

A Study to Evaluate the Effectiveness of Clay Therapy in Reducing the Level of Anxiety among Hospitalized Children at the Age Group of 6-12 Years at Selected Hospitals, in Bhopal

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ABSTRACT

Background: Nurses play a critical role in helping the child and family cope effectively with hospitalization. Play is an essential part of a child's life and is an important aspect in fostering growth and development. **Objectives:** The aim of this study was to evaluate the effectiveness of Clay therapy on anxiety among hospitalized preschool children in paediatric medical ward. **Methodology:** In this study a True experimental, pre-test –post-test control group design was adopted. Simple random sampling technique was used to select 60 hospitalized preschool children. Pre-test was conducted by hospital observed behaviour check list on the first day after obtaining consent from all the subjects then clay therapy was given 30 minutes once a day for 7 Consecutive days (total 7 sessions) for the subjects. Posttest was assessed on 7th day using the same tool. **Results:** **Conclusion:** The study concluded that clay therapy is cost effective, non-invasive, non-pharmacological complementary and alternative therapy to reduce the level of anxiety among children.

KEYWORDS: *Clay therapy, Anxiety, Hospitalization, Preschool Children*

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INTRODUCTION:

Hospitalization is stressful for children of all ages. During a serious illness, children have a great need for their parents and can tolerate their absence only for short periods. They need to know that their parents will be there when they need them most and that they are loved and missed. **Play has been recognised as important since the time of Plato (429-347BC).** Play is essential part of child and is important aspect in fostering growth and development. Toys are the tool of play. Play is synonymous with being a child and it is universal language of child. Children involved in the work of play do not require expensive toys and gadgets to keep them entertained but often enjoy playing with common household items such as broom handle, boxes, clay materials, drawing book etc.

Play helps in the sensory motor and intellectual development. It also improves socialization and self-awareness. Creativity is developed through play. Play also has therapeutic and moral value. Therapeutic play provides diversion and brings relaxation, feels more secure in a strange environment, lessens stress and provides a means of release tension.

Edwards, (2000) stated that, children are in a constant process of development; in cognitive, physical, and emotional domains. The experience of illness or injury, hospitalisation and treatment impact and intertwines with this process for each child.

In the current scenario, clay therapy act as a version of play therapy is employed as a therapeutic tool. Clay therapy is an adjunct to play therapy. Researcher

use clay as a therapeutic tool has been effective for children in improving their problem-solving skills, cognitive development, self-esteem enhancement, decision making process, control of impulses, and anger. Clay therapy reduces children's fear and anxiety because it holds their interest, provides a wide array of connection by establishing an immediate problem-solving environment which complement the ongoing treatment plan and also fun. Therapist teaches children about some models made by clay.

As in traditional nondirective play therapy, research has shown that allowing an individual to freely play with the sand and accompanying objects in the contained space of the sand tray (22.5" x 28.5") can facilitate a healing process as the unconscious expresses itself in the sand and influences the sand player. When a client creates in the sand tray, little instruction is provided and the therapist offers little or no talk during the process. This protocol emphasizes the importance of holding what Kalff (1980) referred to as the "free and protected space" to allow the unconscious to express itself in symbolic, non-verbal play. Upon completion of a tray, the client may or may not choose to talk about his or her creation, and the therapist, without the use of directives and without touching the sand tray, may offer supportive response that does not include interpretation. The rationale is that the therapist trusts and respects the process by allowing the images in the tray to exert their influence without interference. Sand tray therapy can be used during family therapy. The limitations presented by the boundaries of the sand tray can serve as physical and symbolic limitations to families in which boundary distinctions are an issue. Also when a family works together on a sand tray, the therapist may make several observations, such as unhealthy alliances, who works with who, which objects are selected to be incorporated into the sand tray, and who chooses which objects. A therapist may assess these choices and intervene in an effort to guide the formation of healthier relationships.

According to the report of New York University of child study centre, mental health problems may originate as early as in the preschool years. One in 10 children aged 2-5 years found to be experiencing anxiety. In that 9.5% have in the form of separation anxiety, social anxiety, specific fears, and generalised anxiety.

More over these severe and chronic conditions also have the potential to significantly cause impairment in academic, emotional, and social development. Thus as the understanding of these disorders has evolved, the need to recognize and effectively treat these anxiety has become more salient. Clay therapy

is one of the important methods of prevention of anxiety disorder among pre-schoolers.

NEED OF THE STUDY: 40 % of India's population are below the age of 14 years. According to 2013 census. The national centre for health statistics estimates that 3.5 million children under the age of 15 are hospitalized each year. Pre-school-aged children are particularly vulnerable to the effects of stress and fear during hospitalization. Children cope with their fears through problem-oriented, emotion-oriented, and function-oriented coping strategies. Even pre-school-aged children can express their emotions and expectations quite well orally.

In present scenario anxiety disorders are most common form of psychopathology in preschool children with overall prevalence rate of 8-10%. Mental health professional believes that the majority of mental health problems in adult are rooted in childhood generally before the 8 years.

In another epidemiological study conducted by Manchanda and Manchanda, a total of 19 children (up to 12 years) from the Paediatric inpatient and Child Guidance Clinic (CGC) were diagnosed to be suffering from a neurotic disorder during a period of 11 months. Incidence of neuroses was 1.1% among paediatric inpatients and 8.2% in CGC. The incidence was higher in the females. 73.5% of children were in the age range of 10-12 years. None of them were below six years. Hysteria was the commonest diagnostic group (71.4%) in the present study. Therefore, it is likely that the findings observed for neurotic disorders in general, are more characteristic of hysteria. Other disorders in order of frequency were anxiety (16.3%) depression (6.1%) and phobia (4.1%). Obsessive compulsive neurosis was observed in one case only.

PROBLEM STATEMENT:

A study to assess the effectiveness of clay therapy on anxiety among hospitalized preschool children at paediatric medical ward in selected hospital Bhopal.

OBJECTIVES:

- To assess the level of anxiety among hospitalized preschool children in experimental group and control group.
- To assess the effectiveness of clay therapy among hospitalized preschool children in experimental group.
- To compare the level of anxiety among hospitalized preschool children in experimental group and control group.
- To associate the level of anxiety among hospitalized preschool children with selected socio-demographic variables in experimental group and control group.

HYPOTHESIS:

H1: There is a significant difference between the level of anxiety among hospitalized preschool children in experimental group before and after clay therapy.

H2: there is a significant difference between the post-test level of anxiety among hospitalized preschool children in experimental group and control group.

H3: There is a significant association in the level of anxiety among hospitalized preschool children with the selected socio-demographic variables in experimental group and control group.

OPERATIONAL DEFINITIONS:

Effectiveness: In this study it refers to reduction in anxiety symptom scores of preschool children as measured by hospital observed behaviour checklist on children’s anxiety.

Clay therapy: In this study, it refers to a form of supervised play therapy in which researcher teaches the preschool children about making different clay models like human models, animal models, and cartoon models.

Level of Anxiety: In this study, anxiety refers to separation, gaze behaviour, loss of control, bodily injury, co-operation among hospitalized preschool children as measured by hospital observed behaviour checklist on children’s anxiety.

Hospitalised preschool children: In this study, it refers to admission of children between the age of 3-6 years in Paediatric Medical Ward, selected hospital Bhopal.

Paediatric medical ward: In this study, it refers to the place where the children are admitted for diagnostic procedures and treatment in selected hospital Bhopal.

MATERIAL AND METHODS:

Research approach: quantitative research approach

Research design: True experimental design – pre-test post-test control group design

Variables:

Independent variables: Clay Therapy

Dependent variables: Anxiety of the hospitalized children.

Research setting:

The study was conducted Paediatric medical Ward at selected hospital Bhopal.

Population:

Target Population- hospitalized preschool children.

Accessible population – Preschool children admitted in the medical ward at selected hospital Bhopal.

Sample: Hospitalised children.

Sample size: 60.

Sample techniques:

Simple Random sampling (lottery method) technique was used for the present study.

Criteria for sample selection:

Inclusion criteria:

- Children in the age group of 3 to 6 years.
- Children who are admitted in medical ward irrespective of any illness.
- Children who can understand and able to speak Tamil.

Exclusion criteria:

- Children who are blind, mentally, and physically challenged.
- Children those who are admitted for only observation.
- Children who are having skin allergy.
- Children who critically ill and unconscious.

Tool and method of data collection:

DESCRIPTION OF THE TOOL

Data collection tools consists of two following sections:

Section – I Demographic variables.

Section – II Hospital observed behaviour check list on children’s anxiety

SECTION I

Demographic variables

Consists of questions to elicit demographic data such as age, gender of the child, birth order, religion, family type, residence, income, educational status of the father, education of the mother, education of the child, dietary pattern.

SECTION II

Hospital observed behaviour check list on children’s anxiety:

A hospital observed behaviour checklist was prepared consisting of 50 items were given score of 1,2,3,4 & 5, for each behaviour.

SCORING PROCEDURE

The scoring system is divided into following categories

01 to 50	–	No Anxiety
51 to 100	–	Mild anxiety
101 to 150	–	Moderate Anxiety
151 to 200	–	Severe
201 to 250	–	Profound Anxiety

The scoring of each item of hospital observed behaviour checklist as follows;

ITEMS	ITEMS
Strongly disagree	1
Undecided	2
Disagree	3
Agree	4
Strongly agree	5

This instrument consists of 50 items. Maximum score for each item is 5. So the total obtained score is 250. Decrease of score denotes more coping abilities of pre-schoolers towards hospitalization.

Reliability of tool: The reliability of the tool was assessed by test-retest method reliability value is 0.85. This correlation coefficient is very high and it is a good tool for assessing the effectiveness of clay therapy in reducing the level of anxiety hospitalized preschool children at Paediatric medical ward in selected hospital Bhopal.

Data collection procedure:-

- After obtaining the formal permission from the Head of the Department child Health Nursing and Principal College of Nursing, also obtain the Permission from The Director, Department of Paediatrics, selected hospital Bhopal.
- The investigator explained the purpose of the study and informed written consent is obtained from each subject. Collection of demographic data among the mother of a children and, their anxiety level is assessed by using hospital observed behaviour checklist on anxiety.
- On the first day of admission in paediatric medical ward, the mothers/ caregivers of children were approached and the consent was obtained after fully explaining the procedure of the study and the rights of the clients.
- Based on the criteria for sample selection the subjects were selected using purposive sampling method.
- 12 samples were selected for each week of study. Pre-test was done to evaluate the level of anxiety

using Hospital observed behaviour checklist on children’s anxiety, after the ward rounds the clay therapy was provided to experimental group for 30 minutes once in a day.

- The same intervention was given for a period of 7 consecutive days. The post-test assessment was conducted for both groups using the same assessment scale on the seventh day of the study. The same sample selection procedure and intervention was adapted to the further four groups. The data collection period was 6 weeks and data were collected on all 7 days of the week.

Ethical consideration:

This study was conducted after the approval from the ethical committee Madurai Medical College, Madurai. All respondents were carefully informed about the purpose of the study and their part during the study and how the privacy was guarded. Ensured confidentiality of the study result. Thus, the investigator followed the ethical guidelines which were issued by the research committee. Written permission was obtained from all participants.

Plan for data analysis:

The plan for data analysis includes-

- Collected data were analysed by using descriptive and inferential statistics.
- The data related to demographic variables were analysed by using descriptive measures (frequency, percentage distribution).
- Inferential statistics of t- test was used to evaluate the effectiveness of Clay therapy.
- Paired ‘t’ test for comparison of pre assessment and post assessment of experimental group
- Unpaired ‘t’ test for comparison of post-test between control and experimental group to assess the effectiveness of clay of therapy
- Chi square test is to associate the demographic variables with post-test of both groups

RESULTS:

DISTRIBUTION DEMOGRAPHIC PROFILES OF THE HOSPITALIZED PRESCHOOL CHILDREN

Table 1: distribution of frequency and percentage wise distribution of demographic data of Hospitalized preschool children n=60

Demographic data	Control group		Experimental group	
	f	%	f	%
1.Age of the child (in years):				
a) 3-4 years	10	33.3	10	33.3
b) 4-5 years	13	43.3	9	30
c) 5-6 years	7	23.3	11	36.7
d) >6 years	0	0	0	0
2.Gender of the child:				
a) Male	14	46.7	15	50
b) Female	16	53.3	15	50

3.Birth order:				
a) First	11	36.7	11	36.7
b) Second	13	43.3	14	46.7
c) Third	5	16.7	4	13.3
d) > third	1	3.3	1	3.3
4.Religion :				
a) Hindu	28	93.3	27	90
b) Muslim	2	6.7	3	10
c) Christian	0	0	0	0
d) Others	0	0	0	0
5.Family type :				
a) Nuclear	18	60	18	60
b) Joint	12	40	11	36.7
c) Extended	0	0	0	0
d) Separated	0	0	1	3.3
6.Residence :				
a) Rural	16	53.3	10	33.3
b) Remote village	3	10	7	23.3
c) Urban	11	36.7	12	40
d) Semi urban	0	0	1	3.3
7.Income :				
a) <Rs.2000	8	26.7	0	0
b) Rs.2000-4000	17	56.7	14	46.7
c) Rs.4000-6000	4	13.3	13	43.3
d) >Rs.6000	1	3.3	3	10
8.Educational status of father :				
a) Non-literate	6	20	6	20
b) Primary	13	43.3	8	26.7
c) Secondary	8	26.7	11	36.7
d) Higher secondary and above	3	10	5	16.7
9.Educational status of mother:				
a) Non-literate	7	23.3	4	13.3
b) Primary	7	23.3	10	33.3
c) Secondary	14	46.7	15	50
d) Higher secondary and above	2	6.7	1	3.3
10.Education of child:				
a) No formal education	5	16.7	1	3.3
b) L.K.G	4	13.3	10	33.3
c) U.K.G	11	36.7	5	16.7
d) 1ST STD	10	33.3	14	46.7
11.Dietary pattern:				
a) Vegetarian	2	6.7	3	10
b) Non –vegetarian	28	93.3	27	90

Table 1 reveals that the demographic information of children those who were participated in the study.

In considering the **age** in control group, 33.3% (10) of children were belongs to 3-4 years of age, 43.3% (13) were in 4-5 years, and remaining 23.3% (7) were in 5-6 years of age. In experimental group, 33.3% (10) of children were in 3-4 years of age, 30% (9) were in 4-5 years, 36.7% (11) were in 5-6 years of age.

While considering **Gender** wise distribution in control group, majority 53.3% (16) of children were female and 46.7% (14) of male children. In experimental group, 50% (15) children were female and 50% (15) of children were male.

Based on **Birth order** wise distribution in control group, 36.7% (11) of children were in first child, 43.3% (13) of children were in second child, 16.7% (5) of children were in third child and 3.3% (1) of children were in four and above child. In experimental group, 36.7% (11) were in first child, 46.7% (14) were in second child, 13.3% (4) were in third child and 3.3% (1) were in four and above child.

Regarding **Religion** wise distribution in control group, 93.3% (28) of children from Hindu, 6.7% (2) of children from Muslim. Majority of children were from Hindu religion. In experimental group 90% (27) of children from Hindu, 10% (3) of children from Muslim.

With view of the **Type of family** wise distribution in control group, 60% (18) of children were from nuclear family and 40% (12) of children were from joint family. In experimental group 60% (18) of children from nuclear family, 36.7% (11) of children were joint family, and 3.3% (1) of children were from separated family.

Regarding **Residence** wise distribution in control group, 53.3% (16) of children were from rural area, 10% (3) of children were from remote village, 36.7% (11) of children were from urban area and 0% (0) of children were from semi urban area. In experimental group, 33.3% (10) of children were from rural area, 23.3% (7) of children were from remote village, 40% (12) of children were from urban area and 3.3% (1) of children were from semi urban area.

With regarding **Income** in control group, 26.7% (8) of children were from less than 2000, 56.7% (17) of children were from 2000-4000, 13.3% (4) of children were from 4000-6000, and 3.3% (1) of children were from > 6000. In experimental group 46.7% (14) of children were from 2000-4000, 43.3% (13) of children were from 4000-6000, and 10% (3) of children were from > 6000.

Considering **Father's education** wise distribution in control group, 20% (6) of fathers were having no formal education, 43.3% (13) of fathers were having primary education, 26.7% (8) of fathers were having secondary education and 10% (3) of fathers were having higher and above education. In experimental group 20% (6) of fathers were having no formal education, 26.7% (8) of father were having primary education, 36.7% (11) of fathers were having secondary education, 16.7% (5) of fathers were having higher and above education.

On the view of **Mother's education** wise distribution in control group, 23.3% (7) of mothers were having no formal education, 23.3% (7) of mothers were having primary education, 46.7% (14) of mothers were having secondary education and 6.7% (2) of mothers were having higher and above education. In experimental group, 13.3% (4) of mothers were having no formal education, 33.3% (10) of the mothers were having primary education, 50 % (15) of the mothers were having secondary education, 3.3% (1) Of children were having higher and above education.

Regard the **Standard of studying** wise distribution in control group, 16.7% (5) were not going school, 13.3% (4) were studying l.k.g, 36.7% (11) were studying u.k.g and 33.3% (10) were studying 1st std. In experimental group 3.3% (1) were not going school, 33.3% (10) were studying l.k.g, 16.7% (5) were studying u.k.g and 46.7% (14) were studying 1st std.

Considering **Dietary pattern**, in control group 6.7% (2) of children were from vegetarian, and 93.3% (28) of children were from non-vegetarian. In experimental group 10% (3) of children were from vegetarian, 90% (27) of children were from non-vegetarian.

EFFECTIVENESS OF CLAY THERAPY ON ANXIETY AMONG HOSPITALIZED PRESCHOOL CHILDREN

Table 2: distribution of mean, SD and mean percentage of control pre and post-test level assess anxiety among hospitalized preschool children

Variables	Max score	Control Group -Pre test			Control Group -post test			Mean Difference%
		Mean	SD	Mean %	Mean	SD	Mean %	
Level of Anxiety	250	139	40.45	56	138.73	40.49	55	1

Table 2 represents the mean and SD value of pre-test anxiety level in control group mean =139, SD=40.5 and post-test level in control group mean =138.73, SD=40.49 and the difference in mean is 1%.

Table 3- Distribution of mean, SD and mean percentage of experimental pre and post test level anxiety among hospitalized preschool children.

Variables	Max score	Control Group -Pre test			Control Group -post test			Mean Difference%
		Mean	SD	Mean %	Mean	SD	Mean %	
Level of Anxiety	250	148.47	34.44	59	93.9	34.58	38	21

Table 3- The above table shows mean, standard deviation and mean percentage of clay therapy on anxiety among hospitalized preschool children in paediatric medical ward in experimental group. The post test score anxiety means (93.9) is lesser than the pretest score anxiety (148.47) mean. The difference in mean percentage on anxiety is 21.

Table 4-Distribution of mean, SD and mean percentage of experimental post and control post scores of anxiety among hospitalized preschool children

Variables	Max score	Control Group post test			Control Group -post test			Mean Difference%
		Mean	SD	Mean%	Mean	SD	Mean%	
Level of Anxiety	250	138.73	40.49	55	93.9	34.58	38	17

The above table shows the comparison of post -test anxiety score between experimental and control group. The experimental group post-test anxiety mean 93.9 and S.D 34.58 is lesser than the control group post-test anxiety mean 138.73 and S.D 40.49.

Table 5- Frequency and percentage of anxiety among hospitalized preschool children in control group and experimental group.

Level of anxiety	Control group				Experimental Group			
	Pre test		Post test		Pre test		Post test	
	f	%	F	%	f	%	f	%
Normal	-	-	-	-	-	-	4	13.3
Mild	9	30	9	30	4	13.3	13	43.3
Moderate	8	26.7	8	26.7	12	40	13	43.3
Severe	13	43.3	13	43.3	14	46.7	-	-
Extreme	-	-	-	-	-	-	-	-
Total	30	100	30	100	30	100	30	100

Table 5-The above table shows the frequency and percentage distribution level of anxiety among hospitalized preschool children in paediatric medical ward. In the control group during pretest, 30% had mild level of anxiety, 26.7% had moderate level of anxiety and 43.3% had severe level of anxiety. In the post test, 30% had mild level of anxiety, 26.7% had moderate level of anxiety and 43.3% had severe level of anxiety. In experimental group before intervention 13.3% had mild level of anxiety, 40% had moderate level of anxiety and the remaining 46.7% had severe level of anxiety. In the post test, 13.3% had no anxiety, 43.3% had mild level of anxiety and the remaining 43.3% had moderate level of anxiety.

Table 6-Paired t-test for control pre and control post-test to assess the effectiveness of clay therapy on anxiety among hospitalized preschool children

Variables	Control group Pre test		Control group post test		Mean difference	't'-value	P-value
	Mean	SD	Mean	SD			
Level of Anxiety	139	40.45	138.73	40.49	0.27	1.55	0.133

Table 6-The above table shows the anxiety among hospitalized preschool children by using paired “t”-test. The obtained t-value between control pre and control post-test is 1.55 at p-value 0.133 level of significance.

Table 7- Paired t-test for experimental pre and experimental post-test to assess the effectiveness of clay therapy on anxiety among hospitalized preschool children.

Variables	Experimental group Pre test		Experimental group post test		Mean difference	't'-value	P-value
	Mean	SD	Mean	SD			
Level of Anxiety	148.47	34.44	93.9	34.58	54.57	20.84	0.000***

Table 7-The above table shows the effectiveness of clay therapy on anxiety among hospitalized preschool children by using paired “t”-test. The obtained t-value between experimental pre and experimental post-test is 20.84 at p-value 0.000 level of significance.

DESCRIPTION OF THE POST TEST LEVEL OF ANXIETY AMONG HOSPITALIZED PRESCHOOL CHILDREN

Table 8-Unpaired t-test for control post and experimental post-test to assess the effectiveness of clay therapy on anxiety among hospitalized preschool children

Variables	Control group Pre test		Control group post test		Mean difference	't'-value	P-value
	Mean	SD	Mean	SD			
Level of Anxiety	138.73	40.49	93.9	34.58	44.83	4.61	0.000***

(*** P<0.001 highly significant)

The above table shows the effectiveness of clay therapy on anxiety among by using un-paired “t”-test. The obtained t-value between experimental and control group anxiety is 4.61 at p-value 0.000 level of significance.

ASSOCIATION BETWEEN THE LEVEL OF ANXIETY AMONG HOSPITALIZED PRESCHOOL CHILDREN AND THEIR SELECTED DEMOGRAPHIC VARIABLES

Table 9- Post test level of anxiety among hospitalized preschool children (control group) and their selected socio demographic data

n =60

	Mild		Moderate		Severe		χ^2 -value	p- value
	f	%	f	%	f	%		
1.Age of the child (in years):								
a) 3-4 years	2	6.7	2	6.7	6	20	8.53 (df=4)	0.074
b) 4-5 years	2	6.7	5	16.7	6	20		
c) 5-6 years	5	16.7	1	3.3	1	3.3		
d) >6 years	0	0	0	0	0	0		
2.Gender of the child								
a) Male	4	13.3	3	10	7	23.3	0.56 (df=2)	0.757
b) Female	5	16.7	5	16.7	6	20		
3.Birth order:								
a) First	2	6.7	2	6.7	7	23.3	7.708 (df=6)	0.260
b) Second	6	20	3	10	4	13.3		
c) Third	1	3.3	3	10	1	3.3		
d) > third	0	0	0	0	1	3.3		
4.Religion :								
a) Hindu	8	26.7	7	23.3	13	43.3	1.65 (df=2)	0.438
b) Muslim	1	3.3	1	3.3	0	0		
c) Christian	0	0	0	0	0	0		
d) Others	0	0	0	0	0	0		
5.Family type :								
a) Nuclear	5	16.7	4	13.3	9	30	0.87 (df=2)	0.648
b) Joint	4	13.3	4	13.3	4	13.3		
c) Extended	0	0	0	0	0	0		
d) Separated	0	0	0	0	0	0		
6.Residence :								
a) Rural	3	10	5	16.7	8	26.7	3.68 (df=4)	0.450
b) Remote village	1	3.3	0	0	2	6.7		
c) Urban	5	16.7	3	10	3	10		
d) Semi urban	0	0	0	0	0	0		
7.Income :								
a) <Rs.2000	2	6.7	1	3.3	5	16.7	8.90 (df=6)	0.179
b) Rs.2000-4000	4	13.3	6	20	7	23.7		
c) Rs.4000-6000	3	10	0	0	1	3.3		
d) >Rs.6000	0	0	1	3.3	0	0		
8.Educational status of father :								
a) Non-literate	3	10	0	0	3	10	4.42 (df=6)	0.619
b) Primary	4	13.3	4	13.3	5	16.7		
c) Secondary	2	6.7	3	10	3	10		
d) Higher secondary and above	0	0	1	3.3	2	6.7		
9.Educational status of mother:								
a) Non-literate	2	6.7	2	6.7	3	10	3.004 (df=6)	0.808
b) Primary	2	6.7	2	6.7	3	10		
c) Secondary	5	16.7	4	13.3	5	16.7		
d) Higher secondary and above	0	0	0	0	2	6.7		

10.Education of child:									
a)	No formal education	2	6.7	1	3.3	2	6.7		
b)	L.K.G	0	0	1	3.3	3	10	3.46	0.750
c)	U.K.G	3	10	4	13.3	4	13.3	(df=6)	
d)	1 ST STD	4	13.3	2	6.7	4	13.3		
11.Dietary pattern:									
a)	Vegetarian	9	0	1	3.3	1	3.3	1.102	0.576
b)	Non –vegetarian		30	7	23.3	12	40	(df=2)	

(*-P<0.05, significant and **-P<0.01 & ***-P<0.001, Highly significant)

Above table shows that, In control group no significant association had been found out between the demographic variables of children and the level of anxiety among hospitalized preschool children belong to post test. there is no association between the level of anxiety among hospitalized children and other demographic variables in control group.

Table No.10- Post test level of anxiety among hospitalized preschool children (experimental group) and selected demographic variables

Demographic variables		n =60						χ ² -value	p-value
		Normal		Mild		Moderate			
		F	%	f	%	F	%		
1.Age of the child (in years):									
a)	3-4 years	2	6.7	3	10	5	16.7		
b)	4-5 years	1	3.3	3	10	5	16.7	3.25	0.517
c)	5-6 years	1	3.3	7	23.3	3	10	(df=4)	
d)	>6 years	0	0	0	0	0	0		
2.Gender of the child									
a)	Male	2	6.7	7	23.3	6	20	0.15	0.926
b)	Female	2	6.7	6	20	7	23.3	(df=2)	
3.Birth order:									
a)	First	0	0	2	6.7	9	30		
b)	Second	2	6.7	8	26.7	4	13.3	15.27	0.018*
c)	Third	2	6.7	2	6.7	0	0	(df=6)	
d)	> third	0	0	1	3.3	0	0		
4.Religion :									
a)	Hindu	3	10	12	40	12	40		
b)	Muslim	1	3.3	1	3.3	1	3.3	1.15	0.562
c)	Christian	0	0	0	0	0	0	(df=2)	
d)	Others	0	0	0	0	0	0		
5.Family type :									
a)	Nuclear	2	6.7	9	30	7	23.3		
b)	Joint	2	6.7	4	13.3	5	16.7	1.97	0.741
c)	Extended	0	0	0	0	1	3.3	(df=4)	
d)	Separated	0	0	0	0	0	0		
6.Residence :									
a)	Rural	1	3.3	4	13.3	5	16.7		
b)	Remote village	2	6.7	4	13.3	1	3.3	4.76	0.574
c)	Urban	1	3.3	5	16.7	6	20	(df=6)	
d)	Semi urban	0	0	0	0	1	3.3		
7.Income :									
a)	<Rs.2000	0	0	0	0	0	0		
b)	Rs.2000-4000	2	6.7	6	20	6	20	0.99	0.911
c)	Rs.4000-6000	2	6.7	5	16.7	6	20	(df=4)	
d)	>Rs.6000	0	0	2	6.7	1	3.3		

8.Educational status of father :								
a) Non-literate	0	0	5	16.7	1	3.3		
b) Primary	1	3.3	3	10	4	13.3	8.36	0.213
c) Secondary	2	6.7	5	16.7	4	13.3	(df=6)	
d) Higher secondary and above	1	3.3	0	0	4	13.3		
9.Educational status of mother:								
a) Non-literate	0	0	3	10	1	3.3		
b) Primary	1	3.3	4	13.3	5	16.7	3.86	0.695
c) Secondary	3	10	6	20	6	20	(df=6)	
d) Higher secondary and above	0	0	0	0	1	3.3		
10.Education of child:								
a) No formal education	1	3.3	0	0	0	0		
b) L.K.G	2	6.7	2	6.7	6	20	13.25	0.045*
c) U.K.G	0	0	2	6.7	3	10	(df=6)	
d) 1 ST STD	1	3.3	9	30	4	13.3		
11.Dietary pattern:								
a) Vegetarian	0	0	0	0	3	10	4.36	
b) Non –vegetarian	4	13.3	13	43.3	10	33.3	(df=2)	0.113

(*-P<0.05, significant and **-P<0.01 & ***-P<0.001, Highly significant)

Above table shows that, In experimental group significant association had been found out in birth order and standard of studying demographic variables of children. there is no significant association between the level of anxiety among hospitalized children and other demographic variables in experimental group.

DISCUSSION:

The objective of the study is to assess the effectiveness of clay therapy among hospitalized preschool children in experimental group.

In experimental group the post test score anxiety means (93.9) is lesser than the pretest score anxiety (148.47) mean. The difference in mean percentage on anxiety is 21. The obtained t-value between experimental pre and experimental post test is 20.84 at 0.000 level of significance.

The above results showed that there was a statistically significant reduction between the pretest and post test score of anxiety among hospitalized preschool children in experimental group. This shows that the difference in the score was due to the intervention (clay therapy) and also this proves that the clay therapy was effective in reducing the anxiety among hospitalized preschool children.

Mo hammadreza Abedi (2014) the study conducted to determine the effect of paint therapy and clay therapy on separation anxiety disorder symptoms in pre-school children as well as to compare the two mentioned therapies. The research methodology was individually done and child anxiety symptoms were studied by CSI-4 questionnaire. Research testers were six children with separation anxiety disorder randomly selected from those who visited Golestan Zendegi and Saf clinics in Isfahan through using a diagnostic interview and children's separation anxiety scale. The six children were divided in to three groups of two: painting therapy; clay therapy as well as

control group who received no treatment. Followed by three baseline sessions, intervention stages were initiated and conducted in eight sessions. Research findings showed that according to data visual analysis based on descriptive statistics and visual analysis paint therapy and clay therapy were effective in reducing separation anxiety disorder symptoms in intervention step as compared to baseline (P<0.5); in addition, there was no significant difference between the two mentioned treatments (P<0.5). However, there was seen a difference between experimental and control groups. The research results show the effectiveness of paint therapy and clay therapy on reducing separation anxiety disorder.

Hence, H1: There is a significant difference between the level of anxiety among hospitalized preschool children in experimental group before and after clay therapy, which is accepted.

The objective is to compare the level of anxiety among hospitalized preschool children in control and experimental group.

In control group post test, 30% had mild level of anxiety, 26.7% had moderate level of anxiety and 43.3% had severe level of anxiety. In experimental group the post test, 13.3% had no anxiety, 43.3% had mild level of anxiety and the remaining 43.3% had moderate level of anxiety.

Comparison of post -test anxiety score between experimental and control group, the experimental group post test anxiety mean (93.9) is lesser than the

control group post test anxiety mean (138.73). In unpaired “t”-test, the obtained t-value between post test experimental and control group anxiety is 4.61 at 0.000 level of significance.

parisa rahmai (2010) Data was collected from thirty six year old children with the objective to examine the effectiveness of clay therapy on reducing anxiety in them. For examining children's anxiety CSI-4 test developed by Gadow & Sprafkin, (1994) was employed which was answered by parents of children. Data was subjected to one- way analysis of variance. It showed significant difference on anxiety scores among groups ($F = 74.2, p < 0.01$). Scheffe test was employed to analyze pairs of means to see if there is a difference, which showed significant difference on anxiety of control group in post-test comparing with clay group and narrative group. No significant difference was found among clay group and narrative group respectively

Hence, H2: There is a significant difference between the post test level of anxiety among hospitalized preschool children in experimental group and control group. which is accepted.

The objective is to associate the level of anxiety among hospitalized preschool children with the selected socio-demographic variables in experimental group and control group.

This study findings revealed that the children had clay therapy, there was a significant association between demographic variables (birth order $\chi^2 = 15.27$ (df=6) $p = 0.018^*$, and standard of studying 13.25 (df=6) 0.045^*) and the post level of anxiety in experimental group.

All other variables were not significantly associated with post level of anxiety in experimental group.

CONCLUSION

The results of this study revealed that the children who received clay therapy during hospitalization had a statistically significant reduction in anxiety. Clay therapy is demonstrated to be effective in reducing the anxiety of hospitalized preschool children. Clay therapy is highly recommended because it is effective, easy to carry out and inexpensive.

Recommendations:

- A similar study can be conducted in a larger sample.
- Similar study can be conducted among different age groups and for mentally challenged patients in different settings.
- A comparison study with drawing and clay, or clay and storytelling, clay and music, clay and dance, can be done to determine the effect of these art therapy in the level of anxiety.
- Same study can be conducted to assess the anxiety level of pre operative children.
- The study can be done to compare the effects of clay therapy for anxiety and cancer pain children.

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