

Original Research Article

Effect of Jacobson's Progressive Muscle Relaxation Exercise on Anxiety among Children Diagnosed with Leukemia Admitted in Selected Hospital of Cuttack

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ABSTRACT

An quasi experimental study aimed to evaluate the effect of Jacobson's progressive muscle relaxation exercise on anxiety among children diagnosed with leukemia admitted in selected hospital of Cuttack, was conducted with the objective to assess the level of anxiety among leukemia diagnosed children, to assess the effect of Jacobson's progressive muscle relaxation exercise on anxiety and to determine the association between the level of anxiety with selected demographic variable. The tools used are self structured socio-demographic tool and Hamilton's Anxiety rating scale. Total 40 numbers of children participated in the study which was selected by purposive sampling. In experimental group (65%) had moderate anxiety in pre test & in post test (90%) had mild anxiety whereas, in control group in pre test (75%) had moderate anxiety & in post test (85%) had moderate anxiety. In control group the calculated paired 't' test value was 4.39 and p value was < 0.0001. And in experimental group the calculated paired 't' test value was 11.87 and p value was < 0.00001. The finding of the study revealed that Jacobson's progressive muscle relaxation exercise is effective in reducing anxiety.

Key word: Jacobson's progressive muscle relaxation exercise, anxiety, leukemia patients.

INTRODUCTION

Leukemia is a malignancy with disseminated proliferation of immature or blast cells of the bone marrow, which replace the normal marrow elements and tend to accumulate in various tissues of the body. Leukemia was first identified by researchers, Virchow and Bennet in the year 1845. [1,2]

Anxiety is an ordinary emotion. All people use it as a technique of safety from danger and threat when we understand hazard. Human body undergoes number of autonomic physiological modifications which consist of perspiration, restlessness, pain, palpitation and tightness inside the chest. [3]

Jacobson's progressive relaxation technique includes contracting and relaxing

the muscles to make you feel calmer. Relaxation technique may be beneficial in handling different health problems, including anxiety related to ailments. Applicability of relaxation therapy in psychologically disturbed people it is well understood that relaxation therapy or cognitive behavior therapy plus relaxation are powerful remedy methods in reducing anxiety disorders. [4]

Rebecca L. Siegel et. al in 2016 prepared a report on incidence of leukemia, mortality and survival rate and their report shows that total 60,140 number of new case of leukemia was diagnosed in 2016 among them 34,090 were male and 26,050 were female. Among all new cases of cancer leukemia comprised of 4%. [5]

In blood cancer the area affected were bone marrow, lymphatic system, blood cells and the lymph nodes. Leukemia is the most common cancer among children, which includes approximately 30% of all childhood malignancies, and four out of every 100,000 kids beneath the age of 15 grow to be leukemic. [6]

Acute lymphoblastic leukemia (ALL) is the most common sort of most cancers in kids, comprising 25% of malignancies diagnosed earlier than age 15 years and 19% diagnosed earlier than age of 20 years. Its peak incidence is between the age group of 2 to 5 years old. [7]

Linda F. Brown, M.S. on 2009 conducted a study on Cancer-Related Fatigue and Its associations With Depression and Anxiety. In this study sample size is 12,103. This study found that anxiety was correlated with fatigue. The range of correlation coefficients was 0.16 to 0.73. [8]

A significant number of children who have completed treatment for acute lymphoblastic leukemia (ALL) may be experiencing anxiety, A significantly greater percentage of children who completed treatment for ALL showed symptoms of emotional distress compared with the general population. In the general population, the frequency of at-risk or clinically significant anxiety and depression is about 15%. The researchers found that the rates of anxiety seemed to decrease from 1 month from diagnosis to 12 months from diagnosis, but increased again at the 3 months post-treatment time point. The rates of depression were fairly consistent across all of the time points examined in the study. Children who had higher anxiety scores at the 1-month post-diagnosis time point in the study were four times more likely to have elevated anxiety scores at the 3 month follow-up. [9]

Jacobson's Progressive Muscle Relaxation Technique is effective in reducing the social anxiety. The progressive muscle relaxation group had the greatest decline in somatic anxiety. so it may be

helpful in reducing anxiety among leukemia diagnosed children. [10]

The symptoms of anxiety are a significant problem in the immediate post diagnosis period. While anxiety symptoms lessen after the first month of therapy, they also found that we can identify children at one month after diagnosis who are substantially more likely to have worse psychological functioning as manifested by anxiety throughout the first year of therapy. These findings provide for a compelling rationale to screen children with SR-ALL for psychological problems soon after diagnosis and to develop early interventions to target anxiety symptoms. [11]

By doing review of literature on different topics the investigator found that children diagnosed with leukaemia experience varying degree of anxiety because of hospitalization, treatment procedure and long term illness etc. And different studies proves that Jacobson's progressive muscle relaxation exercise is effective in reducing anxiety in various kinds of patients like, social anxiety among adolescence, anxiety among cancer patients, anxiety among people living with HIV and elderly etc.

MATERIALS AND METHODS

Experimental research approach is considered to assess the effect of Jacobson's progressive muscle relaxation exercise on anxiety among children diagnosed with leukemia admitted in a selected hospital of Cuttack.

The design of the present study is Quasi experimental non randomized control group design.

The setting for main study was SCB medical college and hospital, Cuttack. Total 40 numbers of leukemia patients were participated in this study. And Selection of participants was done by Non-probability purposive sampling technique.

Participants of the study were all leukemia children admitted in hematology ward of S.C.B Medical College & Hospital, Cuttack, Odisha.

They were given the demographic questionnaire and assessed for their socio demographic data.

The inclusion criteria for the study participants were (i) The children, age group of 10-16 years. (ii) Children who were willing to participate in the study. (iii) Children, who were available at the time of data collection. (iv) children, who were able to communicate in Odia, English or Hindi.

Hamilton anxiety scale was used to assess anxiety level among participants.

The brain gym exercise was given for 7 days for 15-20 minutes. Time of doing exercise was 9.00am to 9.20am.

Participants were co-operative and interested about performing exercises and researcher did not find any difficulty in conducting exercise among participants.

RESULTS

SECTION –A Distribution of samples according to socio demographic variables using frequency and percentage.

Table-1 frequency and percentage distribution of children according to age, sex, educational qualification, duration of hospital stay in experimental (n₁=20) and control (n₂=20) group. N= n₁ (20)+n₂(20)=40

Variables	Experimental		Control	
	Frequency	Percentage	Frequency	Percentage
Age in years				
10-11 years	3	15	7	35
12-13years	7	35	7	35
14-16 years	10	50	6	30
Sex				
Male	14	70	14	70
Female	6	30	6	30
Educational qualification				
Illiterate	3	15	2	10
Primary	7	35	12	60
Secondary	10	50	4	20
Higher secondary	0	0	2	10
Duration of hospital stay				
<1 week	15	75	18	90
8-14 days	5	25	2	10
>15 days	0	0	0	0
Duration of illness				
<1month	0	0	0	0
1-6 month	2	10	1	5
7-12month	7	35	10	50
>1year	11	55	9	45
Attended any anxiety reduction class/ counseling session				
Yes	0	0	0	0
No	20	100	20	100

SECTION –B: Pre and post test score of the anxiety level among children in experimental and control group using percentage distribution through graphical presentation.

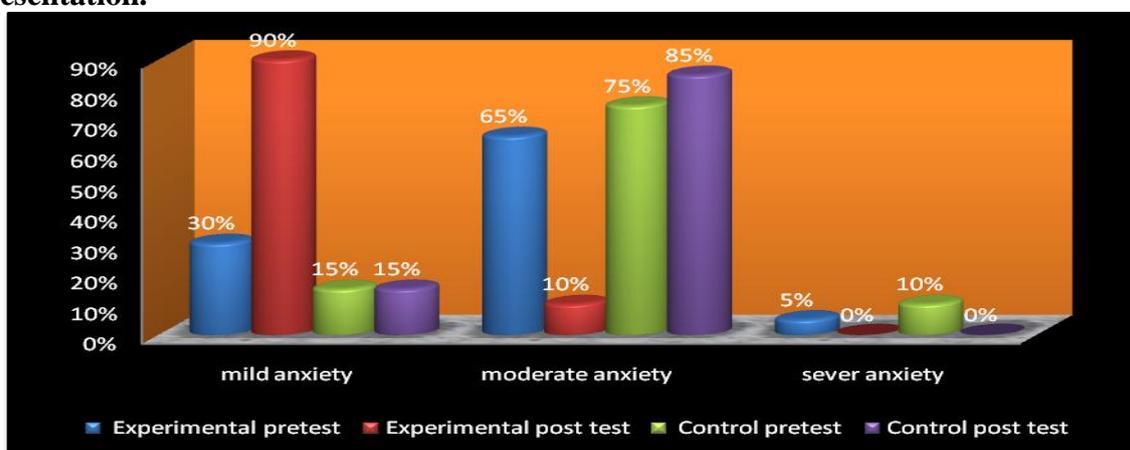


Fig: 1. Bar diagram showing pre-test and post test score of anxiety level in both the groups using percentage distribution. n= 20

SECTION- C

Determine the effect of Jacobson's progressive muscle relaxation exercise on anxiety level in both group using 't' test.

Table.2- Pre test and post test score on level of anxiety in experimental group using paired 't' test. $n_1 = 20$

Item	Mean difference	SD	Paired 't' test	Df	P value
Anxiety	5.2	1.96	11.87	19	.00001***

$P \leq 0.05$

Table.3- pre test and post test score of anxiety level in control group by using paired 't' test. $n_2 = 20$

Item	Mean difference	SD	Paired 't' test	Df	P value
Anxiety	1.1	1.11	4.39	19	0.0001*

$P \leq 0.05$

Table.4-Post test scores of experimental and control group for anxiety level by using unpaired 't' test.

$n_1 + n_2 = 40$						
Item	Group	Mean	SD	Unpaired 't' test	Df	P value
Anxiety	Experimental	14.7	1.809333	7.7071	38	0.0001**
	control	19.65	2.230766			

$P \leq 0.05$

DISCUSSION

The present study revealed that in experimental group in pre test 30% were having mild anxiety, 65% were having moderate anxiety and 5% were having severe anxiety and in control group in pre test 15% were having mild anxiety, 75% were having moderate anxiety and 10% were having severe anxiety.

Findings of this study are supported by V Prathipa where modified Spence Anxiety rating scale was used to assess the anxiety level in children. The study findings showed 93.3% children had severe anxiety, 6.7% had moderate anxiety and nobody had mild anxiety. Which indicated hospitalized children experience anxiety. [12]

The present study revealed that there was statistically significant difference between the pre-test and post test score of anxiety level among children diagnosed with leukaemia at 0.05 level of significance in both control group and experimental group.

Findings of this study are contradictory to the findings of Andreas Acharalambous et al who studied the effectiveness of Progressive Muscle Relaxation and Guided Imagery as Anxiety Reducing Interventions in Breast and Prostate Cancer Patients Undergoing Chemotherapy. The intervention group demonstrated a decrease in its mean anxiety score from baseline after the intervention

while the control group demonstrated an increase in its mean anxiety score. [13]

Similarly findings of this study is contradictory to the findings of Febu Elizabeth Joy et al conducted a study on effectiveness of Jacobson's progressive muscle Relaxation (JPMR) technique on social anxiety among High school adolescents. The study found 27% adolescents were having moderate social anxiety. The Jacobson's progressive muscle relaxation technique was found to be effective in reducing social anxiety. [10]

CONCLUSION

The present study shows the effectiveness of Jacobson's progressive muscle relaxation exercise on anxiety level in leukemia diagnosed children.

The conclusion was drawn from the study stating that through Jacobson's progressive muscle relaxation exercise was effective in reducing anxiety.

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How to cite this article: Giri A, Tanaya K. Effect of Jacobson's progressive muscle relaxation exercise on anxiety among children diagnosed with leukemia admitted in selected hospital of Cuttack. *Int J Health Sci Res*. 2019; 9(2):151-155.
