



Play Therapy to Reduce Traumatic Stress in Earthquake-affected Children in North Lombok, West Nusa Tenggara, Indonesia

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Abstract. Play therapy is a therapy that is appropriate to the level of child development as a period of play after exposure to a disaster. Children are the group most vulnerable to traumatic stress due to exposure to disasters. Children are the group most vulnerable to traumatic stress due to exposure to disasters. The research design used a quasi-Experimental with a non-randomized control group pre-post-test design design. The population in this study was elementary school children who attended school in the North Lombok Regency. The sample used was 90 students in accordance with the inclusion criteria and divided into two groups, namely the treatment group with 45 students and the control group with 45 students by using multistage random sampling. Play therapy can reduce traumatic stress in children after exposure to traumatic events in the intervention group ($p=0,000$). Play therapy was effective to reduce the traumatic stress among children. They may express their feeling by sharing stories and experience with peers

Keywords: Health coaching, health promotion model, adolescent, behavior



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INTRODUCTION

Disaster is a defined as a potentially traumatic event, which may be collectively experienced and may be attributed to natural, technological or human causes (1). Natural disasters such as earthquakes can threaten and disrupt the lives and livelihoods of people caused by natural and or non-natural factors and human factors resulting in human casualties, environmental damage, property losses, and psychological impacts (2). These psychological impacts can cause many mental health problems (3).

Trauma to individuals associated with an event can be a dangerous physical or emotional threat that can be life threatening and cause loss of effects on individual functions and mental, physical, social, emotional, or spiritual well-being (4). The most common reactions such as sadness, anxiety, anger, and stress experienced by victims after a disaster are normal responses to very abnormal situations (4).

Even though everyone will be affected by some traumatic events, the various reactions and feelings for each person can vary. Many people may feel very scared or anxious, or numb, and feel separated. Some people can have a mild reaction, but not a few will experience a severe reaction. Many factors can determine a person's reaction such as the nature and severity of the trauma experienced, previous traumatic experiences, the support they have from others, physical health, personal and family history of mental health problems, cultural and traditional backgrounds, and age (children from different age groups will react differently) (5).

Previous research examining the prevalence of traumatic stress in children aged 7-13 years in the form of earthquakes and tsunamis that occurred in Nanggroe Aceh Darussalam in 2004 showed that the prevalence of PTSD was 48% (6). Other studies also conducted on 10-year-old elementary school children in the Yogyakarta Special Region in the earthquake that occurred in 2006 showed that the prevalence of traumatic stress in children was 87% (7).

Everyone has the strength and ability to overcome life's challenges, but some people who are very vulnerable in crisis situations will need additional assistance such as special groups of children and adolescents. Children and adolescents are vulnerable to mental health problems after a disaster. Most teenage victims only display transient psychological symptoms as a normal reaction to traumatic events (8). Children who survive earthquakes may have many psychological problems, such as stress, depression and anxiety (9). While other psychological impacts are prolonged sadness, substance abuse disorders, distorted perceptions, pessimism, and suicide attempts (10).

Re-exposure of disasters has a worse effect on the mental health of children and adolescents. Children and adolescents who have been exposed to disasters will be more sensitive to the negative impacts of subsequent disasters (3). The psychological impact of mass catastrophes in developing countries is rarely evaluated systematically (11).

Interventions to reduce anxiety or stress are feasible after trauma. Play therapy is based on the belief that play is a universal language for children to express their emotions and thoughts without relying on verbalization (12). The findings showed that children and adolescents who received play therapy interventions showed better results than children who did not get these alternative interventions. The most common intervention is drawing. Play therapy with the use of images is a more powerful tool than therapy to play with other methods because most children tend to enjoy the pictures without showing signs of tension (13).

OBJECTIVE

This study aimed to determine the effect of play therapy on reducing traumatic stress in children affected by earthquakes.

METHOD

A quasi-experimental study design, pre and post test with equivalent control group. This research was conducted at the elementary school in North Lombok Regency. Ninety

students were selected using inclusion criteria into treatment group (n=45) and control group (n =45). We conducted the multistage random. The inclusion criteria including grade 3 to grade 5 elementary school students, get written approval from parents, children can communicate verbally, children can cooperate, and children have received trauma healing beforehand.

The instrument used to measure traumatic stress in children was the Child Trauma Screening Questionnaire (CTSQ) which consists of 10 question items. The instrument has been tested for validity and reliability before the research was conducted. Data obtained from questionnaires were analyzed using the Independent test to test and Paired t test with a significance level of 0.05.

The participants were recruited on the basis of the Ethical Approval of ethic committee, Faculty of nursing Erlangga university with the certificate number of 1294-KEPK.

Descriptive analysis was used to determine the frequency distribution of traumatic stress assessment before and after play therapy interventions. The different test of the effect given from the intervention on the variables concerned in the two groups is the T-test which aims to determine the significant difference between variables and groups. The independent sample t test is used to determine the significance of the mean difference between two groups as one variable against another variable.

RESULTS

Characteristic of respondents

Table 1 shows that the respondent characteristics based on age in the treatment group were mostly 10 years old, 17 respondents (38%) and respondents with 12 years old were the least respondents (7%). Whereas in the control group, respondents with 9 years of age (18%) were the most respondents with respondents who were at least 12 years old, namely 6 respondents (13%). Characteristics of respondents by sex both in the treatment group and in the control group were the same, namely dominated by female respondents 23 respondents (51%) and men 22 respondents (49%). Characteristics of respondents based on the presence or absence of the respondent's family who died during the earthquake showed that 2 respondents (4%) had families who died during the earthquake in the treatment group and 11 respondents (76%) in the control group had families who died in the earthquake.

Table 1 showed the characteristic of respondents based on age, the results showed the p-value was greater than α 0.05 (0.180), which means there was no influence of age on the occurrence of traumatic stress in children. Gender also has no effect on the occurrence of traumatic stress in children because the value of P value (0.665) was greater than α 0.05. demographic data of a family who edited during the earthquake has a value of P Value smaller than α 0.05 which means that a family who is edited during the earthquake has an influence on the occurrence of traumatic stress in children.

Table 1. Characteristic respondents

Characteristics of respondents	Experimental Group (45)		Control Group (45)		P Value
	n	%	n	%	
Age (year)					0.180
9	11	24	18	40	
10	17	38	8	18	
11	10	22	13	29	
12	7	16	6	13	
Total	45	100	45	100	
Gender					0.665
Male	22	49	22	49	
Female	23	51	23	51	
Total	45	100	45	100	
A family who died during the earthquake					0.012
Exist	2	4	11	24	
Not exist	43	96	34	76	
Total	45	100	45	100	

Mean different of traumatic stress among intervention group and the control group before and after play therapy implementation

Table 2 shows that there was a decrease in the average value of traumatic stress before and after intervention in the treatment group than in the control group. The results showed that the P value was smaller than the value of α 0.05 so it was stated that there were differences in traumatic stress between the treatment group and the control group after being given intervention. The difference in the values of the two groups after being given an intervention showed the influence of play therapy on reducing traumatic stress in children affected by the earthquake

Table 2. Mean different of traumatic stress among intervention group and the control group before and after play therapy implementation

Variable	Group	Pre Test	Post Test	Delta Δ	P Value
		(Mean + SD) Min-Max	(Mean + SD) Min-Max		
Traumatic stress	Experimental (n=45)	6.15 $\pm$ 1.127 2-8	4.42 $\pm$ 0.811 2-6	1.73	0.000
	Control (n=45)	5.06 $\pm$ 1.009 3-7	5.17 $\pm$ 0.911 3-7	0.11	
Independent Samples T Test		0.000	0.000		

DISCUSSION

Disasters cause disruption to the socioeconomic life of affected communities. Earthquakes that destroy homes and buildings and hurt even make children lose their parents

and other families will cause stress and trauma. After the disaster, children are also forced to live in new places such as refugees, which can exacerbate the stress experienced by children because they have to live together with many people and with improper facilities. One of the most important impacts after a disaster occurs in children is post-disaster stress.

Symptoms of traumatic stress mainly occur after trauma. It is therefore important to provide psychosocial support to identify those who experience symptoms of traumatic stress, give them a plan of follow-up and refer to further treatment if symptoms do not subside (14).

This research was conducted in the school environment. The school is the environment of the two children after the family where the school is a learning tool and can also be used as a place to carry out an intervention involving children and adolescents. Outside the family unit, school is one of the main support systems for children, if left to function intact, schools can be the most natural support system for children and adolescents in implementing psychosocial interventions. According to C. Fu & Underwood (2016) the implementation of interventions through schools is considered a practical approach to public health initiatives because it can reach a larger population target. Interventions relating to mental health and psychosocial support carried out in schools can help to prevent the medicalization of the normal reaction to traumatic stress and a low feeling of stigma among children (15).

The intervention used in this study involving the population of children and carried out in the school environment is a play therapy intervention in the form of drawing, writing and telling stories. Playing can be used as a therapeutic therapy because it focuses on the needs of children to be able to express themselves through fun activities in play activities so that they can be used to reduce stress that occurs in children. This is in line with the research from Alfianti, Hartati & Samiasih (2007) that therapeutic play has been identified as an effective intervention for preparing children for hospitalization, coping, understanding, and stress due to hospitalization (16).

Drawing can be the most comfortable media for storytelling for children. previous study showed that research of Farokhi & Hashemi (2011) when children draw, they are free to express themselves, to send messages without speaking and things that they think are important in their life experiences (13).

Another study also suggested that asking children to draw and write stories about what they have experienced is a common therapeutic communication technique that is used that provides an opportunity to express their perceptions of their illness and feelings visually and verbally (17). School-age children prefer to express their feelings and thoughts by drawing rather than words. in consistent with previous study showed there was a decrease in the anxiety level of children undergoing cancer treatment in hospitals through intervention with a combination of techniques of drawing, writing and telling stories (18).

When a traumatic event occurs, it can cause traumatic stress. This traumatic stress is also affected by the serious injury felt from death. In this study, several families of respondents died during the earthquake. The families of respondents who died included mothers, siblings, uncles, grandmothers, or cousins. This can affect the height of traumatic stress experienced by respondents after being exposed to a disaster. Research from Levers (2012) is in line with the results of this study that traumatic stress is generally caused by perceived serious injuries from death, or threats to the physical integrity of oneself or others that can cause potentially chronic and debilitating diseases called PTSD (19).

This study also uses a type of game in the form of storytelling. Respondents told what they had drawn. The goal is so that respondents can express their feelings without harboring themselves what they feel. Sharing stories can train respondents to encourage each other, fellow disaster victims to be able to strengthen each other in the face of traumatic events they experience. This is consistent with the research conducted by Swalm (2005) that speech therapy or story sharing can ease the burdens of the buried mind and psyche (20) and also

research from Anonim (2005) which says that exchanging stories makes children feel they are in the same boat, even feeling themselves better than others. This condition triggers a person to rise from the trauma suffered and fight anxiety.

Play therapy in this study is effective for reducing traumatic stress in children after a disaster. Many things can influence the effectiveness of play therapy, including children being able to communicate through games and play therapy according to the stage of child development. In addition, rural culture can also influence the effectiveness of play therapy carried out in the school environment, namely children in their families are still taboo to express what is felt verbally so that children are more comfortable with their peers who also feel the same. Parents in the culture in which research is conducted tend to be busy working rather than playing with children.

Children will be left to play with their peers rather than gather with family to share stories. Children also feel embarrassed to tell what their parents feel. For example, when children experience problems in school such as fights, children prefer not to tell parents because they believe that parents will blame them for the fights that occur. So they prefer not to tell stories compared to those who are to blame. Parents in the culture of the research place feel that if the child's material needs are met, then there is no need to know what events the child experiences in his daily life. Culture like this is one of the reasons why effective play therapy is carried out in the school environment with the same age child respondents. This is consistent with the research conducted by Maspupatun (2017) that play is used as a therapy for children as counseling is used as therapy for adults (21).

The conditions at the time of the study also influenced the effectiveness of this play therapy, where, when the research was carried out, in February 2019 there was no trauma healing performed on children. Trauma healing is only done at the beginning of the earthquake, which is in a refuge such as playing and singing. Whereas when they returned to school, trauma healing was only done once in the form of walking to the local tourist area. In addition, no trauma healing has been carried out so that the presence of play therapy is expected to reduce traumatic stress experienced even more that earthquakes still exist today

CONCLUSION

Play therapy can help reduce traumatic stress in children. The effectiveness of play therapy is because children can communicate through games. Play therapy carried out in the school environment is more effective because the school is the second environment after the family. Schools can be a place for children to express their feelings by sharing stories with peers who they think have the same feelings they experience.

STRENGTH AND LIMITATION

Play therapy is the main choice of therapy in children who experience traumatic stress. But in its application, often play therapy is only done in refugee camps and there is no further therapy when they have returned home to evaluate symptoms of stress in children after exposure to the disaster. So that symptoms of advanced stress, such as PTSD are difficult to detect early because there is no further treatment if symptoms of stress are found in children who do not decline.

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The research environment is not conducive because it is in emergency schools with makeshift buildings and facilities such as the absence of halls, lack of writing desks and respondents not focusing on research because of the large number of students outside the class

playing because the teaching and learning process is not maximized. A conducive environment is needed in this study such as a calm and comfortable environment.

REFERENCES

- (1) McFarlane CA, Norris H. Fran. Definitions and Concepts in Disaster Research. 2006;3–19.
- (2) BNPB. No Title [Internet]. Badan Nasional Penanggulangan Bencana. 2018. Available from: <https://bnpb.go.id/#>
- (3) Geng F, Zhou Y, Liang Y, Fan F. A Longitudinal Study of Recurrent Experience of Earthquake and Mental Health Problems Among Chinese Adolescents. 2018;9:1–9.
- (4) Beinecke R, Raymond A, Cisse M, Renna K, Fuller A, Crawford K, et al. The mental health response to the Boston bombing: A three-year review. *Int J Ment Health*. 2017;46(2):89–124.
- (5) World Health Organization WTF and WV, International. Psychological first aid: Guide for field workers. Leslie Snider (War Trauma Foundation, WTF), Mark van Ommeren (World Health Organization W and, Alison Schafer (World Vision International W, editors. Switzerland: WHO: Geneva.; 2011.
- (6) Dawson KS, Joscelyne A, Meijer C, Tampubolon A, Steel Z, Bryant RA. Predictors of Chronic Posttraumatic Response in Muslim Children Following Natural Disaster. 2014;6(5):580–7.
- (7) Juth V, Silver RC, Seyle DC, Widyatmoko CS, Tan ET. Post-Disaster Mental Health Among Parent – Child Dyads After a Major Earthquake in Indonesia. 2015;
- (8) Tang W, Lu Y, Xu J. Post-traumatic stress disorder , anxiety and depression symptoms among adolescent earthquake victims: comorbidity and associated sleep-disturbing factors. *Soc Psychiatry Psychiatr Epidemiol* [Internet]. 2018;0(0):0. Available from: <http://dx.doi.org/10.1007/s00127-018-1576-0>
- (9) Fu Y, Chen Y, Wang J, Tang X, He J, Jiao M, et al. Analysis of prevalence of PTSD and its influencing factors among college students after the Wenchuan earthquake. 2013;1–6.
- (10) Damanjit Sandhu SK. Psychological impacts of natural disasters. *Indian J Heal Wellbeing*. 2013;4(6):1317.
- (11) SH B, L V, S S, P S, E F, M. T. Long-term follow-up of psychological distress following earthquake experiences among working Italian males: a cross-sectional analysis. 2005;193(6):420.
- (12) Lin Y, Bratton SC. A Meta-Analytic Review of Child-Centered Play Therapy Approaches. 2015;93(January).
- (13) Farokhi M, Hashemi M. Social and The Ana lysis of Children ’ s Drawings: Social , Emotional , Physical , and Psychological aspects. 2011;0:2219–24.
- (14) Thordardottir EB, Gudmundsdottir B, Petursdottir G, Valdimarsdottir UA, Hauksdottir A. Author ’ s Accepted Manuscript. *Int J Disaster Risk Reduct*. 2017; Available from: <https://doi.org/10.1016/j.ijdr.2017.11.006>
- (15) Fu C, Underwood C. A meta-review of school-based disaster interventions for child and adolescent survivors. 2016;583.
- (16) Dera Alfiyanti; Tri Hartiti; Amin Samiasih. Pengaruh Terapi Bermain Terhadap Tingkat Kecemasan Anak Usia Prasekolah Selama Tindakan Keperawatan di Ruang Lukman Rumah Sakit Roemani Semarang. 2007;Vol.1:35–44.
- (17) Malchiodi C. No Title. In: *Handbook of art therapy*, 2nd ed. 2nd ed. New York, NY, US: Guilford Press.: 2019 American Psychological Association; 2012.
- (18) Altay N, Kilicarslan-toruner E, Sari Ç. *European Journal of Oncology Nursing The*

- effect of drawing and writing technique on the anxiety level of children undergoing cancer treatment. *Eur J Oncol Nurs*. 2017;28:1–6.
- (19) Levers LL. *Trauma Counseling Theories and Intervention*. New York: Springer Publishing Company; 2012.
 - (20) Swalm D, Psychologist C, Depression AM. *Tabs - Childbirth and Emotional Trauma: Why it ' s Important to Talk Talk Talk*. 1995;
 - (21) Maspupatun I. Keefektifan play thrapy untuk penanganan stress pasca trauma bencana alam Imas Maspupatun. 2017;100–9.