The Effect of Building Block Therapeutic Play Program on Preschooler's Anxiety Levels in Indonesia

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Abstract. Background: Hospitalization can be stressful for children and results in varied reactions, including refusal to cooperate with health workers. Treatment and hospitalization can result in psychological issues such as fear, anger, pain, and anxiety. Anxiety interferes with children's growth and development. Games like building blocks can divert a child's attention away from negative emotions.

Aim: This study aimed to see how building block therapeutic play program can affects anxiety in hospitalized preschoolers.

Method: This study was quasi-experimental, observing anxiety levels before and after playing with building blocks. The intervention and control groups both had 20 children. The instrument classifies anxiety into four levels: mild anxiety, moderately anxious, anxious, and panicking.

Results: Before the intervention, 70% were classified as anxious, and in the control group, 45% of children were anxious. After therapeutic play, 65% of the intervention group showed only mild anxiety, while the control group's anxiety level had increased to classified as moderate anxious (50%). Results were significant (p-value $= 0.00 < 0.05$) for the intervention group but not for the control group ($p = 0.915$).

Conclusion: As a result, it is possible to conclude that playing with building blocks reduces anxiety in preschoolers. Accordingly, the study recommends that nurses should provide building block therapeutic play program for preschoolers to reduce anxiety caused by hospitalization.

Keywords: Therapeutic Building Block Game · Anxiety · Hospitalization · Children

1 Introduction

The number of children admitted to hospitals is growing [1]. According to the United Nations Children's Fund, 84% of children in 2012 received hospital care (as inpatients and outpatients) [2]. According to data from Indonesia's Central Statistics Agency, the percentage of children showing signs of illness was 43.6% in 2020, with nearly 16%

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requiring hospitalization, a 13% increase from the previous year [3]. More than 45% of all children would be afflicted with disease and illness, with symptoms such as cough, fever, diarrhea, nausea, and vomiting [4]. According to the Ministry of Health of the Republic of Indonesia, were diagnosed with a health condition in 2015, along with 25.8% of children age 3 to 5 years, revealing that preschool aged children are most likely to get sick as their immune system develops [5].

Preschoolers are children who have an age range of 3–6 years [6]. During the preschool period, children begin to attend preschool programs and play together with neighborhood peers, exposing them to pathogens while their immune systems are developing. The activities of preschool-age children will increase so that they often tire themselves out and are susceptible to disease [7]. The decrease in the child's immune system also causes the child to be susceptible to disease [8]. Whether planned or unplanned, hospitalization is a crisis for children [9]. Furthermore, changes in daily routines can contribute to children's fear and anxiety during hospitalization [10]. Despite rapid advances in science and technology in diagnosing and treating childhood illnesses, frequent therapeutic interventions for sick children can result in trauma, pain, anger, anxiety, and fear [11]. In Indonesia, it was reported in 2018 that approximately 57% of children hospitalized experienced anxiety, which has since increased to 63% in 2019 [4].

Anxiety is a feeling of fear and worry that the reason is unclear [1]. Separation anxiety is the most significant stress from the impact of hospitalization during early childhood [12, 13]. Anxiety can not be interpreted directly as a disease but as a symptom [14]. Children will exhibit many stages of separation anxiety, although their behavior is generally more subtle and passive [15]. Children show anxiety by refusing to eat, having trouble sleeping, crying, withdrawing from others, and refusing to cooperate during self-care activities [16]. According to a cohort study, 93% of the children felt pain on the second day after leaving the hospital, and 73% showed negative emotional manifestations related to anxiety. The study also discovered that in the fourth week following hospital discharge, 25% of participants still reported feeling pain, and 32% demonstrated negative emotional manifestations [17]. Nurses must be sensitive to signs of anxiety due to the less tangible separation to provide appropriate interventions [18].

Playing is essential to children's development of their sensory, motor, and cognitive systems because it satisfies their fundamental need to play and fulfills their intrinsic desire to participate in their environment [19]. Giving therapeutic play to children increases cooperative attitudes while the child is hospitalized [20]. When children play, they express some of their feelings, such as frustration, hostility, and aggression, without fear of medical personnel [20]. Children get the chance to express themselves through play. Play helps in communication, expansion of social relationships, and communal understanding [21]. Children also get joy and pleasure, making them more cooperative towards intervention or treatment actions during hospitalization. This playing program requires the participation of families and nurses in the treatment [22].

The choice of building block therapeutic play program is because it is a relaxation and a distraction to preschoolers' anxiety [23]. According to the most important developmental tasks in preschoolers, namely the development of their fine motor skills, children need age-appropriate stimulation in order to reach and progress through the stages of development and growth optimally [24]. Following the play development stage for children aged 3–6 years, the game that can be done is building block therapeutic play program. The children will design something in this game, specifically a building, using the given game tools. Some examples are constructing buildings, drawing, arranging wooden pieces with pictures, and making shapes out of plasticine [25]. Because the building block therapeutic play program does not demand much energy to play, it does not interfere with the child's health recovery process. As a result, this playing program can boost enjoyment and satisfaction while reducing anxiety caused by hospitalization [26].

The preliminary study results showed that according to the head nurse of the children's ward at Ismail II Roemani Hospital of Semarang and researchers, hospitalized children often experienced anxiety, which was marked by crying and fear of medical personnel, feeling depressed, and anger. From September 2015 to November 2015, 234 patients were treated in the Ismail II room at Roemani Hospital of Semarang, with 92 toddlers and 142 preschoolers. The Ismail room at Roemani Hospital in Semarang has more than 50%, anxious children. Unfortunately, Roemani Hospital of Semarang has never researched play therapy using children's equipment like building blocks.

2 Method

This study is a quasi-experimental study with a pre-post-test design with a control group, with building block therapeutic play program treatment for preschool-aged children during hospitalization. The sample in this study was preschool children aged 2 to 6 years who underwent hospitalization in a sample area of 40 respondents (20 respondents in the intervention group, 20 respondents in the control group); with a purposive sampling method, the study was conducted in the Ismail II room at Roemani Hospital of Semarang. The data collection tool used was an Taylor's Manifest Anxiety Scale (T-MAS) includes 34 observations checklist developed, with yes (score 1) and no (score 0) responses. Researchers ensured validity by developing instruments to measure the aspects based on the hypothesis of child anxiety during hospitalization and then consulting with the supervisor/expert. In terms of the reliability test, the result was 0.89. The research lasted one month, from January 25, 2016, to February 25, 2016. Data were analyzed by univariate and bivariate (Paired t-test and t-independent test).

3 Results

The majority of medical diagnoses behind the treatment of children were typhoid, 40% in the intervention group, and Febris, 40% in the control group. The anxiety level of preschool-aged children during hospitalization before building block therapeutic play program was almost the same in both groups. Control group anxiety was 45%. At preschool during hospitalization, up to 65% of children in the intervention group showed

Table 1. Distribution of preschool-age children's anxiety by gender in the intervention group (n = 40)

Gender	N	Mean	SD
Male *Pre-test* *Post-test*	10	21.50 8.00	4.301 1.115
Female *Pre-test* *Post-test*	10	23.00 8.80	3.801 1.135

Table 2. Distribution of anxiety in preschool age children by gender in the control group (n = 40)

Gender	N	Mean	SD
Male *Pre-test* *Post-test*	10	19.70 18.80	2.701 2.658
Female *Pre-test* *Post-test*	10	22.50 21.80	3.136 4.392

mild anxiety, compared to 50% of children in the control group. In addition, children's anxiety levels in the intervention group were significantly different before and after therapy, according to the Paired t-test. The T-test: −7.803 The test's p-value was 0.000. Because of p = 0.05, Ho is rejected, which means there is a difference in anxiety about building block therapeutic play program between the intervention and control groups. Building block therapeutic play program reduces preschoolers' anxiety in Roemani Hospital of Semarang's Ismail II room.

The study found that female had more anxiety than men. However, therapeutic play reduced preschoolers' hospital anxiety. The female intervention group (Table 1) and control group respondents had higher anxiety than the male respondents (Table 2). Preschoolers in the intervention group and control group have similar anxiety levels before building block therapeutic play program (Table 3); after building block therapeutic play program, the control group's anxiety level is higher than in the intervention group (Table 4). Before and after building block therapeutic play program, anxiety is significantly lower in the intervention group (Table 5) but not in the control group (Table 5). Building block therapeutic play program reduces preschoolers' anxiety in Roemani Hospital's Ismail II room (Table 6).

Table 3. Distribution of respondents based on the level of anxiety of preschoolers before building block therapeutic play program (n = 40)

Anxiety level	Intervention		Control	
	N	%	N	%
Panic	1	5	1	5
Anxious	12	70	9	45
Moderate anxiety	5	15	6	30
Mild anxiety	2	10	4	20
Amount	20	100	20	100

Table 4. Distribution of respondents based on the level of anxiety of preschool-aged children after building block therapeutic play program (n = 40)

Anxiety level	Intervention		Control	
	N	%	N	%
Panic	0	0	0	0
Anxious	0	0	5	25
Moderate anxiety	7	35	10	50
Mild anxiety	13	65	5	25

Table 5. Differences in anxiety before and after building block therapeutic play program for preschoolers (n = 40)

Anxiety level	Mean		Uji t	*P value*
	Before Intervention	After Intervention		
Anxiety level: Intervention group	20.40	8.40	9.63	.000
Anxiety level: Control group	19.10	19.20	−108	.915

Table 6. The effect of building block therapeutic play program on the anxiety level of preschoolers (n = 40)

Variable	N	Mean	Uji t	*P value*
Intervention group	20	−12.000	−7.803	.000
Control group	20	0,1000		

4 Discussion

This study was conducted homogeneously among men and female. It was discovered that female experienced more anxiety than men because female were more sensitive and men were more active and explorative. The average anxiety levels demonstrated this before therapeutic building block game for female respondents ranged from 21.50 to 23.00 for those in the intervention group and from 19.70 to 22.50 for those in the control group. In the intervention group, the average male respondents experienced anxiety after therapeutic building block game at a rate of 8.00 to 8.80, compared to 18.80 to 21.80 for average female respondents in the control group. This follows research conducted by Purwandari (2009), that gender can affect anxiety. Unlike boys, girls tend to easily experience anxiety because of the influence of the hormone estrogen, which, when interacting with serotonin, will trigger anxiety [27, 28]. According to Tesaningrum's (2014) study, female between the ages of 3–6 are more anxious than male. Male are more active and curious. Being quieter and more reserved than male, female are more sensitive and find it difficult to express their feelings. More female struggle verbally than male do. Female are less patient, prone to environmental pressures, and more emotional [29].

The results showed similarities in the anxiety level of preschool-aged children hospitalized in the intervention group and the control group before therapeutic building block game, which obtained anxiety levels between panic, severe anxiety, moderate anxiety, and mild anxiety. In the intervention group, the highest level of anxiety was shown in respondents with severe anxiety levels, with 12 (75%) children also experiencing panic anxiety levels. In the controlled group, the level of anxiety was indicated by a severe anxiety level of 9 (45%). Anxiety can be seen in mild, moderate, and severe panic. Each level causes physiological and emotional changes in the individual. This study showed that the intervention and control groups experienced anxiety during hospitalization [13]. In the study, the children reported fear of medical procedures, particularly the injection needle. This point is probably related to the children's state of illness, as none of the children in this study had a chronic illness [30, 31].

After therapeutic building block game, preschoolers' anxiety levels decreased significantly, according to this study. Control group kids had more anxiety than intervention group kids. 12 (65%) respondents experienced mild anxiety in the intervention and control groups. 50% had moderate anxiety. After building block therapeutic play program, most children received the game well and felt psychologically safe, comfortable, and appreciated for their uniqueness, so their anxiety decreased significantly. Games for hospitalized children give them joy and help them express anxiety, fear, sadness, tension,

and pain. Games are the best way to engage children in treatment with health workers [26]. Alfiyanti (2007) found that some respondents had moderate anxiety (73.33%) and severe anxiety (26.66%) before playing therapy. Playing therapy reduced mild and moderate anxiety by 86.6% and 13.3%. These numbers show that playing therapy can reduce preschoolers' hospital anxiety [32, 33].

The Paired t-test showed a significant difference in anxiety before and after building block therapeutic play program. The intervention group's anxiety levels decrease after building block therapeutic play program. Preschoolers average 20.40 before therapeutic play. In the intervention group, the average level of anxiety before therapeutic play is 19.10. After therapeutic play is 8.40, the t-test is 19.20 with a p-value of 0.000 0.05, indicating a significant difference. In the control group, the average level of anxiety before therapeutic play is 19.10. After therapeutic play is 19.20, the t-test is −.108 with a p-value of $0.915 > 0.05$, indicating no significant difference. This study supports Perry's (2007) theory that children benefit from playing. This is the best tool for hospitalized children. Playing in a hospital makes a child a stranger and relieves stress. Diversion toys let kids focus on fun and combine reality and imagination [33]. Lestari (2013) found that the average anxiety score before playing origami was 2.30. At the same time, anxiety is 0.43 after origami [34].

This study found that therapeutic building block game reduced hospitalized preschoolers' anxiety ($p = 0.000$ 0.05). Therapeutic building block game, is a preschool-friendly game that can reduce children's anxiety. Building blocks help children express feelings and thoughts, relieving pain and stress. Preschoolers at Ismail II Hospital can reduce anxiety by playing with blocks. Semarang. Therapeutic play helps children communicate with others, such as nurses. In addition, therapeutic play reduces children's anxiety before and after invasive procedures (things that irritate the body's surface) [34]. Tesaningrum (2014) found a difference in the average level of anxiety between the control group and the Lego therapy group. According to the results, after playing therapy, most children received the game well, felt psychologically safe and comfortable, and were appreciated for their uniqueness, so their anxiety decreased [35].

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