

Effect of Play Therapy on Reducing One Day Surgery Preoperative Anxiety Among Children

¹ Fathia Z. Mohamed ² Eman S. Ahmed, ³ Marzoka A. Gadalla,
⁴ Ibrahim A. Ibrahim

¹ Assistant professor of Pediatric Nursing, Faculty of Nursing, Assiut University

^{2,3} Professor of Pediatric Nursing, Faculty of Nursing, Assiut University

⁴ Professor of Pediatric Surgery, Faculty of Medicine, Assiut University

Corresponding Author: ibrahim A. Ibrahim

Abstract: Anxiety is one of the most prevalent preoperative problems in children. It is estimated that approximately 50%–70% of children undergoing surgery experience severe anxiety and distress prior to surgery. Accurate measurement of anxiety is an important role of nurses in the pediatric day surgery setting as high levels of anxiety can lead to adverse consequences both during surgery and post-surgery. Thus, interventions to reduce preoperative anxiety are important for children and families. **The aim** of this study was to determine the effect of play therapy on reducing one day surgery preoperative anxiety among children at Assiut University Children Hospital. A quazi-experimental research **design** was used for this study. **Setting:** This study was conducted in the surgical unit at Assiut University Children's Hospital. **Sampling:** All children aged 3 to 12 years, who was admitted for one day surgery during a three - month's period. Three **tools** were used for this study: Tool I: An interviewing questionnaire sheet, Tool II: Modified Yale Preoperative Anxiety Scale (mYPAS), Tool III: The Spielberger State Anxiety Scale for children (SSAS-c). **Results:** The vast majority (90.3%, 96.8%) of both study and control groups respectively were anxious. More than three fourths (77.4%) of the study group children were experienced severe levels of anxiety before play therapy intervention which reduced to (41.9 %) after play therapy intervention. Highly statistically significant difference ($P=0.000$) was found between pre and post play therapy intervention in the study group while statistically significant differences ($P=0.02$, $P=0.03$) were found between studied children levels of Spielberger State anxiety and their male gender and rural residence respectively during pre and post play therapy intervention. No significant difference was found between studied children levels of anxiety and their age or birth order, also previous hospitalization or previous surgery did not significantly impact the child's level of anxiety. **Concluded** that play therapy was an effective method for reducing anxiety among children undergoing one day surgery as a feasible and cost effective intervention for children. The study **recommended** incorporating therapeutic play intervention in the preoperative periods as preoperative preparation.

Keywords: play therapy, one day surgery, preoperative anxiety.

Date of Submission: 20-08-2018

Date of acceptance: 03-09-2018

I. Introduction

Technological advancement and changes in health care in the modern era have increased the number of pediatric procedures being performed in variety of settings. One of these procedures is surgery, which becomes a stressful event in the life of a child. When a child undergoes a surgery, it often becomes a very significant and memorable event in the life of the entire family. Unlike other significant events in the child's life, it has an element of threat and fear of the unknown can be overwhelming. The child may experience tension, apprehension, nervousness, and worry toward the upcoming surgery along with fear of separation from parents and home environment, loss of control, unfamiliar routines, surgical instruments, and hospital procedures. (Aranha, et al., 2017).

Preoperative anxiety is an extremely unpleasant sensation for children. It refers to anxiety regarding the events that take place prior to surgery and it is a distressing feeling that results in adverse physiological and psychological reaction in children. With high level of anxiety, they may exhibit signs of delirium and post procedure maladaptive behavior. They may have more post procedural pain and require additional pain control medications (Nisha and Umarani, 2013 and Aranha, et al., 2017)

Excessive stress and anxiety experienced by children can affect their physical and physiological health, hinder their ability to deal with medical procedures, cause changes in their behavior, and affect their recovery from illness. Therefore, there is an urgent need for clinical researchers to develop, implement, and evaluate interventions that can minimize the children's anxiety level and improve their ability to handle the stress of

hospitalization and invasive procedures. Accordingly, better and faster recovery, decreased consumption of anesthetics, improved pain tolerance, and earlier hospital discharge are among the benefits of reducing anxiety that can finally lead to lower postoperative complications and costs (Silva, et al., 2017a and Shoja, et al., 2018).

Play has long been regarded as a vital element in the normal growth and development of children and is widely used to alleviate the stress experienced by pediatric patients and their families during hospitalization. Through play, children are given the opportunity to develop mastery of self and the environment and to enhance their understanding of the world (Li, et al., 2016).

Therapeutic Play is a structured play, applied by a trained professional, whose purpose is to relieve tensions and anxieties caused by the experience of situations unfamiliar to their age. Thus, the application of the therapeutic Play during hospitalization aims to promote physical well-being and emotional relief from the stress caused by disease and hospitalization. It can be classified into three types: Instructional therapeutic Play which aims to prepare the child for the procedures by instructing the child on how the procedure will be performed; Capacitating therapeutic Play the goal of which is to develop and strengthen the child's potential in the use of physiological functions according to their capability; and Dramatic therapeutic Play, to counter the cathartic expression of a child (Silva, et al., 2017b).

The need to play is not eliminated when children become ill or are hospitalized; on the contrary, children who can play may feel safer during the trans-operative period, even in a strange environment. One aspect of such activities is therapeutic play, which provides a structured play activity, follows the principles of play therapy, and has specific objectives to be achieved. Its use brings relief from anxiety caused by atypical experiences for age that tend to appear as threatening, requiring an intervention that will help the child/family to cope while undergoing a highly complex invasive procedure. (Silva, et al., 2017a).

Nurses play a vital role in helping children to cope with the stress of surgery. However, pre-operative psychological preparation for children remains inadequate. During the past decade, there has been an increase in the use of therapeutic play intervention to help children cope with the stress of hospitalization. Hence, management of preoperative anxiety in children is an issue of fundamental importance (Shoja, et al., 2018 and HE, et al., 2014). Therefore, this study was conducted to determine the effect of play therapy on reducing one day surgery preoperative anxiety among children at Assiut University Children Hospital.

Significance of the Study:

It is estimated that approximately 50%–70% of children undergoing surgery experience severe anxiety and distress prior to surgery. There is a need for developing a preoperative preparation program customized to the needs of children (Aranha, et al., 2017).

Aim of the Study: The aim of this study was to determine the effect of play therapy on reducing one day surgery preoperative anxiety among children at Assiut University Children Hospital.

Research hypotheses:

- 1-There is a significant difference between the pre interventional and post interventional anxiety level among children during their pre-operative period
- 2- Children who received the play therapy interventions would exhibit fewer negative emotions when compared with children who received usual care.

II. Subjects And Method

Research Design:

A quazi-expermental research design was used for this study. **Setting:**
This study was conducted in the surgical unit at Assiut University Children's Hospital.

Sampling:

All children aged 3 to 12 years, who was admitted for one day surgery during a three - month's period. The included participants were randomly enrolled into the intervention and the control groups, after the pre-test baseline measurements had been taken. The intervention group received routine care and therapeutic play While, the control group received routine care only.

Inclusion criteria

- 1- Children who are in the age group 3-12 years.
- 2- Children who are undergoing day surgery.
- 3- Children and parents who are willing to participate in study.
4. Children who were able to co-operate in the play activities

Exclusion criteria:

1. Children with current chronic medical problems such as asthma, diabetic mellitus and haematological problems
2. Children with current neurological problems such as epilepsy
3. Children with psychiatric problems including mental retardation depressive and bipolar disorders or any kind of psychotic disorders
4. Children with identified cognitive and learning difficulties.
5. Children who are admitted to intensive care unit.

Tools of data collection:

Three tools were used for this study:

Tool I: An interviewing questionnaire sheet:

It was designed by the researchers to collect data related to studied children and their mothers and it included two parts:-

Part one: Personal data as age, sex, residence, birth order, mother's age, education and occupation.

Part two: Clinical data as previous surgery, Type of current surgery performed, previous hospitalization and cause of hospitalization, disease diagnosis and medical history.

Tool II: Modified Yale Preoperative Anxiety Scale (mYPAS; Kain et al. 1997):

The mYPAS is an observer-rated scale designed to measure a child's level of anxiety in the preoperative setting during preoperative period and the induction of anesthesia in children aged 3-12 and it consists of 27 items in five categories: activity (e.g., moving from toy to parent in unfocused manner), vocalizations (e.g., whimpering, crying), emotional expressivity (e.g., worried, sad, or frightened eyes), state of apparent arousal (e.g., vigilant, looking quickly all around), and use of parents (e.g., reaches out to parent). Each category is scored from 1 to 4, with the exception of vocalizations, which is scored from 1 to 6. Divide each item rating by the highest possible rating (i.e., 6 for the "vocalizations" item and 4 for all other items), add all the produced values, divide by 5 and multiply by 100. **Kain et al., (1997)** in a study, obtained the validity of the modified version of (m-YPAS) against a recognized gold standard for anxiety assessment (STAIC). According to their study, m-YPAS showed good to excellent observer reliability ($\kappa=0.68-0.86$) and good concurrent and construct validity. Therefore, it can be used to measure children's anxiety during the preoperative period. Finally, the mYPAS scales showed good inter-rater reliability with coefficients ranging from $r=0.73-0.91$ (**Kain et al., 1997**). The English version of m-YPAS was translated into Arabic to be used in this study.

Tool III: The Spielberger State Anxiety Scale for children (SSAS-c):

It was used to measure the state anxiety level of the children. The psychometric properties of the SSAS-C have been empirically tested by (**Mamiyanlo et al., 2001**). The SSAS-C asks children to point out the degree to which they are experiencing a particular feeling at the current moment. Each item begins with the stem "I feel" and children respond by placing an "x" next to the one response that best describes how they feel from three possible responses. The scale consists of 20 items, each of which is scored from 1 to 3. The total possible scores range from 20 to 60, with higher score indicating greater anxiety.

Method:

An official permission was obtained from the head of surgical unit at Assiut University Children Hospital.

A written consent was obtained from the mother of studied children.

Reliability of tool 1 was assessed using alpha-Cronbach test to test the internal consistency. While tool 11, tool 111 are valid and reliable.

Play therapy intervention:

It consists of child friendly environment, comic video clips (for 7- 12 years), drawing and play therapy (for children 3- 6 years):

1- Child friendly environment:

in the form of designing the waiting room suite, color scheme, and décor to enhance feelings of comfort in children and reduce the sense of threat. (Colored pictures suitable for children hanged on the wall)

2- Play therapy:

Children aged 3 to 6 years old were play the induction mask, stethoscope and syringes in addition to take a selfy photo of him/her while using this equipment.

3- Drawing material:

It used for 3 – 6 year age children (sheets of paper, felt tip pens, color pencils, crayons, ruler, pencils and eraser).

4- Selected comic video clips:

It was chosen to suit the children aged 7 to 12 years old.

-Therapeutic play was given to the child for one hour before the operation

-The contents of the intervention program were validated by a jury of five professors from pediatric nursing and pediatrics.

Pilot Study:

A Pilot Study was carried out on 10 % (3) children to test the applicability of the tools and to estimate the time needed. According to the results of the pilot study, the needed modifications were done, after that the final form was set and they included in the study sample.

Field of the work:-

The study was conducted over a period of three months; from the beginning of October 2017 to the end of December 2017. Data collection was done three days per week; each intervention lasted one hour before surgery for about five children per day according to their age group. Interviewing the studied children parents was conducted in the day before surgery to collect necessary data. The time needed for each interview ranged from 30 to 45 minutes.

Ethical considerations:

- 1-Approval of ethical committee of faculty of nursing- Assiut University was taken.
- 2- The formal written consent was obtained from mothers of studied children to collect the data after explaining purpose and the nature of the study.
- 3-The researchers assured voluntary participation, anonymity and confidentiality of each child who agreed to participate in the study.

III. Statistical Analysis

The data obtained was analyzed by using descriptive statistics i.e. mean percentage, standard deviation and chi-square test. Descriptive statistics includes frequency and percentage distribution of the demographic variables and mean and standard deviation of pre and post test level of anxiety of children .P values < 0.05.Levels are considered statistically significant.

IV. Results

Table (1): Personal and medical data of studied children

Items	Study (n=31)		Control (n=31)		p-value
	No	%	No	%	
Personal data					
Gender					0.374
Male	25	80.4	22	70.9	
Female	6	19.6	9	29.1	
Child's age/years					0.147
3-6 yrs	14	45.2	11	35.5	
6-12yrs	17	54.8	20	64.5	
Mean age	7.35± 3.94		8.19 ± 4.29		
Residence					0.796
Urban	12	38.7	13	41.9	
Rural	19	61.3	18	58.1	
Birth order					0.148
1 st	10	32.2	10	32.2	
2 nd -3 rd	9	29.1	14	45.2	
4 th and more	12	38.7	7	22.6	
Previous hospitalization					0.65
Yes	11	35.5	10	32.2	
No	20	64.5	21	67.8	
Previous surgery					1.000
Yes	9	29.1	9	29.1	
No	22	70.9	22	70.9	
Type of current surgery performed					0.06
Appendectomy	19	61.3	21	67.7	
Intestinal obstruction repair	1	3.2	1	3.2	
Herniorrhaphy	2	6.4	1	3.2	
Modification of urinary tract	4	12.9	1	3.2	
Hydrocelectomy	4	12.9	3	9.7	
Colostomy closure	1	3.2	0	0.0	
Others	0	0.0	4	12.9	

Table (1): Present Personal and medical data of studied children. It was observed that the highest percentage (80.4 %, 70.9 %) of them in both study and control groups respectively were males and more than half (54.8%) of the study group children were in the age group from 6-12 years old with a mean age of (7.35 ± 3.94) while more than two thirds (64.5 %) of the control group children were in the same age group with a mean age of (8.19 ± 4.29). As regard their residence and birth order, about two thirds (61.3%, 58.1%) of both study and control groups respectively were from rural areas and more than one third (38.7 %) of the study group were the 4th or more child while less than half (45.2 %) of the control group were in the 2nd or 3rd order. Regarding medical data of studied children, it was found that the most (61.3%, 67.7%) current surgery performed for both study and control group respectively was appendectomy, about two thirds and more (64.5%, 67.8% &70.9%) of both study and control groups respectively neither had Previous hospitalization nor undergone previous surgery. No statistically significant differences was found between study and control groups regarding all Personal and medical data of studied children.

Table (2): Personal data of studied children mothers'

Items	Study (n=31)		Control (n=31)		p-value
	No	%	No	%	
Mother's age:					
< 30	10	32.2	8	25.8	0.58
30 - < 40	17	54.8	16	51.7	
40 and more	4	13	7	22.5	
Mother's education:					
Illiterate or read and write	15	48.4	8	25.8	0.26
Primary or preparatory	6	19.3	7	22.6	
Secondary	9	29.1	13	41.9	
University and higher	1	3.2	3	9.7	
Mother's occupation:					
House wife	31	100	28	90.3	0.07
Employee	0	0	3	9.7	

Table (2): Shows personal data of studied children mother's. The present study indicated that more than half (54.8 %, 51.7%) of studied children mother's in both study and control groups respectively were in the age group between 30 - < 40 years old, near half (48.4 %) of mothers in the study group were Illiterate or read and write. On the other hand, (41.9%) of mothers in the control group had Secondary level education. All mothers (100 %) in the study group and most (83.9 %) of them in the control group were house wives. No statistically significant differences were found between both groups related to all mothers' personal data.

Table (3): Total score of Modified Yale Preoperative Anxiety Scale (mYPAS) of studied children in both study and control groups

Modified Yale score (mYPAS)	Study (n=31)		Control (n=31)		p-value
	No	%	No	%	
Anxious	28	90.3	30	96.8	0.30
Not anxious	3	9.7	1	3.2	

Table (3): Proved total score of Modified Yale Preoperative Anxiety Scale (mYPAS) of studied children in both study and control groups. The vast majority (90.3%, 96.8%) of both study and control groups respectively were anxious. No statistically significant difference was found among the two groups.

Table (4): Levels of Spielberger State Anxiety Scale among studied children (SSAS-c) in both study and control groups

Anxiety level	Study (n=31)				Control (n=31)				p-value
	Pre		Post		Pre		Post		
	No	%	No	%	No	%	No	%	
Mild	0	0.0	3	9.7	0	0.0	0	0.0	----
Moderate	7	22.6	15	48.4	3	9.7	3	9.7	0.000
Severe	24	77.4	13	41.9	28	90.3	28	90.3	0.01
p-value	0.000				1.00				

Table (4): illustrate levels of Spielberger State Anxiety Scale among studied children (SSAS-c) in both study and control groups .The current study revealed that, more than three fourths (77.4%) of the study group

children were experienced severe level of anxiety before play therapy intervention which reduced to (41.9 %) after play therapy intervention. Unsurprisingly, the majority (90.3 %) of control group children were experienced severe level of anxiety in both pre and post play therapy intervention. Statistically significant difference (P=0.01) was found between both study and control groups. About one fourth (22.6 %) of the study group and only (9.7%) of the control group were experienced moderate level of anxiety before play therapy intervention which increased post play therapy intervention to less than half (48.4%) in study group and not reduced in control group with highly statistically significant difference (P=0.000) among the two groups. Only (9.7%) of study group were experienced mild level of anxiety post play therapy intervention with no significant difference among the two groups. Highly statistically significant difference (P=0.000) was found between pre and post play therapy intervention in the study group while no statistically significant difference (P=1.00) was found between pre and post play therapy intervention in the control group.

Table (5): Relationship between studied children levels of Spielberger State Anxiety Scale (SSAS-c) and their personal and medical data pre and post play therapy intervention

Items	Pre			Post			p-value
	Mild	moderate	Severe	Mild	Moderate	Severe	
Personal data							
Gender							
Male	0 (0.0)	6 (19.3)	19 (61.3)	3 (9.7)	12 (38.7)	10 (32.2)	0.02
Female	0 (0.0)	1 (3.2)	5 (16.1)	0 (0.0)	3 (9.7)	3 (9.7)	0.22
Child's age /yrs							
3- 6 yrs	0 (0.0)	2 (6.4)	12 (38.7)	2 (6.4)	5 (16.1)	7 (22.6)	0.10
6 - 12 yrs	0 (0.0)	5 (16.1)	12 (38.7)	1(3.2)	10 (32.3)	6 (19.4)	0.4
Residence							
Urban	0 (0.0)	3 (9.7)	9 (29.0)	0 (0.0)	7 (22.6)	5 (16.1)	0.09
Rural	0 (0.0)	4 (12.9)	15 (48.4)	3 (9.7)	8 (25.8)	8 (25.8)	0.03
Birth order							
1 st	0 (0.0)	2 (6.4)	8 (25.8)	1 (3.2)	5 (16.1)	4 (12.9)	0.16
2 nd -3 rd	0 (0.0)	0 (0.0)	2 (6.4)	0 (0.0)	1 (3.2)	1 (3.2)	0.24
4 th and more	0 (0.0)	5 (16.1)	14 (45.2)	2 (6.4)	9 (29.0)	8 (25.8)	0.09
Previous hospitalization							
Yes	0 (0.0)	4 (12.9)	7 (22.6)	1 (3.2)	7 (22.6)	3 (9.7)	0.18
No	0 (0.0)	3 (9.7)	17 (54.8)	2 (6.4)	8 (25.8)	10 (32.2)	0.04
Previous surgery							
Yes	0 (0.0)	3 (9.7)	6 (19.3)	0(0.0)	7 (22.6)	2 (6.4)	0.05
No	0 (0.0)	4 (12.9)	18 (58.1)	3 (9.7)	8 (25.8)	11 (35.5)	0.04

Table (5): Verify relationship between studied children levels of Spielberger State Anxiety Scale (SSAS-c) and their personal and medical data during pre and post play therapy intervention. Regarding personal data, statistically significant differences (P=0.02, P=0.03) were found between studied children levels of Spielberger State anxiety and their male gender and rural residence respectively. Meanwhile, (61.3% ,48.4%) of studied males and rural residence children experienced severe levels of anxiety during pre play therapy intervention which reduced to (32.2% , 25.8 %) post play therapy intervention respectively. No significant difference was found between studied children levels of anxiety and their age or birth order. As regard medical data, no significant difference was found between studied children levels of anxiety and their previous hospitalization or previous surgery during pre and post play therapy intervention. Indeed, (54.8 % , 58.1%) of studied children who don't experienced previous hospitalization or undergone previous surgery experienced severe levels of anxiety during pre play therapy intervention which although reduced to (32.2%, 35.5%) post play therapy intervention respectively with statistically significant differences (P=0.04).

Table (6): Relationship between studied children levels of Spielberger State Anxiety Scale (SSAS-c) and their mother's personal data pre and post play therapy intervention

Items	Pre			Post			p-value
	Mild	Moderate	Severe	Mild	Moderate	Severe	
Mother's age							
< 30	0 (0.0)	0 (0.0)	10 (32.2)	1(3.2)	3 (9.7)	6 (19.3)	0.08
30 - < 40	0 (0.0)	5 (16.1)	12 (38.7)	2 (6.4)	9 (29.1)	6 (19.3)	0.07
40 and more	0 (0.0)	2 (6.4)	2 (6.4)	0 (0.0)	3 (9.7)	1(3.2)	0.4
p-value	0.07			0.5			
Mother's education							
Illiterate or read and write	0 (0.0)	4 (13.0)	11(35.5)	2 (6.4)	7 (22.5)	6 (19.3)	0.117
Primary or preparatory	0 (0.0)	0 (0.0)	6 (19.3)	0 (0.0)	3 (9.7)	3 (9.7)	0.04

Secondary	0 (0.0)	3 (9.7)	6 (19.3)	1 (3.2)	5 (16.1)	3 (9.7)	0.28
University and higher	0 (0.0)	0 (0.0)	1(3.2)	0 (0.0)	0 (0.0)	1 (3.2)	1.0
p-value	0.4			0.8			

Table (6): displays relationship between studied children levels of Spielberger State Anxiety Scale (SSAS-c) and their mother's personal data pre and post play therapy intervention. No statistically significant differences were found between studied children levels of Spielberger State Anxiety and all mother's personal data pre and post play therapy intervention except for Primary or preparatory level of mother's education (P=0.04), (19.3%) of studied children whose mothers had preparatory level education experienced severe anxiety in the pre play therapy intervention which reduced to (9.7%) post play therapy intervention.

V. Discussion

More than 5 million children undergo surgery every year, and it is reported that up to 50% of these children develop significant behavior stress and anxiety before their surgery. In fact, up to 60% of children receiving surgery with general anesthetic are anxious prior to the surgery in the holding area and during the induction. Hence, accurate measurement of anxiety is important in the pediatric day surgery setting as high levels of anxiety can lead to adverse consequences both during surgery (e.g., at anesthetic induction) and post-surgery. Thus, interventions to reduce preoperative anxiety are important for some children and families (Naregal, et al., 2016 and Wright, et al., 2010).

Therapeutic play is one of the most effective interventions which are cost-effective, as its content is already very familiar to nurses. It took only an hour of a staff nurse's time to provide. It is economically feasible for the health care system to consider it as a routine nursing preparation of children for surgery. Therefore, it is the responsibility of nurses working in the pediatric area, as a member of the multi-professional health team, to use therapeutic Play technique, in providing care for the child and family (Li, et al., 2014 and Silva, et al., 2017 b).

Remarkably, the overall results of the present study revealed that pediatric one day surgery is a potentially stressful experience for children and use of play therapy was effective for reducing anxiety among these children. As regard to total score of Modified Yale Preoperative Anxiety Scale (mYPAS) among studied children. The current study proved that, the vast majority of both study and control groups were anxious. No statistically significant difference was found among the two groups. These finding were consistent with Mahmoudi-gharaei, et al., (2008) who shows that m-YPAS mean score in the intervention group increased from 34.07 ± 8.80 to 34.30 ± 8.78 after operation ($p=0.607$). According to their results, the level of anxiety has increased in the both groups after surgery and also with Jenkins, et al., (2014) who indicated that Preoperative anxiety is frequently experienced by children undergoing anesthesia and surgery. In addition, children are most susceptible to the stress of surgery owing to their limited cognitive capabilities, greater dependence on others, lack of self control, limited life experience, and poor understanding of the health care system (Perry, et al., 2012). Consequently, accurate measurement of anxiety is important in the pediatric day surgery setting as high levels of anxiety can lead to adverse consequences both during surgery (e.g., at anesthetic induction) and post-surgery (Wright, et al., 2010). Thus, interventions to reduce preoperative anxiety are important for children and their families.

Regarding levels of Spielberger State Anxiety Scale among studied children (SSAS-c) in both study and control groups. Even more importantly, results from the present study further demonstrated that, more than three fourths of the study group children were experienced severe level of anxiety before play therapy intervention which reduced to less than two fourths after play therapy intervention. About one fourth (22.6 %) of the study group and only (9.7%) of the control group were experienced moderate level of anxiety before play therapy intervention with highly statistically significant difference (P=0.000) among the two groups. Only (9.7%) of study group were experienced mild level of anxiety post play therapy intervention with no significant difference among the two groups. Highly statistically significant difference (P=0.000) was found between pre and post play therapy intervention in the study group while no statistically significant difference (P=1.00) was found between pre and post play therapy intervention in the control group. These findings appear in agreement with results of a randomized study by Fernandes, et al., (2014) who concluded that children who received educational material before surgery were significantly less worried than those of the control group and also with Sabaq and El-Awady, (2012) in a similar study on 120 children and their mothers at Zagazig University hospital in Egypt who reported that the comparison of the anxiety level of children before Preoperative preparation by using therapeutic play between the study group and the control group was different without the statistic significance (P =0.911) and when comparing the anxiety level of children post intervention between the study group and the control group, it was found out to be different with highly statistic significance (P= 0.001). Besides, the results of a study performed by Majzoubi, et al., (2013) entitled as "Effects of psychological preparation on reduction of surgery anxiety signs in children" showed a significant difference in the post-test

mean scores of preoperative anxiety in the intervention group, compared to those in the control group. While in contrast with **Davidson, et al., (2017)** who found that the majority of children in control group had moderate anxiety in pretest and post test (70%, 66.3%) whereas in the experimental group more than half of children had moderate anxiety (66.6%). Twenty-six percent had mild anxiety and only 6.6% of children had severe anxiety during pre-test. Furthermore, in the mentioned study, the intervention group showed a significant reduction in anxiety. This can be interpreted by the fact that the therapeutic play intervention succeed in enhancing the children's personal control and their adaptation abilities towards potential stressful situations through familiarizing the child with personnel and the setting such as recovery and operating room.

As regard relationship between studied children levels of Spielberger State Anxiety Scale (SSAS-c) and their personal and medical data during pre and post play therapy intervention. It was observed that, statistically significant differences ($P=0.02$, $P=0.03$) were found between studied children levels of anxiety and their male gender and rural residence respectively during pre and post play therapy intervention. No significant difference was found between studied children levels of anxiety and their age or birth order. Regarding medical data, no significant difference was found between studied children levels of anxiety and their previous hospitalization or previous undergone surgery during pre and post play therapy intervention. This result suggested that previous hospitalization or previous surgery did not significantly impact the child's level of anxiety. These findings were approximately supported by **Patel, et al., (2014)** who conducted an experimental study and found that prevalence of anxiety was high among rural children when compared to urban children. And also with **Wright, et al., (2010)** who their examination of demographic statistics suggested that child's sex, and whether or not he/she had previously undergone a surgical procedure, did not significantly impact the child's level of anxiety. While disagree with **Mamatha, et al., (2014)** who showed that child's age influence the occurrence of preoperative anxiety and also with **Shoja, et al., (2018)**, their results showed that none of the demographic and medical variables in children had a statistically significant effect on their anxiety mean scores ($P<0.05$). Also with **McEwen, et al., (2007)** who showed that child's anxiety was associated with age of the child.

Regarding relationship between studied children levels of Spielberger State Anxiety Scale (SSAS-c) and personal data of their mother's pre and post play therapy intervention. It was noticed that, No statistically significant difference was found between studied children levels of Spielberger State Anxiety and their mother's personal data pre and post play therapy intervention. This finding was apparently in accordance with **Davidson, et al., (2017)** who conduct a similar study and their results indicated that there was no significant association between educational status of the mother in control group and an experimental group of hospitalized children before and after play therapy and also go on line with **Cagiran, et al., (2014)** who reported that maternal socio-economic and education level was not associated with preoperative anxiety levels in children and also with **Davidson, et al., (2006)** who shows that maternal socio-demographic characteristics were have no effect on children's anxiety levels during induction of anesthesia while this finding was disagree with **Charana, et al., (2018)** who found that parental characteristics that influence children level of anxiety include parent's age, high- and low-educational background.

VI. Conclusion

The study concluded that play therapy was an effective method for reducing anxiety among children undergoing one day surgery as a feasible and cost effective intervention for children. Pediatric day surgery is a potentially stressful and threatening experience for children and parents.

VII. Recommendations

Based on the main study finding, the following recommendations can be drawn:-

- 1-** Incorporating therapeutic play intervention in the preoperative periods as preoperative preparation, thereby creating and maintaining a therapeutic environment for children
- 2-** The nursing personnel should take the preoperative therapeutic play intervention as a duty and regard it as a role in doing the nursing practices in order to give the children the psychological care beside the routine physical care that help in reducing their anxiety.
- 3-** Interventions to reduce preoperative anxiety are important for children and their parents to enhance their sense of control through visiting the operating room so as to increase their familiarity with the environment.
- 4-** Nurses should have adequate knowledge about therapeutic play, stressors of hospitalization and the way of solving them. They should be given special training on measures of reducing anxiety.
- 5-** Appropriate utilization of research helps nurses to make evidence based decisions regarding care of the children. Nurses can develop customized preoperative preparation programs and test its effectiveness and use this evidence in providing nursing care to children and their parents.
- 6-** Further researches on therapeutic play will help to strengthen its facts and promoting the children well being by reducing their anxiety during hospitalization.

References

- [1]. **Aranha ,P.R, Sams, L.M ,and Saldanha ,P.,(2017):** Impact of Multimodal Preoperative Preparation Program on Children Undergoing Surgery Archives of Medicine and Health Sciences | Volume 5 | Issue 2.
- [2]. **Cagiran, E., Sergin, D., Nuri Deniz, M., Tanatt, B., Emiroglu, N., and Alper, I., (2014):** Effects of sociodemographic factors and maternal anxiety on preoperative anxiety in children. Journal of Medical Research; Volume: 42 issue: 2, page(s): 572-580 <https://doi.org/10.1177/0300060513503758>
- [3]. **Charana, A., Tripsianis, G., Matziou, V., Vaos, G., Iatrou, C., and Chloropoulou, P., (2018):** Preoperative Anxiety in Greek Children and Their Parents When Presenting for Routine Surgery. Anesthesiology Research and Practice Volume 2018, Article ID 5135203, 6 pages <https://doi.org/10.1155/2018/5135203>
- [4]. **Davidson, AJ, Shrivastava, PP, Jansen, K. (2006):** Risk factors for anxiety at induction of anesthesia in children: a prospective cohort study. *Pediatr Anesth* ; 16: 919–927.
- [5]. **Davidson, B., Satchi, N. S., and Venkatesan, L., (2017):** Effectiveness of Play Therapy upon Anxiety among Hospitalized Children. *International Journal of Advance Research, Ideas and Innovations in Technology*; Volume 3, Issue 5, at www.IJARIT.com
- [6]. **Fernandes, S. , Arriaga, P. and Esteves, F. (2014):** Providing preoperative information for children undergoing surgery, a randomized study testing different types of educational material to reduce children’s preoperative worries, *Health education research*, 29, (6).
- [7]. **He, H.G., Zhu l, Li, HC.W., Wang, W., Vehvil ainen - Julku nenk ,C. and Hanes, W.C., (2014):** A randomized controlled trial of the effectiveness of a therapeutic play intervention on outcomes of children undergoing inpatient elective surgery: *Journal of Advanced Nursing* 70 (2) , 431– 442. Doi: 10.1111/jan.12234
- [8]. **Jenkins, B.N., Fortier, M.A., Kaplan, S.H. Mayes, L. C. and Kain, Z.N. (2014):** Development of a Short Version of the Modified Yale Preoperative Anxiety Scale; *International Anesthesia Research*, Volume 119 • Number 3 www.anesthesia-analgesia.org
- [9]. **Kain, Z.N., Mayes, L.C., Cicchetti, D.V., Bagnall, A.L., Finley, J.D., and Hofstadter, M.B. (1997):** The Yale Preoperative Anxiety Scale: how does it compare with a “gold standard”? *Anesth Analg.*; 85:783-8.
- [10]. **Li, W.H, Chung, J.O, Ho, K.Y and Kwok, B.M (2016):** Play interventions to reduce anxiety and negative emotions in hospitalized children ; *BMC Pediatr.* V. 16: 36. Doi: [10.1186/s12887-016-0570-5](https://doi.org/10.1186/s12887-016-0570-5).
- [11]. **Mahmoudi-gharaei, J., Moharari, F., Shahrivar, Z., Ashjaei, B., Alirezaei,N., and Parizad, J., (2008):** Effect of Preoperative Play Interventions on Post Surgery Anxiety . *Iran J Psychiatry*; 3: 20-24.
- [12]. **Majzoobi, M., Amani, R., and Majzoobi, F. (2013):** Effects of psychological preparation on reduction of surgery anxiety signs in children. *Koomesh*; 14(4):466-73.
- [13]. **Mamatha, S.P., Kumar, V., Santhosh, P., and Sundeep, P.T. (2014):** Effectiveness of hospital based intervention on parenting stress among mothers of pediatric surgery children in South India. *Int J World Res*; 1:25 -34.
- [14]. **Mamiyanlo, H., Hlhani, F. and Ghofranipour, F. (2001):** Evaluation of the effects of a play program on the anxiety of hospitalized school-age children in Tehran medical center of children in 2000-1999. *Modares J Med Sci.*; 4(1):55-62
- [15]. **McEwen, A., Moorthy, C., Quantock, C., Rose, H., and Kavanagh, R.,(2007):** The effect of videotaped preoperative information on parental anxiety during anesthesia induction for elective pediatric procedures. *Paediatr Anaesth*; 17:534-9.
- [16]. **Naregal, P., Mohite, V., and Hiremath, P. (2016):** Effectiveness of Play Therapy in Reducing Stress among the Hospitalized Children (6-12 Years) Undergoing Surgery in Selected Hospitals Maharashtra PARIPEX - INDIAN JOURNAL OF RESEARCH, Volume: 5; Issue: 8
- [17]. **Nishia, K. and Umarani, J. (2013):** EFFECT OF PLAY INTERVENTION IN THE REDUCTION OF ANXIETY AMONG PREOPERATIVE CHILDREN. *Int J Cur Res Rev*, Vol. 05 issue (11).
- [18]. **Patel, Ravindra and Suresh (2014):** Study to assess the effectiveness of play therapy on anxiety among hospitalized children, *IOSR Journal of Nursing and Health Science*, 5 17-23.
- [19]. **Perry, J., Hopper, V. and Masiogale, (2012):** Reduction of Preoperative Anxiety in Pediatric Surgery Patients Using Age-Appropriate Teaching Interventions, *American Society of Peri Anesthesia Nurses*, 1089-9472/\$36.00 doi:10.1016/j.japan.2012.01.003.
- [20]. **Sabaq, A.G, and El-Awady, S.,(2012) :**The Effect of Pre-Operative Preparation Program and Mothers Presence during Induction on Anxiety Level and Behavior Change in Young Children Undergoing Elective Surgery. *Life Science Journal*; 9(4) at: <http://www.lifesciencesite.com>.
- [21]. **Shoja, M., Nabavi, F.H, Ramezani, M., Saki, A., (2018):** Effect of a Preoperative Preparation Program on Anxiety in School-age Children Undergoing Surgery Using a Factorial Design *Evidence Based Care Journal*, 7 (4): 30-37.
- [22]. **Silva, R.D., Austregésilo, S.C., Ithamar, L., and Lima, L.S. (2017 a):** Therapeutic play to prepare children for invasive procedures: a systematic review; *J Pediatr (Rio J)*. 93:6--16.
- [23]. **Silva, S.G.T., Santos, M.A., Floriano, C.M.F., Damião, E.B.C., Campos, F.V., and Rossato, L.M. (2017 b):** Influence of Therapeutic Play on the anxiety of hospitalized school-age children; *Clinical trial. Rev Bras Enferm [Internet]*. 70 (6):1244-9. DOI: <http://dx.doi.org/10.1590/0034-7167-2016-0353>.
- [24]. **Wright, K.D, Eisner, A., Stewart, S.H and Finley, G.A (2010):** Measurement of Preoperative Anxiety in Young Children: Self-report Versus Observer-rated; *J Psychopathol Behav Assess*, 32:416–427

librahim A. Ibrahim. “Effect of Play Therapy on Reducing One Day Surgery Preoperative Anxiety Among Children”. IOSR Journal of Nursing and Health Science (IOSR-JNHS) , vol. 7, no.4 , 2018, pp. 15-23.