

Impact of Puzzle Playing Therapy on Anxiety Levels Among Patients in the St. Theresia Room at St. Elisabeth Hospital in Medan

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Abstract: Introduction: Anxiety is the most frequently observed response in children during their hospitalization. Puzzle play therapy refers to a therapeutic activity that involves children engaging in the process of assembling fragmented pieces to construct a complete picture or to finish a given written task. The purpose of this study is to evaluate the impact of puzzle play therapy on the reduction of anxiety levels among children. Method: This study adopted a pre-experimental design, specifically employing a one-group pretest-posttest approach. The population of the study comprised all pediatric patients aged between 3 and 6 years who were admitted to the hospital. Purposive sampling was used to select a total of 32 participants. The data was collected using a questionnaire as the research instrument. Result: The study's findings revealed that the mean pre-test anxiety score was 25.28, with a standard deviation of 7.040. In comparison, the mean post-test anxiety score was 19.19, with a standard deviation of 4.254. The statistical analysis conducted using the Wilcoxon test showed a q value of 0.000 ($p < 0.05$), which indicates a statistically significant reduction in anxiety levels following the intervention of puzzle play therapy.

Keywords: Anxiety Level; Anxiety Reduction; Impact; Pediatric Patients; Puzzle Play Therapy.

1. Introduction

According to Goodwin (2023), anxiety can be defined as worry about future events or about something with uncertain outcomes, or as an uncomfortable concern about a person, situation, or other condition. Anxiety that is centered on upcoming events causes worry about what is happening in the present.

According to Freeman in Goodwin (2023), anxiety arises from the way we think and speak, such as worrying about a problem or expressing fear or concern; from the way we behave, such as avoiding certain situations or being constantly alert to problems; from physical changes, such as increased heart rate or faster breathing; and from facial expressions.

An initial survey conducted on January 15, 2024, with child patients and their parents in the St. Theresia ward of Santa Elisabeth Hospital Medan, involving 17 respondents, revealed that 12 children experienced mild anxiety and 5 children experienced severe anxiety. The severe anxiety was marked by frequent crying and screaming when approached by nurses, crying when parents left the room, crying upon waking, inability to remain calm during medical examinations due to fear, and reluctance to answer doctors' and nurses' questions (RSE, 2024).

According to Delvecchio et al. (2019), One of the factors that contributes to anxiety in children is hospitalization. Children and infants often face unfamiliar and challenging experiences when they are admitted to the hospital. Being in a hospital requires them to leave their homes, siblings, or caregivers, which disrupts their usual routines and daily activities.

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Furthermore, hospitals are typically perceived as cold and clinical environments, associated with pain, uncertainty, fear of medical procedures, and a loss of control and a sense of safety. This is especially true for preschool and elementary school children, who are in critical stages of mental, emotional, and social development.

2. Literature Review

According to Godino et al. (2020), hospitalization can be viewed as a traumatic experience by children, which may impact their emotional development as they are removed from their familiar surroundings and family support. During their stay, children may display a range of negative emotions and behaviors, such as stress, fear, anxiety, pain, insecurity, and uncertainty. These experiences are perceived as traumatic and can interfere with their emotional growth. Burns Nader, as cited in Delvecchio et al. (2019), highlights the importance of psychological assessments to identify stress, anxiety, coping mechanisms, and play skills in order to deliver age-appropriate interventions that meet the unique needs of children in medical settings.

Play therapy can be used to alleviate children's anxiety. Since children often experience uncomfortable emotions such as anger, fear, anxiety, and pain, play therapy can serve as a distraction from these feelings and offer an opportunity for enjoyment through play. As they continue to grow and develop, children tend to become more active, creative, and imaginative. (Israeli et al., 2020).

Play is a child's daily activity, or their "work." It is one of the most impactful methods for reducing anxiety from an early age. Sick children need play to fill their lonely time and to ease the anxiety caused by hospitalization. Play helps them express their thoughts and emotions. Children and their families face significant stress and challenges in adjusting to illness and hospitalization (Lanjekar et al., 2022).

According to Dini R. et al. (2020), puzzle games, which require perseverance and patience, help children learn more about the world around them. This type of game can be played individually or in groups, where children interact with one another to solve puzzles. Some of these games are not only fun but also educational. Thus, puzzles enhance children's motor skills and can be used as therapeutic play. By solving puzzles, children can reduce their anxiety (Israeli et al., 2020). In this thesis, the author will use puzzle play therapy to reduce children's anxiety during hospitalization.

3. Materials and Method

A pre-experimental study with a One group pre-test – post-test design approach. This study was conducted in the Santa Theresia room in April-May 2024. Sample technique in this study was purposive with inclusion criteria of patients aged 3-6 years, patients with compos mentis consciousness, patients who have been treated for at least 1 day, and the general condition of the patient allows them to participate in play activities. So the minimum sample size in this study is 32 people based on sample calculations using the Vincent formula. The instrument used in this study is the independent variable will use the SOP of puzzle play therapy adopted from Play Therapy (Rohmah, 2018), on the dependent variable using the Instrument to measure anxiety in children using the Spence Children Anxiety Scale (Parent Report) questionnaire and modified by Saputro, H (2017) in the book *Sick Children Must Play in the Hospital* (Saputro & Fazrin, 2017). This puzzle play therapy intervention will be given for 10 minutes with each patient will be given a puzzle game that has been randomized and will be reassembled by the respondent, with the provision of intervention on the first and third days with a break on the second day. The statistical test used in this case the researcher uses the Wilcoxon test.

The author will conduct an ethical test of the research thesis to test the feasibility of the research thesis and then obtain a research permit at Santa Elisabeth College of Health Sciences Medan Year 2024 No.081/KEPK-SE/PE-DT/IV/2024.

4. Results and Discussion

Table 1. Distribution of respondents based on patient demographic data in the Santa Theresia room.

Characteristics	f	%
Gender		
Man	22	68,8
Woman	10	31,3
Age		
3 year	6	18,8
4	5	15,6
5	9	28,1
6	12	37,5
Treatment Experience		
Ever	25	78,1
Never	7	21,9
Total	32	100,0

Table 1 shows Meanwhile, when reviewed based on distribution data, frequency and percentage of respondent demographic data based on the category of treatment experience, the most were the category of having been previously hospitalized as many as 25 people (78.1%) and the category of never been hospitalized before as many as 7 people (21.9%).

Table 2. Distribution of respondents based on the anxiety level of pre-intervention patients of puzzle play therapy in the Santa Theresia room.

Anxiety levels	N	\bar{x}	M	SD	Min-Max	95%CI
Pre Intervention	32	25,28	25,50	7,040	16-45	22,74-27,82

Table 2 shows average patient anxiety level before the puzzle play therapy intervention was 19.19, with a standard deviation of 4.254, a min anxiety score of 15 and a maximum anxiety score of 31. The results of the 95% interval estimate are believed that the respondents' anxiety before the intervention is in the range of 17.65-20.72.

Table 3. Distribution of respondents based on patient anxiety levels *Post* Intervention Therapy Playing *Puzzle* in the Santa Theresia Room.

Anxiety levels	N	\bar{x}	M	SD	Min-Max	95%CI
Post-Intervention	32	19,19	18,00	4,254	15-31	17,65-20,72

Table 3 shows that the average level of anxiety patients after the puzzle play therapy intervention was 19.19, with a standard deviation of 4.254, a minimum anxiety score of 15 and a maximum anxiety score of 31. The results of the 95% interval estimate are believed that the respondents' anxiety before the intervention is in the range of 17.65-20.72.

Table 4. Distribution Impact of *Puzzle* Play Therapy on Patients' Anxiety Levels.

Anxiety levels	N	\bar{x}	SD	Min	Max	ρ Value
Before Intervention	32	25.28	7,040	16	45	0,000
After Intervention	32	19.19	4,254	15	31	

Table 4 presents the results of the anxiety levels before and after the intervention of puzzle play therapy. A score was obtained using the Wilcoxon Sign Rank Test, which showed a p-value of 0.000 ($p < 0.05$).

5. Discussions

The level of anxiety pre-intervention participants

Researchers assume that hospitalization, especially in pediatric patients, always experiences different reactions. From the results obtained by the researchers, patients tended to experience anxiety before being given puzzle play therapy, shown by the patient's reactions in the form of crying easily, fear, difficulty sleeping, tension, and weakness easily. Anxiety in patients arises due to several factors, including separation from family and friends, loss of control, being in an unfamiliar environment and receiving examinations or treatments, thus making the patient uncooperative and anxious.

Researchers assume that some of the factors that cause anxiety in preschoolers include the hospital environment and the child's treatment experience. Children who had never been hospitalized had anxiety and difficulty interacting with their environment compared to children who had been hospitalized who had lower anxiety. Children will experience trauma and fear if they have unpleasant experiences during hospital treatment, on the contrary, if children have a good and pleasant experience, they will be more cooperative.

Robby et al., (2019), Robby et al., (2019), stated that children will exhibit various behaviors in reaction to the hospitalization experience. Preschoolers are not yet able to accept the unfamiliar perception of illness and the hospital environment. The experience of children who have never been hospitalized makes children unable to express themselves with their environment so that children will tend to experience anxiety, The findings from this study's analysis indicate that the average duration of hospitalization for the intervention group was two days, whereas the control group was treated for up to three days. In terms of anxiety levels, the results showed that children who received treatment on the first or second day exhibited higher anxiety scores than those who were treated for three days.

Level of anxiety of post-intervention therapy participants playing puzzles

Researchers believe that play therapy is impactive in helping children deal with anxiety. Both healthy and ill children enjoy playing, and the need to play does not disappear even when a child is sick. The study found that children's anxiety levels went down after they received puzzle-based play therapy. This was shown through the child becoming more cooperative, better at communicating, and more willing to adapt to new surroundings. Playing puzzles helps children shift their focus away from the discomfort of treatment, allowing them to fulfill their need for play and creativity. During play, the adrenal glands release substances that can lower stress hormones like cortisol and improve blood flow to the brain, which in turn can help reduce anxiety.

Purnamasari et al (2021), Children who receive treatment on the first and second days are more likely to experience anxiety, and offering 35 minutes of puzzle play therapy can help reduce their anxiety levels. Play activities have the ability to distract children. When they play, they can distract themselves from pain or anxiety. Puzzle therapy is also one way for children to overcome emotional problems such as anxiety. It is also one way to reduce the stress and trauma caused by the hospitalization process. This suggests that playing puzzles can help reduce anxiety in hospitalized preschoolers (ages 3-6).

Researchers assume that puzzles are games in which children put pieces together to form a predetermined image or text. Puzzles offer a range of colors that help draw children's attention and make learning more engaging, which in turn helps build their patience and persistence in learning. They serve as an essential tool for children, as the pieces can be easily misplaced and require careful handling to avoid errors. Playing with puzzles also supports the development of children's memory skills. Through puzzle play, children can fulfill their need for entertainment and creativity, which can help them cope with the discomfort of medical treatments.

Satriana et al., (2023) highlight that play provides a form of distraction and relaxation, allowing children to express their emotions freely and act as a buffer against stress. Play enables children to manage difficult experiences, treatments, and procedures more impactively. It is hoped that this type of play can help reduce negative behaviors such as aggression and regression in hospitalized children, making them more willing to cooperate with medical care. A supportive and calming hospital environment, including factors like comfort and limited visitor access, also plays a key role in making therapy sessions more impactful by creating a peaceful and reassuring atmosphere.

Impact puzzle therapy on the anxiety level of Pre and Post Intervention patients

The findings from Wilcoxon's statistical test indicated that the p-value was 0.000 ($p < 0.005$) showed that the results of the 32 respondents, namely during the pre-test, obtained an average level of anxiety of the respondents of 25.28 while at the time of the post-test The average anxiety level of the respondents was 19.19 with an average anxiety difference of 06.09, which means that there is an impact before and after the implementation of puzzle play therapy on the level of anxiety of patients in the Santa Theresia room.

Researchers assume that puzzle play therapy has an impact on patients' anxiety levels. Based on the results of anxiety measurement using a questionnaire conducted by the researcher, patients who underwent hospitalization before being given puzzle play therapy showed that the patient's attitude appeared restless, tense, crying out of fear, and uncooperative with doctors or nurses when actions were taken. By playing puzzles, children can concentrate and improve their memory. Children are taught to remember the position of each puzzle piece in order to achieve the correct arrangement through playing puzzles. After receiving play therapy, patients can divert their attention from the discomfort caused by the treatment by engaging in puzzles, which fulfills their need for play and creativity.

According to Eva et al. (2023), puzzle games have a distracting impact on children, allowing them to focus more on the games rather than the anxiety they experience. Puzzle-based play therapy significantly helps in reducing anxiety levels in preschoolers during hospital stays. This means that puzzle therapy is able to distract children from the discomfort caused by hospitalization

Researchers assume that hospitalization is perceived by children as something that deprives children of their freedom and autonomy. When children are hospitalized before receiving therapy, they often experience anxiety. This is because children perceive hospital treatment as punishment, which makes them feel ashamed, guilty, anxious, and afraid. In situations like this, children can get the right approach to play to reduce trauma. By playing, the child will be distracted by activities such as puzzle play therapy. Finarti et al., (2019), The findings from this puzzle play therapy study demonstrate that engaging in puzzle play as a

form of therapy significantly helps in reducing anxiety levels in preschool children who are hospitalized. Playing with puzzles as a therapeutic activity is highly beneficial in alleviating children's worries, as it demands patience and persistence from them. Over time, this process helps children develop a more calm, persistent, and patient mindset when dealing with challenges and solving problems. Finarti et al., (2019), The findings from this puzzle play therapy study demonstrate that engaging in puzzle play as a form of therapy significantly helps in reducing anxiety levels in preschool children who are hospitalized. Playing with puzzles as a therapeutic activity is highly beneficial in alleviating children's worries, as it demands patience and persistence from them. Over time, this process helps children develop a more calm, persistent, and patient mindset when dealing with challenges and solving problems.

6. Conclusion

Based on the findings from the research involving 32 participants, the impact of puzzle play therapy on the anxiety levels of patients in the Santa Theresia Room was assessed. The results indicate that prior to the intervention, the average anxiety level was 25.28 with a standard deviation of 7.040, and a 95% confidence interval ranging from 22.74 to 27.82. After the intervention, the average anxiety level decreased to 19.19, with a standard deviation of 4.254 and a 95% confidence interval between 17.65 and 20.72. There was a noticeable difference in anxiety levels before and after the therapy, suggesting that puzzle play therapy has a significant effect in reducing patient anxiety, as indicated by a p-value of 0.000. It is hoped that future researchers can conduct further research on the factors that influence satisfaction as research considerations.

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