

# The Effectiveness of Play Therapy Intervention Program on Physiological Parameters and Behavioral Distress of Children undergoing Echocardiography Examination

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## Abstract

**Objective:** To assess of the effectiveness of Play Therapy Intervention Program on Physiological Parameters and Behavioral Distress of Children undergoing Echocardiography Examination. after the interventional program (pre-test and post-test) approach at Al-khansa'a Hospital in Mosul City.

**Method and Material:** Quantitative research, " a quasi-experimental design" The study was using pre-test and post-test approach for study group and control group, Prior to beginning data collecting, the study group's participants underwent testing (5 June 2022 - 23rd of December 2022). The number of sample was (60). children were randomly allocated to two groups: (experimental group) the TV group watched cartoons with sound during the examination, some other toys according to the stages of the age (age groups) and the (control group) received usual care.

**Results:** The findings of the study show increase improvement in all physiological parameters except no significant oxygen saturation at the values were significant at  $P < 0.05$  levels and The findings of the study show increase improvement in all The total assessment of Behavioral scale distress about children during echocardiography examination in the experimental group shows that they Behavioral scale distress during the posttest time ( $6.083M \pm SD = 23.7000 \pm 7.01796$ ) Significant for experimental group & improvement compared with control group on the level of Behavioral Distress .

**Conclusions:** The results of the study demonstrated that play therapy boosted improvement in all physiological measures, with the exception of no significant oxygen saturation at the values were significant at  $P < 0.05$  levels and shows that they Behavioral scale distress during the post-test time Significant for experimental group & improvement compared with control group on the level of Behavioral Distress.

**Keywords:** Play therapy, Physiological Parameters, Behavioural distress, Echocardiography Examination.

## Introduction:

Play therapy is one of effective communication and successful joint establishment of meaning wherein patients and health care providers exchange information, enabling patients to participate actively in their care from admission through discharge, and ensuring that the responsibilities of both patients and providers are understood.[1] Physiological Parameters are one of the main problems for this procedure, and interventions like sedative medication have been used to facilitate its performance [2]. Cartoon distraction directs concentration to other and takes the attention away from own pain and concentrate on concern for someone else, more positive thoughts and distract with other sensations i.e. cartoon distraction has the ability

to jog emotions and break the connection between a person and his/her emotional pain [3]

Furthermore, one of the studies that make it one researchers at Stanford University discovered that the reduction of time spend in front of video games and television to 7 hours per week, can lead to reduce verbal violence by 50% and reduce bodily violence by 40% in third and fourth class. The positive effect of electronic games: Give sensation for performance, increase educational and perceptive Ability, and Develop the ability to plan and deal with a complex situation. And negative effect: spending a long time in front of games lead to, School delay, Children playing aggressive electronic games appear in their behavior the declination to aggressive behavior in the real life,

Family problems because of a decrease the communication between child and family, Effect on child's language, Increase weight with other related health problems because of decrease in activity and movement [4]. The aims of play therapy include helping children and young people to modify their behaviors, build healthy relationships, and clarify their self-concept. In play therapy, the relationship between a child and a therapist is regarded as paramount in helping to explore, express and make sense of complex and distressing experiences [5]. play is very often used to convey interventions to improve children's abilities other than play, such as cognitive abilities, social or emotional competence, language skills, etc.: if this is the case, then the professional activities and interventions are play-based.[6]

Furthermore, Play therapy is the practice by which therapists use a theoretical model, wherein the therapeutic powers of play are used to help clients prevent or resolve psychosocial difficulties and achieve optimal growth and development [7]. Children remember the pain and may avoid future medical care because of painful experiences in a hospital or clinic and can cause numerous physiological problems such as dilated pupils, sweating, increased heart rate, increased blood pressure, and skin rash, which if it is not controlled timely can cause chronic problems even death. Distraction has been used successfully as an intervention to decrease children's pain during painful procedures [8] .Play assessment is meant to evaluate play abilities, preferences, type of play, etc.; play-based assessment relies on play to measure children's cognitive, emotional, social, or affective competencies Play or play-based assessment is a task of professionals in several fields: psychology, occupational therapy, mainstream, and special education, speech and language therapy, rehabilitation, child psychiatry, research, etc. Many of the tools that are available have

been developed in the occupational therapy, psychology, and psychiatry fields and can be used by different practitioners [9] Play therapy and conventional physiotherapy both were equally effective in reducing pain and anxiety in postsurgical children [10].

#### Method and Materials:

A quasi-experimental design is used in quantitative research. Children were randomly assigned to two groups: case and control, and they underwent testing before data collection began (5 June 2022 - 23 December 2022). carried out in the echocardiography department of Al-khansa'a Teaching Hospital in the Iraqi city of Mosul.

Procedure and tool for data collection

##### 1. Description of intervention:

The intervention provided by the researcher was play therapy along with parental comfort such as hugging, pacifying, patting, etc. for the experimental group. The children were engaged to play with a therapeutic play through the planned interventional program (An examination room was prepared with a TV on the wall, giving the children an unobstructed view during the echocardiography procedure according to the age group), The control group received the usual care underwent conventional comfort methods by the parents such as hugging, pacifying, patting, etc., In both groups, the child had to be supine on the examination table during the echocardiography.

##### 2. Development & Description of the tools:

Section A: child demographic of the characteristics and their parents

Section B: Observation Scale of Behavioral Distress

Section C: Performa for assessing physiological parameters Section

#### RESULTS:

Table 1

Distribution of children according to their Sociodemographic Characteristics

Variable		Experimental	%	Control	%	Chi <sup>2</sup> cal.	Significant	Cs
Age group	6-15M	14	47	7	23	6.413	0.061	NS
	16-25 M	10	33	8	27			

	26-36 M	6	20	15	50			
	Mean	17.933		23.417				

Table 2

shows a summary statistics of physiological parameters about children during echocardiography examination in the experimental and control group by using T-test (posttest between experimental & control group)

Test type	Group	N.	Mean	Std. Deviation	T -cal .	Significant .
Heart rate	Experimental	30	151.133	18.79790	3.911	0.021 Experimental.
	Control	30	128.4667	25.57711		
Respiration rate	Experimental	30	47.5667	8.59303	5.169	0.001 Experimental.
	Control	30	35.2000	9.89392		
Systolic blood pressure	Experimental	30	11.2333	2.07918	5.374	0.000 Experimental
	Control	30	9.1333	0.50742		
Diastolic blood pressure	Experimental	30	7.8333	1.85850	3.962	0.022 Experimental
	Control	30	6.2667	1.11211		
Oxygen saturation	Experimental	30	96.8000	3.70833	0.043	0.512 (Not Significant)
	Control	30	96.8333	2.01859		

Table 3

Overall assessment of Behavioral scale distress about children during echocardiography examination in the experimental and control group:

During echocardiography examination experimental group & control group:

Test type	Group	N.	Mean	Std. Deviation	T- cal.	Significant .
1	Experimental	30	23.7000	7.01796	6.083	0.000 Experimental
	Control	30	13.9667	5.24886		

*P-value: probability value, Sig: Significance, N.S: Not Significant, S: Significant, H.S: High significant*

## Discussion of the Study Results

### Part 1: Socio-demographic Characteristics of the Study Sample

(60) children participated in the study. The descriptive analysis represents the sociodemographic characteristics of the study sample which shows that there is a non-significant relationship between the play therapy (the experimental group watched cartoons with sound during the examination )and all the demographic data at p-value more than 0.05, the result agrees with (Raghda L. Mahmoud and Adraa H.Shawq 2022) in Iraq which show that was a non-significant correlation between the all demographic variables with all parts [11] &[12] and shows that the most child's age group

(47%) the highest percentage among the experimental group (6-11 months) While (23%) in the control group, it was lower percentage among the age group.

### Part 2: Effectiveness of play therapy on physiological parameters about children during echocardiography examination in the experimental and control group by using T-test (posttest between experimental & control group):

The results show the significance of the posttest for physiological parameters except for no significant oxygen saturation at the level significant of  $P < 0.05$  levels.

These results are consistent with a study conducted by (Francisco Sánchez Ferrer et al., 2019) in Spain

showing cartoons on a TV to children undergoing an echocardiography procedure was effective in decreasing the examination time and the systolic and diastolic blood pressure, and this tool is also safe and avoids the added risk of anesthesia. The children and their parents were relaxed during the examination, and the children showed signs that the echocardiography was an enjoyable experience. Thus, showing cartoons is a useful aid in children aged 6–43 months receiving echocardiography.

### **Part 3: Assessment of Behavioral scale distress about children during echocardiography examination in the experimental and control group:**

The total assessment of Behavioral scale distress about children during echocardiography examination in the experimental group shows that Behavioral scale distress during the posttest time ( $6.083M \pm SD = 23.7000 \pm 7.01796$ ) Significant for the experimental group & improvement compared with the control group on the level of Behavioral Distress.

This result agrees with a study done by (Rosalia et al., 2017) in Brazil who studied therapeutic play to prepare children for invasive procedures and found the same results.[16, 17]

### **Conclusion**

\*The study show that Significant for experimental that there was an improvement in all physiological parameters by play therapy, and the values were significant at  $P \leq 0.05$  levels, and showing cartoons on a TV to children undergoing an echocardiography procedure was effective in decreasing the examination time and the systolic and diastolic blood pressure,

\*Our results show they Behavioral scale distress during the posttest time was Significant for the experimental group & improvement compared with the control group on the level of Behavioral Distress and showing cartoons on a TV to children undergoing an echocardiography procedure, and this tool is also safe and avoids the added risk of anesthesia. In addition, this tool is also safe and avoids the added risk of anesthesia.

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