreasing anxiety among patients undergoing chemotherapy. Results of the study showed statistically significant improvement for the experimental group on the measures of anxiety, fear, fatigue, relaxation, and diastolic blood pressure.

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