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Article Review

The Effects of Therapeutic Play for Reducing Impact Hospitalization Pre and School-Age In Hospital: A Systematic Review

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ABSTRACT

This systematic review aimed to identify the effectiveness of therapeutic play in reducing the impact of hospitalization on pre and school-aged children. Five databases were searched (ClinicalKey Nursing, Scopus, Sage Journals, ScienceDirect, and PubMed) for articles published between 2019 and 2023. Six RCT studies from Turkey met the inclusion criteria and were assessed for quality using the JBI Critical Appraisal Checklist. The therapeutic play interventions included goldfish therapy, educational animated films, finger puppet play, music and kaleidoscope therapy, cartoon-assisted endoscopy preparation packages, and buzzy, jet lidocaine, bubble-blowing, and aromatherapy. The duration of the interventions varied. The outcomes measured were anxiety, fear, pain, emotional and psychological well-being, and postoperative nausea and vomiting. The results showed that therapeutic play significantly reduced anxiety (50% of studies), fear (100%), and pain (50%) in children undergoing hospitalization or medical procedures. Goldfish therapy also improved emotional and psychological well-being. No significant differences were found in postoperative vomiting and nausea. The most effective interventions were goldfish therapy, educational animated films, and finger puppet play. In conclusion, therapeutic play is a beneficial nursing intervention for reducing the negative impacts of hospitalization on children aged 3-12 years. Recommendations include implementing therapeutic play in pediatric hospital settings and conducting further research to expand the types of therapeutic play available.

INTRODUCTION

A child is someone who is not yet 18 years old, including children who are still in the womb.[1] Children have the right to grow and develop to achieve optimal health, but children may experience illness under certain conditions. Sick children can undergo outpatient or inpatient care in a hospital or hospitalization.[2]

Based on 2018 WHO (World Health Organization) data, pediatric patients undergoing hospitalization experience stress; in the United States around 3%-10%, in Germany around 3%-7%, in Canada and New Zealand around 5%-10%.[3] Based on data from the Indonesian Ministry of Women's Empowerment and Child Protection, in 2019 there were 34.9% of Indonesian children experienced health complaints and 18.9% experienced health problems that disrupted their daily activities. As many as 56.54% of children who experienced health complaints sought outpatient treatment and 3.84% underwent hospitalization.[4]

Hospitalization is a condition that requires children to stay in the hospital, undergo therapy, and care for the reason that is planned or an emergency condition.[2] Illness and hospitalization are unwanted and stressful experiences for every growing child and their family.[5] Children can have reactions related to uncomfortable feelings due to experiencing pain and undergoing treatment or examinations carried out. Almost all children who are hospitalized or hospitalized experience anxiety and fear.[6]

The reactions caused by children undergoing treatment are related to the stages of the child's age [7]. In general, children will experience separation from their parents/family and the surrounding environment, experience loss of self-control and fear of bodily injury and the pain they feel. The effects of hospitalization in general include: refusing to eat, difficulty sleeping, crying, and denying the presence of other people. Children can express anger by destroying toys, biting, or being uncooperative during treatment.[2]

One of the nursing actions that can be taken is play therapy. Therapeutic play is used as a guide for health workers in meeting their physical and psychosocial needs during the treatment process in the hospital.[2] Therapeutic play does not conflict with the treatment program, increasing enthusiasm, dramatic play, and creative play.[8] Toys and games must ensure safety and improve recovery.[9] Therapeutic play can reduce anxiety, increase cooperation in care, and help children overcome stress when undergoing a series of examinations at the hospital.[10,11] Play activities are carried out by looking at the child's condition, age, and development.[12] Therapeutic play is used to teach, express children's feelings, and achieve therapeutic goals.[13] Therapeutic play reduces anxiety, reduces pain, improves relationships with healthcare workers, and eliminates fears and insecurities.[12]

Several studies related to therapeutic play focus more on games carried out in hospitals involving children or groups of children to utilize time to avoid boredom or disturbance in children while undergoing treatment in the hospital. Therapeutic play is widely used to overcome anxiety during hospitalization. Coloring play therapy can reduce stress in hospitalized preschool children.[14] Research on snakes and ladders play therapy can reduce anxiety in hospitalized children.[15] Other research on storytelling play therapy can reduce anxiety levels in preschool children due to hospitalization.[16]

Therapeutic play carried out on hospitalized children is still rarely done and more aimed at overcoming anxiety in children. Therapeutic play is necessary for children who are hospitalized. Therefore, the author intends to make a systematic review to obtain scientific evidence related to various types of therapeutic play that can be carried out and their benefits for children undergoing treatment in hospitals.

METHODS

The design of this study is a systematic review. The research question is: what are the types and benefits of therapeutic play for children undergoing treatment at the hospital?. Literature searching was conducted using five databases: ClinicalKey Nursing, Scopus, Sage Journals, ScienceDirect, and Pubmed within the year from 2019 to 2023. The keywords used were: “therapeutic play” OR “play therapy” AND “children” OR “pediatric” OR “child” AND “hospitalization” OR “hospitalize”.

The selection of articles based on PICO.[17] P=Patient: pediatric patient age 3-12 years, I=Intervention: therapeutic play, C=Comparison: the standard intervention performed in the hospital, O=outcomes: types and benefits of the therapeutic play performed. The inclusion criteria are (1) pediatric patients aged 3-12 years, (2) the intervention is therapeutic play, (3) publication

year of the journal from 2019 to 2023, (4) articles in English, open access, and full text. The exclusion criteria, are (1) the article is not a journal, (2) the article cannot be downloaded.

Furthermore, data extraction was carried out using the Covidence application. The selection results showed that there were 450 articles with details: ClinicalKey Nursing (n=132), Sage Journal (n= 91), Science Direct (n=91), Pubmed (n=70), and Scopus (n=34). There are 17 duplicate articles. Furthermore, the selection of articles based on titles and abstracts, of the 433 articles which continued to the next selection, there were 27 articles and 406 articles were excluded. Of the 27 articles selected based on full text, 21 articles were issued and 6 articles will be reviewed. 21 articles were excluded for the following reasons: 4 settings were not in a hospital, 9 were not an experimental design, and 8 were not a population of children. The results can be seen in Figure 1. PRISMA (Preferred Reporting Items of Systematic Review and Meta-Analyses).

The final result of the selected literature screening is 6 articles. Then the article was reviewed by two people to assess the feasibility of the article using the JBI Critical Appraisal Tool for Assessment of Risk of Bias for Randomized Controlled Trials and Quasi-Experimental (Table 1) [18] . The results of the assessment of 6 articles continued with data analysis. The order of the articles is by the results of the journal's critical assessment. Data analysis was carried out on 6 selected articles illustrated in Table 2.

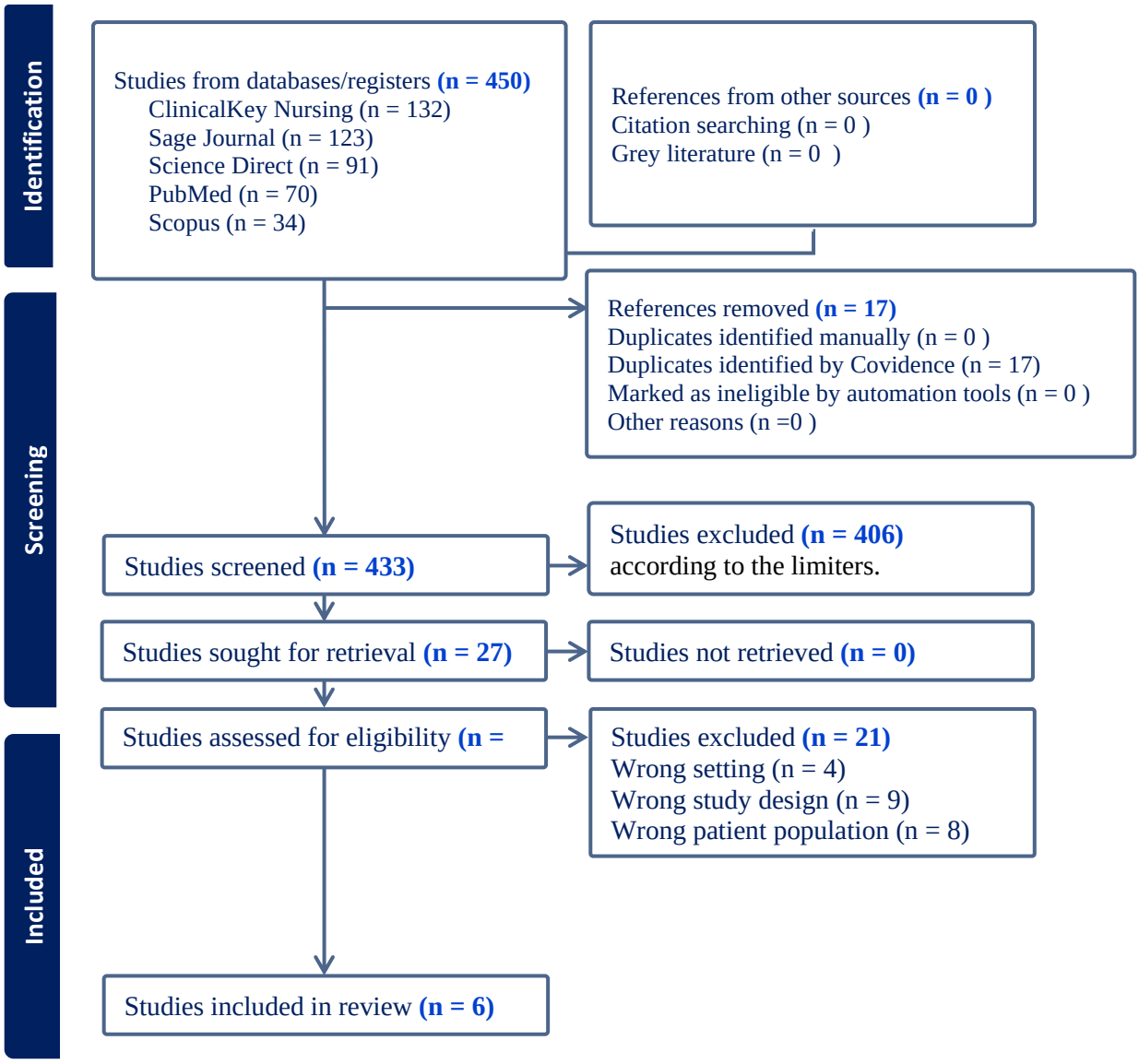

Figure 1. PRISMA Systematic Review

Table 1. Risk of Bias Assessment for RCT

Author	JBI Assessment Tool													
	Q1	**Q2**	**Q3**	**Q4**	**Q5**	**Q6**	**Q7**	**Q8**	**Q9**	**Q10**	**Q11**	**Q12**	**Q13**	**% Yes & Interpretation**
Sarman A and Günay U (2023)	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	Yes	92,3% Low-risk bias
Binay Yaz S and Bal Yilmaz H (2022)	Yes	Yes	Yes	Yes	Unclear	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	Yes	84,6% Low-risk bias
Kostaka MA, Kutman G and Semerci (2021)	Yes	Yes	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	76,9% Low-risk bias
Bulut M, Alemdar DK Bulut A and Salcı G (2020)	Yes	Yes	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	76,9% Low-risk bias
Köse S and Arıkan D (2020)	Yes	Yes	Yes	Yes	Unclear	Unclear	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	76,9% Low-risk bias
Küçük DA and Aktaş YY (2019)	Yes	Yes	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	76,9% Low-risk bias

Note:
Q1-Q13 indicate questions 1 to 13 based on the JBI risk assessment for RCT
The risk of bias was ranked as high when the study reached up to 49% of "yes" scores, moderate when the study reached 50 to 69% of "yes" scores, and low when the study reached more than 70% of "yes" scores

Table 2. Analysis Data Systematic Review

No.	Title/Author/Year	Country	Objective	Design & Place	Technic Sampling	Data Retrieval	Measurements & Result
1.	**Title:** The effects of goldfish on anxiety, fear, psychological and emotional well-being of hospitalized children: A randomized controlled study **Author:**	Turkey	Knowing the effect of goldfish intervention on anxiety, fear, psychological and emotional well-being of children who are hospitalized	**Design:** Single-Center Randomized Controlled Experimental Study **Place:** East Turkey Mother and Child Hospital	The number of respondents was 112 using the G*Power calculation (3.1.9.2), divided into 2 groups: the intervention group (n=56) and the control group (n=56) Inclusion Criteria: -Children who are hospitalized for acute	-November 2020-August 2021 time -Preliminary study conducted on 10 respondents -The intervention group gave 1 tablespoon of goldfish in the aquarium. Feeding 2 times/day for 3 days	Measurement: -Statistical analysis using SPSS version 22 -Tests used: descriptive analysis, chi square test, t test and paired t-test, and GLM Results: -The average child

No.	Title/Author/Year	Country	Objective	Design & Place	Technic Sampling	Data Retrieval	Measurements & Result
	Sarman A and Gunay U[5] **Year:** 2023				illness, are treated for at least three days - Age 8-10 years -Not afraid of goldfish to be used - Not allergic to fish and fish food -Can read Exclusion criteria: -Diagnosis of physical, auditory, visual, and cognitive disabilities Randomization of respondents with the computer-based Domizer Research Ran program Instruments used -Anxiety assessment (STAIC/The State-Trait Anxiety Inventory for Children) -Fear assessment (CSF/Children's Fear Scale) -Welfare assessment (SCWBS/Stirling Children's Well-Being Scale)	-The control group followed standard procedures carried out in the hospital	anxiety score in the intervention group that cared for goldfish decreased significantly compared to the control group -When the two groups were compared, the difference between the post-test measurements was significant ($p < 0.05$) -The mean score of the fear scale on the post-test measurement of children in the intervention group was significantly lower than that of the control group ($p < 0.05$) -The mean emotional well-being and psychological mean scores of the children in the intervention group were higher than those in the control group ($p < 0.01$)
2.	**Title:** The Effects of Designing an Educational	Turkey	Investigate the effects of watching educational animated films of fear and pain	**Design:** RCT **Place:**	Number of respondents using G* Power (3.1), the number of samples is 132, divided into 3 groups:	- September 2017-September 2018 -Data collection 1-2 hours before surgery	Measurement: -Statistical analysis using IBM SPSS Statistics 25.0

No.	Title/Author/Year	Country	Objective	Design & Place	Technic Sampling	Data Retrieval	Measurements & Result
	Animation Movie in Virtual Reality on Preoperative Fear and Postoperative Pain in Pediatric Patients: A Randomized Controlled Trial **Author:** Binay Yaz S & Yilmaz H [19] **Year:** 2022		in children aged 6-12 years	Hospital Children's Surgery Clinic	Group 1 (control group n = 44); group 2 (animated films n=44); group 3 (documentaries n=44); Inclusion Criteria: -Age from 6-12 years old -Never had surgery -Can speak Turkish Exclusion criteria: -Have a genetic disease -Have a chronic disease -Have had surgery before Randomization using computerization Instruments used - Pain assessment Wong-Baker Faces (WB-Faces) - Child fear assessment (CFS)	and after surgery - Control group: by the standards in the hospital -Intervention group, educational animation films held 1-2 hours before surgery. The child uses virtual reality (VR) glasses to watch the process of the operation to be performed -The documentary film intervention group was carried out 1-2 hours before surgery Child using VR glasses. Child-watching with instrumental music. A spectacle about the forest, trees, and flowers	-Decriptive test, Kolmogorov-Smirnov and Shapiro-Wilk test, chi-square test, one-way ANOVA test (analysis of variance), Brunner-Langer model, Wilcoxon Signed-Rank test, Dunn's test, and Bonferroni correction, Kruskal Wallis test Results: - Significantly lower preoperative fear and postoperative pain in the educational animation group ($p<0.05$)
3.	**Title:** The effectiveness of finger puppet play in reducing fear of surgery in children undergoing elective surgery: A randomized controlled trial	Turkey	Knowing the effect of finger puppet games with parental involvement in fear surgery in children undergoing elective minor surgery	**Design:** Prospective RCT **Place:** In the operating room hospital	Number of respondents using G* Power (3.1.9.4) the number of samples is 70, divided into 2 groups: the intervention group (n=35) and the control group (n=35) Inclusion Criteria: - 5-10 years old children	-Data taken from June to September 2019 -In the control group according to the standards in the hospital -In the intervention group, they got hand puppet therapeutic games	Measurement: -Statistical analysis with IBM SPSS 23.0 -Descriptive analysis, Shapiro test, Mann-Whitney test, chi-square test, Wilcoxon Signed-Rank test Results:

No.	Title/Author/Year	Country	Objective	Design & Place	Technic Sampling	Data Retrieval	Measurements & Result
	Author: Akgün M, Kutman G, Semerci R [20] **Year:** 2021				-No history of surgery -No mental delay, verbal difficulty, hearing or vision impairment; -Do not have serious illness or disease (for example, heart disease) Exclusion criteria: - Children with emergency surgery Randomization using computerization, for odd numbers entered into the control group and even numbers entered into the intervention group Instruments used -Fear Assessment (CFS)	-The activity of playing hand puppets was carried out one hour before the operation until entering the operating room -Joint activities with parents	- The results showed that children in the finger puppet group reported significantly lower fear scores than those in the control group upon entering the operating room ($p < 0.001$), and in the postoperative period ($p < 0.001$). Proxy reports of parents and caregivers were also lower for children in the finger puppet group ($p < 0.05$)
4.	**Title:** The Effect of Music Therapy, Hand Massage, and Kaleidoscope Usage on Postoperative Nausea and Vomiting, Pain, Fear, and Stress in Children: A Randomized Controlled Trial **Author:** Bulut M, Alemdar DK, Bulut A and Gül Salcı	Turkey	Investigating the effects of music therapy, hand massage, and use of a kaleidoscope on nausea and vomiting, pain, fear, and stress in children aged 7 to 11 years after circumcision	**Design:** Prospective RCT **Place:** Hospital surgery room	Number of respondents using G* Power (3.1.9.2), the number of samples is 140, divided into 4 groups: Group 1 (control group n=35); group 2 (received hand massage n=35); group 3 (using a kaleidoscope n=35); group 4 (music therapy n=35) Inclusion Criteria: -Age 7-11 years -Be able to speak -General anesthesia -No congenital urological abnormalities	- Control group: received routine care at the postoperative clinic. Levels of pain, nausea, anxiety, and fear the children were evaluated by the researcher 15 minutes before surgery, 30 minutes after surgery, and finally 2 hours after surgery -Group 2, massage therapy	Measurement: -Statistical analysis with IBM SPSS 21.0 -Frequency distribution analysis, Shapiro Wilk test, one- way analysis of variance (ANOVA), Bonferroni test Results: - The kaleidoscope group and the music group felt less pain after the intervention (after

No.	Title/Author/Year	Country	Objective	Design & Place	Technic Sampling	Data Retrieval	Measurements & Result
	[21] **Year:** 2020				-No history of postoperative nausea and vomiting Exclusion criteria: - Randomization using computerization Instruments used - Picture nausea assessment: Baxter Animated Retching Faces (BARF) - Wong-Baker FACES pain assessment (WB-FACES) - Fear assessment (CFS) - Anxiety assessment: Yale Preoperative Anxiety Scale (mYPAS)	The hand massage continues for 20 minutes with an interval of 20 minutes. The massage session lasted a total 20 minutes, 10 minutes for each hand -Group 3, soft music therapy for 20 minutes every 20 minutes, performed after returning to the room from the operating room -Group 4 kaleidoscope therapy distraction applications were applied for 20 minutes at intervals 20 minutes -Total intervention time 1 hour	30 minutes and after 2 hours) (P < 0.05) - Kaleidoscope group; the fear of the children in this group was reduced after the intervention (after 30 minutes and after 2 hours; P < 0.05) - There is no difference in each group in terms preoperative and postoperative nausea rates (after 30 min and after 2 hours; P > 0.05) - Kaleidoscope group (after 30 minutes and after 2 hours), the children in this group had lower levels of postoperative anxiety (P<0.05)
5.	**Title:** The Effects of Cartoon-Assisted Endoscopy Preparation Package on Children's Fear and Anxiety Levels and Parental Satisfaction in Turkey **Author:**	Turkey	To determine the effect of a cartoon-assisted preparation package developed for children undergoing endoscopy procedures on the level of child fear and anxiety and the level of parental satisfaction	**Design:** RCT **Place:** Hospital endoscopy unit	Number of respondents 65, divided into 2 groups: Group 1 (control group n=32); group 2 (intervention group n=33) Inclusion Criteria: - 7-12 years old - Accompanied by his parents	-April 2018-July 2019 -Control group: by the standards in the hospital -Intervention group, an endoscopic cartoon package was carried out including an endocan model, giving a pillow with an endocan model	Measurement: -Demographic data, Chi-Square test, independent group t-test, Mann Whitney-U test, analysis of variance for dependent group (LSD as follow-up analysis), Friedman test, Pearson

No.	Title/Author/Year	Country	Objective	Design & Place	Technic Sampling	Data Retrieval	Measurements & Result
	Köse S and Arıkan D [22] **Year:** 2020				-Have no mental, visual, hearing, or communication impairments, and have not previously had an endoscopy Exclusion criteria: - Randomization by stratification and block scrambling method Instruments used - Anxiety assessment (STAIC) -Fear Assessment (CFS) -Parent satisfaction assessment (NSNS)	printed on it, showing cartoon films related to the endoscopy process, and installing posters related to endoscopy -Physiological examination, anxiety, fear, and satisfaction of parents before and after endoscopy	correlation analysis, Spearman correlation analysis, logistic regression analysis Results: -The mean fear score of children in the intervention group was 3.39 ± 0.56 before endoscopy, 1.67 ± 0.54 during endoscopy, and 0.52 ± 0.67 after endoscopy, with significant differences in mean -The mean fear score in the control group was 3.00 ± 0.80 before endoscopy, 3.13 ± 0.79 during endoscopy, and 2.25 ± 1.16 after endoscopy, with a significant difference in mean -Children's anxiety score was 33.79 ± 4.00 in the intervention group and 36.56 ± 3.52 in the control group before endoscopy, and the difference between anxiety scores was statistically

No.	Title/Author/Year	Country	Objective	Design & Place	Technic Sampling	Data Retrieval	Measurements & Result
							significant ($p < 0.05$) -The average parental satisfaction score in the experimental group after endoscopy (78.44 ± 10.01) was higher than the control group (73.52 ± 12.92)
6.	**Title:** The Use of the Buzzy, Jet Lidokaine, Bubble-blowing and Aromatherapy for Reducing Pediatric Pain, Stress and Fear Associated with Phlebotomy **Author:** Alemdar DK and Aktas, YY [23] **Year:** 2019	Turkey	Investigating the thermomechanical effects of "Buzzy", lidocaine jets, blowing bubbles, and inhalation of aromatherapy with lavender essence on pain, stress, and fear in children undergoing blood draws at the hospital	**Design:** Prospektif RCT **Place:** Mother and Child Lab Unit at Turkey Hospital	Calculation of the number of respondents with G* Power (v3.1.9.2), the 192 are divided into 5 groups, Group 1 (control group n = 39), group 2 (Lidocaine jet n=39), group 3 (Blowing balloon n=39), group 4 (Thermomechanical buzzy n=39), and group 5 (inhalation aromatherapy n=39) Inclusion criteria: -Children aged 5-10 years -Requires a blood test -Accompanied by parents Exclusion criteria: -Got another local anesthetic -Experiencing irritation in the stabbing area -GSC <15 or hemodynamically unstable	-Time May 2016-Sept 2017 -Children have been divided into 5 groups -Parents accompany -Activities at 9-12 -Blood collection is performed by an experienced pediatric nurse -Children are assessed for fear and pain before (30-60 seconds), during, and after taking blood (1-3 minutes). -Parents assessed about the child's distress before (30-60 seconds), during, and after blood collection (1-3 minutes) -Children's saliva samples were taken 5 minutes before and 25 minutes after the blood collection	Measurement: -Statistical analysis using SPSS version 21 -Frequency distribution analysis, (RM-ANOVA), measurement of saliva (One-way ANOVA) Results: -None had a significant effect on factors that could potentially affect pain, fear (gender, age, BMI, previous blood sampling experience, and previous hospitalization) in children with blood sampling (p value > 0.05) -Buzzy group, children felt minimal pain ($p<0.05$) during and after the process

No.	Title/Author/Year	Country	Objective	Design & Place	Technic Sampling	Data Retrieval	Measurements & Result
					-Have a chronic disease Instruments used: -Fear assessment (CSF) -Pain assessment (Oucher Pain Scale) -Parent Perception (PRCD)	process -Lidocaine is administered with the device (lidocaine jet) one minute before the blood draw -The use of a thermomechanical "Buzzy" with the image of a bee is used with a vibrating and cold sensation placed on the skin or connected to a tourniquet which is placed 3-5 cm above the puncture area. Giving "Buzzy" 30-60 seconds before the end of blood collection -Bubble-blowing begins with a deep breath and then blows the soapy liquid to form a balloon. This process is carried out 1 minute before blood collection -Provide lavender steam which is placed in a heated 20 cc glass cup and the steam is inhaled by the child at a distance of 10 cm	-Bubble blowing group, fear of children decreased before the process ($p<0.05$) -Buzzy group, fear of children decreased during the process ($p<0.05$) -Evaluation of parents' perception of child's distress, there is no significant effect before, during, and after the process ($p> 0.05$) -The cortisol level of children in the intervention group was lower than that of the control group, but the difference was not significant ($p>0.05$)

No.	Title/Author/Year	Country	Objective	Design & Place	Technic Sampling	Data Retrieval	Measurements & Result
						from the child's nose. Mix 1 drop of lavender in 20 cc of distilled water, take 5 cc to be placed in a 20 cc glass cup. Giving the steam 5 minutes before taking blood until 5 minutes after -The control group received no other interventions, only the usual routine procedures	

RESULTS

Characteristic Article

Six articles were included in the review process. The review process is depicted in Figure 1. The articles used were published in 2019-2023. All articles come from Turkey and have an RCT design. All articles in this study were conducted in a hospital setting. There was one study in the pediatric inpatient room, two in the pediatric surgery room, one in the operating room, one in the endoscopy unit, and one in the laboratory room (see Table 2). The intervention carried out in the research was therapeutic play pediatric inpatient room, two studies in the pediatric surgery room, one study in the operating room, one study in the endoscopy unit, and one study in the laboratory room (see Table 2). The intervention carried out in the research was therapeutic play.

Characteristic Respondent

The ages of most respondents were preschool and school age between 5-12 years (100%). The majority of research involves respondents of school age. The highest number of participants was 156 children [24] and the lowest number of participants was 65 children.[25] The total number of respondents was 675 children.

Characteristic Therapeutic Play

The therapeutic play carried out in this research included several actions, namely using goldfish media[5]; designing an educational animation movie in virtual reality [23]; finger puppet play [24]; music therapy, hand massage, and kaleidoscope usage [25]; cartoon-assisted endoscopy preparation package [26]; and use of the buzzy, jet lidocaine, bubble-blowing and aromatherapy [23].
The duration of the research varies. Giving goldfish food is 1 tablespoon 2x/day for 3 days [4]. Watching educational animations is carried out 1-2 hours before surgery and after surgery [19]. Finger puppet play therapy is carried out one hour before surgery until entering the operating room[20]. The total intervention of music therapy, hand massage, and kaleidoscope is 1 hour.[21] Preparation package cartoon-assisted endoscopy before and after endoscopy.[22] Giving "buzzy" 30-60 seconds before the blood draw ends; lidocaine is administered with a device (lidocaine jet) one minute before blood collection; Blowing bubbles begins with taking a deep breath and then blowing the liquid soap to form a balloon. This process is carried out 1 minute before blood collection; administering aromatherapy steam 5 minutes before blood collection until 5 minutes after.[19] Findings reducing the impact of hospitalization with therapeutic play in Table 3

Table 3. Findings Reducing The Impact of Hospitalization with Therapeutic Play

Reducing The Impact of Hospitalization	Number of Studies (f)	Significant Effect f (%)	No Significant Effect f (%)
Anxiety (decrease)	3	3 (100)	
Fear (decrease)			
-Process operation	2	1(50)	1(50)
-Phlebotomy	2	2 (100)	
-Entering the surgery room	1	1(100)	
-Process endoscopy	1	1(100)	
Pain (decrease)			
-Pasca operation	2	2(100)	
-Proses phlebotomy	1	1(100)	
Emotional and psychological well-being (increase)	1	1(100)	
Vomiting and nausea post-operation			1

Reducing the impact of hospitalization: in the six articles reviewed, there were results that the implementation of therapeutic play had an impact on anxiety, fear, pain, emotional and psychological well-being, nausea and vomiting scores.

Anxiety: three of six articles reviewed (50%) described that therapeutic play can reduce anxiety. The average anxiety score of children treated with therapeutic play using goldfish decreased significantly compared to the control group ($p<0.05$) [5]. Therapeutic play research using kaleidoscope media showed that there was a significant difference between the level of post-operative anxiety in the intervention and control groups after the intervention ($P <0.05$) [21]. Therapeutic play research using cartoon package media for endoscopy significantly reduced anxiety scores compared to the control group ($p<0.05$) [22].

Fear: the six articles reviewed (100%) showed that therapeutic play can reduce fear scores in children. Therapeutic play with goldfish therapy showed that the average fear score in the post-test measurement of study group children was significantly lower than that of the control group ($p <0.05$) [5]. Preoperative fear was significantly lower in the group watching educational animated films compared to other groups (watching documentaries and control groups) [19].

The results showed that children in the finger puppet group reported significantly lower fear scores than those in the control group when entering the operating room ($p < 0.001$), and in the postoperative period ($p < 0.001$). However, children's preoperative fear scores did not show statistical differences between groups ($p > 0.05$).[20] There was a significant difference between the level of post-operative fear of the intervention and control groups using kaleidoscope media after the intervention ($p <0.05$).[21]

The average fear scores of children in the intervention group before endoscopy, during endoscopy, and after endoscopy had a significant average difference compared to the control group.[22] There was a significant difference between children's fear scores with bubble-blowing media in the intervention and control groups before phlebotomy ($p <0.05$). There was a significant difference between the fear levels of the intervention and control groups in favor of the buzzy group during phlebotomy ($p < 0.05$).[23]

Pain: three of the six articles reviewed (50%) showed that therapeutic play could reduce pain scores. Postoperative pain scores were significantly lower in the group that used educational animated film media in therapeutic play [19]. There was a significant difference between the postoperative pain scores of children in the intervention and control groups after intervention ($p < 0.05$) using music therapy media and the kaleidoscope method [21]. The significant difference in pain reduction between the intervention and control groups during and after phlebotomy with buzzy media ($p < 0.05$).[23]

Emotional and psychological well-being: one of the six articles reviewed (16.67%) showed that the average scale of emotional and psychological well-being in the group with goldfish media was higher than in the control group ($p < 0.01$).[5]

Post-operation vomiting and nausea: one of the six articles reviewed (16.67%) indicated that no significant differences were found between groups of children in the rate of postoperative vomiting and nausea after the intervention ($P > 0.05$).[21]

DISCUSSION

Based on the results of a systematic review conducted, the researcher uses the results of publications with articles from the last 5 years to be used at this time. Good articles use relevant references (according to the topic, method, and area discussed), up-to-date (at least the last 5 years), and correct (according to correct rules and citations).[28] Most of the articles reviewed came from Turkey, this was based on database searches with the keywords therapeutic play, children/pediatric/child, hospitalization/hospitalize. All articles are by the RCT experimental design. All articles are interventions from therapeutic play by the objectives of the systematic review carried out. The characteristics of respondents are in preschool and school age, most of them are aged 5-12 years.

This systematic review describes the types and benefits of therapeutic play carried out on children undergoing care and treatment in hospitals, both outpatient and inpatient. Goldfish therapy is an intervention that uses ornamental fish as a medium for therapeutic play. The child gives food to the goldfish in the aquarium. Children can interact with the goldfish when giving it food and can look at the goldfish. The results of the study showed a reduction in levels of anxiety and fear as well as an increase in the level of children's physiological and emotional well-being.[5]

This research is in line with the use of pet dogs as a medium for therapeutic play in children who are hospitalized. Children can interact with dogs for 5-10 minutes. The results of the study showed that there was a decrease in cortisol levels and increased children's mood and activity.[29] Most of the children's activities involves playing which is an important aspect and a necessity in their life.[25]

Therapeutic play by watching educational animated films in virtual reality was found to be the most effective method in reducing preoperative fear and postoperative pain. Educational animated films are effective in reducing children's fear and pain in preparation for surgery, increasing the effectiveness of children's education and cooperation [23]. This research is in line with virtual reality methods implemented on pediatric patients when undergoing invasive procedures that are more effective in reducing anxiety and pain compared to patients who receive standard care. [30]

Therapeutic play using finger puppets is effective in reducing fear in children who will undergo minor surgery.[28] This research is in line with the use of finger puppets can reduce post-operative pain. Dolls are used as part of children's play activities in hospitals. Dolls act as a supporting factor for children who suffer from both acute and chronic illnesses. Children can express their feelings through puppets.[31]

Music and kaleidoscope therapy are effective in reducing pain, fear and anxiety in children who will undergo circumcision.[21] Other research states that cheerful music therapy is more effective in reducing hospitalization anxiety in toddlers compared to storytelling.[28] Music therapy significantly reduces anxiety in children who will undergo surgery and causes a stable heart rate [29].Kaleidoscope therapeutic play has also been proven to be effective in reducing pain responses and behavior in children during intravenous insertion.[30]

Therapeutic play with cartoon packages has been proven to reduce the fear and anxiety of children undergoing endoscopy [22]. Other research also proves that watching cartoon films can reduce the level of fear in children when undergoing inhalation therapy compared to using picture-guessing card games. Children become more relaxed and comfortable during inhalation.[31]

"Buzzy" and bubble-blowing thermomechanical therapy has been proven to be effective in reducing pain and fear in children undergoing blood sampling [23]. The use of buzzy media has been proven to be effective in reducing pain in children who will have blood drawn. The child's attention shifts to the buzzy device attached to the hand [32]. The use of bubble-blowing when children undergo dental care has been proven to be more cooperative and a medium of distraction for children.[33]

CONCLUSION

Based on the results of the systematic reviews that have been carried out, therapeutic play can bring significant benefits to children. The benefits of therapeutic play in children are reducing anxiety levels, reducing fear, reducing pain, and increasing the level of psychological and emotional well-being of children. Therapeutic play that can be done for children undergoing treatment in a hospital is therapy: goldfish, animated educational films, finger puppets, music and kaleidoscopes, cartoon packages, buzzy thermomechanics, and soap bubbles. Recommendation: Therapeutic play can be implemented in children undergoing hospitalization. Other therapeutic play research can be carried out to further increase the types of therapeutic play that can be applied in hospitals. Therapeutic play is expected to become a policy that can be implemented according to the condition of sick children in the hospital.

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