International Journal of Instruction *October 2023 ● Vol.16, No.4*
e-ISSN: 1308-1470 ● www.e-iji.net *p-ISSN: 1694-609X*
pp. 747-770

Article submission code: 20221106151458
Received: 06/11/2022 Revision: 29/04/2023
Accepted: 22/05/2023 OnlineFirst: 07/08/2023

Reduce Students Post-Traumatic Stress Disorder Symptoms with Traditional Games: Play Therapy Based on Local Wisdom

Nandang Rusmana
Universitas Pendidikan Indonesia, Bandung, Indonesia, *nandangrusmana@upi.edu*

Nur Hidayah
Universitas Negeri Malang, Malang, Indonesia, *nur.hidayah.fip@um.ac.id*

Asrowi
Universitas Sebelas Maret, Surakarta, Indonesia, *asrowi@staff.uns.ac.id*

Muchamad Riduwan
Universitas Pendidikan Indonesia, Bandung, Indonesia, *riduwan.scout.movement@upi.edu*

The covid-19 epidemic, which has psychological effects on kids such anxiety and distress, served as the impetus for this study. The goal of the study was to determine whether typical game-based play therapy may help children with PTSD symptoms. In particular, the research would evaluate the instrument and reveal the effectiveness of the therapy in terms of the significance and nature of change. The study employed an experimental one-group pretest-posttest design, with elementary school sixth-graders meeting the inclusion criteria of having experienced traumatic events during the covid-19 pandemic. The diagnostic criteria instrument for PTSD symptoms was utilized. The processes for group therapy consisted of beginning a group, transition stage, performing stage, and termination stage. The analysis was conducted employing the RASCH model and the WINSTEP application. The results showed that the instrument had invalid items and was removed before analyzing the effectiveness of play therapy based on traditional games. Traditional game-based play therapy can alleviate PTSD symptoms in most students, although other students' PTSD symptoms remain unaffected. It is anticipated that future studies will explore the factors that influence the effectiveness of traditional game-based play therapy.

Keywords: posttraumatic stress disorder, local wisdom, play therapy, traumatic event

INTRODUCTION

Education is a process of empowering children to reach maturity in their development. However, during the process, various problems will continue to come up as challenges to achieving optimal development. One of the problems that occur to children is psychological problems occur due to various causes. As these problems affect their

Citation: Rusmana, N., Hidayah, N., Asrowi., & Riduwan, M. (2023). Reduce students post-traumatic stress disorder symptoms with traditional games: Play therapy based on local wisdom. *International Journal of Instruction*, *16*(4), 747-770. https://doi.org/10.29333/iji.2023.16442a

mental health, their process of independent education is damaged as well (Drisko et al., 2020; Saputra et al., 2021; Selvi & Zahroh, 2023).

Indonesia has various mental health problems that occur in children such as *conduct problems, emotional symptoms, peer problems, hyperactivity-inattention,* excessive anxiety, and low resilience (Dare et al., 2020; Pandia et al., 2021; Stulmaker & Ray, 2015; Umami & Turnip, 2019). Another severe and deep psychological problem such as post-traumatic stress disorder is also one of the mental health problems that interfere with the child's development (Rusmana et al., 2020; Yustiana et al., 2020). Mental health problems occur due to various factors such as economic, social, and health (Rahayu & Harmadi, 2016). Even problems such as natural and non-natural disasters can cause mental health problems or even exacerbate existing mental health problems (Fine, 1991). Children with mental health problems need a coping mechanism to reduce the symptoms/effect. School routine is an important *coping mechanism* for children. However, considering that school routines are carried out online during the pandemic, children have difficulty to do *coping* (Lee, 2020).

The covid-19 pandemic that has hit the world including Indonesia has caused major impacts, especially the psychological aspect (Budi et al., 2021; Nur et al., 2023). At that time, children as individuals with low adaptability will be very vulnerable when facing problems that correlate to their mental health (Morena, 2014). More than 25,000 children have lost their parents as a result of the covid-19 epidemic, according to information from the Ministry of Health of the Republic of Indonesia (Kemensos, 2021). This certainly gives pain to children considering the loss of a parent is a traumatic event and difficult to forget for children. The shifting of school learning from offline to online learning causes children to lose opportunities to get an environment that can support their development and help them learn to solve problems in their lives (Lee, 2020; Mun & Sam, 2022). In the end, traumatic events that leave a bad impression will cause problems and impact their behavior (Dubey et al., 2020; Singh et al., 2020; Xiong et al., 2020). As a result, deviant behavior will appear in children in the future (Yustiana et al., 2020). These problems arise due to *post-traumatic stress disorder* (PTSD) which is not resolved or even exacerbated by the presence of a stimulus that affects his mental health in the form of a traumatic experience. Unresolved traumatic experiences will gradually crystallize and form deviant behavior (Yehuda et al., 2015). If this happens, it will be difficult to cure and in the most extreme cases it cannot be eliminated (McCarthy & Cook, 2019; Stephenson & Renk, 2019).

Schools must work to lessen PTSD symptoms in order to serve as a child's support system. Helping children as students might be based on Indonesia's Regulation of the Minister of Education and Culture No. 111 of 2014 about Guidance and Counselling in Basic Education and Secondary Education. Counseling guidance in Indonesia is said to function as problem prevention, improvement, and healing in students. This means that PTSD symptoms that arise as a result of traumatic experiences experienced by students can be reduced through the services provided in school guidance and counseling.

Numerous initiatives have been made to help kids lessen the effects of post-traumatic illnesses. One of them is the application of a play therapy strategy. Play therapy has

been utilised in several trials to lessen the symptoms of PTSD (Drisko et al., 2020; Rusmana, 2019; Rusmana et al., 2020; Yustiana et al., 2020). *Play therapy* is referred to be effective to solve problems in children, especially in reducing PTSD symptoms. Games have been widely used as learning and even therapeutic media (Barreto et al., 2017; Mohd Radzi et al., 2019; Pratiwi & Waluyo, 2022; Telford & Ainscough, 1995; Zaibon & Shiratuddin, 2010). Through playing, children's behavior will appear naturally and easily explored to find out the symptoms of PTSD in children (Stulmaker & Ray, 2015). In addition, through playing children will gain new insights they can use to overcome their problems. Games are considered as a form of conflict resolution. In the process of playing, children can repeat their traumatic experiences which are represented in the form of games. This will give children an idea of how to solve the problems they are facing (Russ, 2004).

Indonesia with its rich culture has a variety of traditional games that can be used as a medium in *play therapy*. Several traditional Indonesian games have been used as curative efforts for children. In a study conducted by Latief et al., (2022) it was stated that traditional games have positive values that can be internalized by children. Traditional games have various values such as solidarity and social harmony, sense building of responsibility, honesty, sportsmanship, egalitarian attitudes, and behavior that can create happiness in children and help them overcome their mental health problems. Research conducted by Hafina et al., (2022) shows that traditional games can be developed into models to build character in children. Nur and Wijaya (2021) emphasize that a simple system in traditional games is easy to learn by children and makes learning experiences to be more fun and beneficial for their development.

One of the initiatives to promote Indonesia's culture that has been controlled by Law Number 5 of 2017 Concerning the Promotion of Culture is the usage of traditional games. Traditional games have cultural and sentimental value for parents and the use of local identities can help differentiate traditional games from others in national and global contexts. Many traditional games can be developed into various new and contextual designs rooted in a locality (Nur & Wijaya, 2021). Therefore, using traditional games as a *play therapy media* also supports the advancement of culture in Indonesia and modifies the appearance of each game so that it can be accepted by children of this era.

The purpose of this study is to determine whether play therapy with conventional games may help school pupils with PTSD. In particular, this study would like to reveal the effectiveness of the research instrument used to measure changes before and after the intervention. This research also explored the symptoms of post-traumatic stress disorder in students before and after the intervention based on the significance and nature of the changes.

Literature Review

Posttraumatic Stress Disorder in Children: Conceptual Framework and Research

PTSD is a condition that may affect anybody, including young children. A psychiatric condition known as post-traumatic stress disorder (PTSD), which is brought on by

exceptional occurrences including natural catastrophes, accidents, social disasters, non-natural disasters, and other uncommon events, can hinder personal growth. There's a chance that kids will get PTSD (Yehuda et al., 2015). Children who lack effective coping mechanisms are more likely to develop PTSD. Physical assault, academic and social discrimination, bullying, and other situations that can elicit strong emotional responses are examples of traumatic stressors that can lead to PTSD (Banyard et al., 2019; Corrigan, 2000; Lester et al., 2020).

A longer time interval between the traumatic incident and treatment will raise the risk of PTSD in childrens (Ford et al., 2007; Morris et al., 2015). According to Schiraldi (2019), PTSD that is left unchecked can affect a person's self-concept, development, and relationships with family, peers, and even those around him. PTSD can be a trigger for chronic mental health disorders and interfere with child development (McGuire et al., 2022). In extreme cases, PTSD can even have an impact on the emergence of disorders such as physical fatigue, emotional fatigue, mental fatigue, behavioral fatigue, and spiritual fatigue (Schiraldi, 2019).

The characteristics of children's PTSD symptoms are dependent on the traumatic events they have gone through (American Psychiatric Association, 2013). When a child is presented with a comparable incident, the same emotional emotions that surface when they see or experience a traumatic event may recur. The same emotional responses as when he initially encountered the traumatic incident might be triggered by certain locations, things, or even items that remind him of the terrible occurrence. Many people have died as a result of the COVID-19 epidemic. Appearances of traumatic events occur all over the world. Children can experience or be exposed to terrible events during the COVID-19 pandemic. Traumatic events such as the loss of a parent or loved one, receiving special care when contracting the COVID-19 virus, to seeing the number of fatalities that have fallen can trigger a child's emotional reaction (Cao et al., 2022; Febriana et al., 2022; Kemensos, 2021). When a child believes he may suffer a similar terrible incident or is exposed to specific things, locations, or even objects that can remind him of the traumatic event he has experienced, the child may exhibit extreme worry and anxiety. Some children may experience symptoms of anhedonia (not feeling happy/happy at the time of receiving good news or experiencing pleasant experiences), dysphoria (eg, depression, excessive anxiety (eg, anxiety about the future), and use of psychoactive substances), and have Negative thoughts are perceived as the most disturbing symptom in their lives (American Psychiatric Association, 2013).

The criteria of PTSD symptoms in children include how they react to different repeats of events. In general, the child will have recurring memories, involuntary recall, and intrusive thoughts of the traumatic event. In the era of the COVID-19 pandemic, this can be triggered by various information spread on social media regarding the COVID-19 pandemic. Social media plays an important role in distributing information about the COVID-19 pandemic to be able to prevent and overcome the COVID-19 virus. However, there is also a lot of information spread on social media in the form of images and videos that can trigger children to remember traumatic events that have been experienced or shown to them (Bendau et al., 2021; Tsao et al., 2021). Traumatic events

are often remembered when they affect the child's emotional, physiological, or behavioural status. In addition, nightmares that describe a traumatic experience or are related to a traumatic experience are also common. In daily activities such as playing children will show behavior related to the traumatic event they experienced. The psychological stress that is influenced by the memory of the traumatic event encourages children to show behaviors related to the traumatic event. In some cases, children will show dissociative behavior such as separating themselves from their friends when playing or even for children who have psychosomatic disorders there will be physical reactions when remembering traumatic events such as fast heartbeat, excessive sweating, and heavy breathing (Rusmana et al., 2020).

Avoidance is also carried out by children with PTSD. One of the most noticeable PTSD symptoms is avoidance (Akbari et al., 2022). Children with PTSD will avoid all activities, situations, objects, or even people related to the traumatic event they have experienced. Avoidance can be done continuously to avoid thoughts, memories, and feelings about the traumatic event that has been experienced (Shor et al., 2022; Weiss et al., 2022). Children do this intentionally and often by expressing feelings of discomfort or fear by crying or getting angry and diverting attention to other activities (Coll et al., 2022).

In addition, the characteristics of PTSD symptoms that arise in children are experiencing negative changes in cognition and mood that begin when the traumatic event is experienced or even exacerbated by the presence of other traumatic events (American Psychiatric Association, 2013). One of the negative changes in children's cognitive behavior is that they often develop excessive negative judgments or expectations regarding important aspects of life such as their personal and social environment (Brown et al., 2019). In some cases, children who receive discrimination experience negative changes in their cognitive abilities. The child will think that the reason behind the discrimination he receives is that he is different from other people and isn't worthy of recognition. In the end, children will blame themselves and not want to make peace with their situation (Stock et al., 2017). This is a form of negative change in children's cognition when assessing themselves. In more severe cases, negative changes in cognition become a manifestation of negative changes to their identity. Negative changes in cognitive traits are also followed by continuously negative moods such as fear, anger, guilt, excessive shame and so on which give negative impacts such as suicidal ideation (Collett et al., 2016), decreased interest or participation in any activity, feeling alienated from others, or refusing to feel positive emotions when interacted with family or close friends (Besser et al., 2022; García-López et al., 2022).

Characteristics of PTSD symptoms in children are sensitivity and irritability and even show aggressive behavior verbally and physically even though there is no provocation from anyone (American Psychiatric Association, 2013). This symptom is characterized by children yelling at other people, fighting, and destroying objects without any rational reason. Children will easily exaggerate small problems which can trigger aggressive behavior in the form of verbal or even fights. In certain cases, the child will engage in destructive behavior such as fighting, consuming alcohol, hurting himself, or even in

more extreme cases the child will commit suicide (Lemieux et al., 2019; Stansfeld et al., 2016; Stock et al., 2017). In addition, children will be very reactive to unexpected, such as a sudden loud noise or unexpected movement, being suddenly startled, or watching a video that surprised them (American Psychiatric Association, 2013). Concentration difficulties and sleep problems will also be experienced by children. They may hardly fall asleep or sleep too much which affects their daily activity, then dissociative behavior arises. This happens because children have problems with decreased arousal, which interfere with sleep and impacts their social life (Kaplan et al., 2022).

Play Therapy as a Technique to Reduce Anxiety Disorders

The therapeutic and developmental benefits of play are used in play therapy, a culturally sensitive intervention, to support children's growth and development (Drewes & Schaefer, 2010). In primary schools, play therapy has a long history of usage. Play-based therapies and play therapy are by no means new schools of thinking. Play has been used to care for children since the 1930s, when Hermione Hug-Hellmuth, Anna Freud, and Melanie Klein pioneered the practise. Many adult treatments have been modified for use with children including child-centered play therapy, which Virginia Axline adopted in 1947, sand-play therapy, which Margaret Lowenfeld and Dora Kalff developed from Jungian theory, and cognitive-behavioral play therapy, which Susan Knel developed in 1993. Due to the introduction of play therapy training at the university level in the 1960s and the expansion of guidance and counselling programmes in primary schools, there was a significant growth in the literature and research on school-based play therapy in the 1970s.

Play therapy is more important than ever in schools because of the sharp rise in bullying, school violence, homeless children and families, angry and aggressive kids, and kids exposed to ongoing trauma scenarios that are both man-made and natural. Children and adolescents can greatly benefit from the therapeutic benefits of playing as a treatment modality and from using play in therapy or counselling to help them with their emotional and behavioural problems. According to play therapists and paediatricians, play is utilised in treatment to assist children deal with emotional and behavioural issues, as stated by Drewes AA & Schaefer (2010). Additionally, the present atmosphere of school accountability shows how crucial it is to extend the use of school-based play therapy to meet children's mental health needs in a way that is developmentally and culturally appropriate in order to support children's socioemotional and cognitive development.

The majority of school mental health experts do not employ play therapy, despite the fact that it has been the treatment of choice for children since the early 1900s and is today routinely used by practitioners to treat a variety of emotional and behavioural issues successfully. The significant increase in publications on school-based play therapy since 2000, and the fact that the only book to date focused entirely on the use of play therapy in schools was published in this decade, indicates a dramatic increase in studying this topic. However, Berkowitz and Ray conducted a national survey of school psychologists and school counselors, respectively, and found that both groups of professionals supported the use of play therapy in schools and believed it to be effective,

but that insufficient time and lack of professional training made it difficult for them to prepare for activities and use play therapy in their services.

While numerous outcome studies are proving the therapeutic efficacy of play with children, there are few updates. The goal of the research process is to pinpoint the precise therapeutic elements, or mediators, that cause the desired change in the client's behaviour. To maximise the efficacy of their interventions, play therapists must identify the change agents that are present and may be combined. Paediatricians will be able to draw freely from existing theoretical views to personalise their treatment to a specific child when they have a better understanding of the many therapeutic variables that play therapy is based on (Drewes AA & Schaefer, 2010). As a result, it's important to locate and make use of therapies, like play therapy, that are sensitive to the particular requirements of children, especially those under the age of six.

The use of play therapy is based on understanding children's development and the role play plays in their growth and development. Children may express themselves nonverbally and across linguistic and cultural divides via play. According to specialists in the area, play therapy is the only treatment specifically designed to meet the requirements of young children. In play therapy children are provided with toys and materials that allow symbolic expression of the complex thoughts and feelings they have, which cannot be fully expressed through words alone. Piaget explained that the most basic age children function in preoperational (2-7 years) or concrete operational (8-11 years) at the stage of cognitive development. In contrast to talk therapy and other cognitive therapy/educational activities, play therapy helps children bridge the gap between concrete experiences and abstract thinking, enabling them to understand and express disturbing experiences. Through this mechanism, children can develop mastery over these experiences and/or learn coping strategies that allow them to benefit more fully from their academic experiences. (Drewes AA & Schaefer, 2010) .

Government reports on play therapy: 1) It has been responsive to the developmental needs of young children, 2) It has been successfully implemented with diverse and at-risk populations in a school setting where all children have equal access to services, and 3) has been applied systemically and comprehensively by involving children's caregivers (parents and teachers) in providing school-based mental health services (Drewes AA & Schaefer, 2010).

Research from (Mahalle et al., 2014) found that sand therapy (as a type of play therapy) can be applied as an additional technique or approach in counseling. Traumatized children who often find it difficult to express their thoughts and feelings related to traumatic events can enable it through sand therapy activities.

A controlled study by Meany-walen et al., (2014) conducted a randomized study to examine the effectiveness of Adlerian play therapy (AdPT) on 58 primary school students (48% Latino, 33% European American, 19% African American) which showed disruptive classroom behavior. Teachers and raters of treatment group assignments reported that children in the experimental group showed statistically significant

reductions in behavioral problems and that AdPT showed moderate to large levels of treatment effect.

METHOD

In this study, a one-group pretest-posttest design and an experimental quantitative methodology were utilised (Fraenkel et al., 2012). The study employed sixth-grade students from SDN 1 Cilangkap Tasikmalaya because they stated that the COVID-19 pandemic gave a horrific experience or terrible manifestation. The number of samples was 67 students with an average age of 9-12 years.

The tool used was a diagnostic criteria tool for PTSD symptoms that was created and used in a number of earlier research. The instrument was developed by Rusmana (2008) and adapted based on DSM-V to measure the level of symptoms such as being overwhelmed by traumatic events, having low future expectations, negative thinking, emotionality, self-isolation, and feeling helpless. The instrument contains 30 items with "Appropriate" and "Not Appropriate" as response options. Previously, an SPSS-based validation test was conducted, and all items were deemed valid with an average corrected item-total correlation value of 0.65. This value indicates that the item is valid because it exceeds the r-table threshold of 0.468. Besides, a reliability test was performed, which revealed that the Cronbach alpha value for standardized items was 0.834, exceeding the r table value of 0.468. (Rusmana, 2008). The summary of the diagnostic criteria for post-traumatic stress disorder is listed in Table 1.

Table 1
Summary of criteria of diagnostic PTSD

Construct	Control Taxonomy	No. of Items	Item Number
Criteria of Diagnostic PTSD	Shadowed by Traumatic Events	5	1, 7, 13, 19, 25
	Low Future Expectations	5	2, 8, 14, 20, 26
	Negative thinking	5	3, 9, 15, 21, 27
	Emotional	5	4, 10, 16, 22, 28
	Self-isolating	5	5, 11, 17, 23, 29
	Feeling Helpless	5	6, 12, 18, 24, 30

Intervention Procedure

The intervention was finished in two days. The treatment was carried out using a play therapy approach using group game counseling. Counseling was designed by using an experiential learning design. The stages used were the stages presented by Gladding (2003) including, *Beginning of a Group, Transition Stage, Working Stage,* and *Termination.*

Beginning a group, At this point, a number of tasks were completed, including group formation and familiarisation. Familiarity activities are done by doing several ice-breaking activities and light sports. Furthermore, the group formation was done by giving orders to the students to find a companion from the facilitator (in this activity referred to as kaka asuh) by asking each facilitator by applying a culture of courtesy. Determination of group members is done by paying attention to the PTSD symptoms of

each student. Before entering this stage, students' PTSD symptoms have been identified so that students can be grouped based on the level of PTSD symptoms. Each group has members with various PTSD symptoms, ranging from low to high. This was done to keep persons of the same type of groupings apart. Although PTSD-related issues are mostly personal issues, group counselling requires that the issues people encounter individually be seen as shared issues.

Transition Stage, This stage was completed by strengthening the bonds between group members, overcoming opposition, and processing the assigned work. Relationship improvement was done by making introductions using a wayang golek (a traditional puppet show in Indonesia) as the medium. Each student was directed to use the puppet show to describe himself, such as his name, age, place of residence, and his favorite thing. This activity was carried out alternately so that all students can introduce themselves using wayang golek. This procedure also aims to lessen any potential collective resistance. Bounding is also done at this point by deciding on the name of the group, yells, and the function of each member of the group. This will assist children to be able to get over their uneasy sensations so they may engage in active, honest, and unrestrained interaction.

Performing Stage, At this stage, each group took turns playing traditional games. The traditional games used included *nyiru*, *memungut batu* (picking up stones), *hiji-dua-tilu*, *bisikan* (whispering), *balap karung* (sack racing), and *memindahkan bola* (moving the ball). Those traditional games have been designed so that it has the values needed by students that provide insight to help them reduce PTSD symptoms. These qualities were predicted to boost one's self-assurance and capacity for adaptation, spark curiosity about life's reality, improve one's capacity for logical thought, and lessen unpleasant memories. There was a Socratic method-based reflection exercise after each game. The values inducement in each game was optimized in the reflection process so that students get lessons from their playing experience. There were three activities in reflection, identification, analysis, and generalization. Identification was carried out to determine the child's behavior during play. Analysis was used to determine the child's behavior/behavior. Generalization was to conclude learning values to overcome life's problems (Overholser, 2018).

Termination Stage, In order to complete the termination stage, general reflection, follow-up, appraisal, and close were conducted. In order to wrap up each activity and further the learned lesson, general reflection was conducted. Every child was questioned individually as part of the follow-up process about the behaviours that must be developed in order to get past the issue and how they will mould those behaviours. Following that, it was continued by reviewing the activity's methodology and outcomes by questioning participants about their perceptions of the activity. The last was the closing process of the group game counseling session.

Data Analysis

Before identifying changes in PTSD symptoms, the instrument would be analyzed. The objective of this analysis is to acquire and ascertain the correctness in evaluating the

efficacy of the offered intervention. Item validity, person and item reliability, and unidimensionality tests are used in the study (Maciver et al., 2016). In the analysis process, after testing the validity of the next item, items that were declared invalid (misfit) would be eliminated and re-analyzed by eliminating items that were declared invalid. This effort is made to get better results or called "RASCH-compliant" (Wright & Linacre, 1994). After all the items had been declared valid, the analysis continued by looking at person and item reliability and testing unidimensionality.

The RASCH Model was used for the data analysis (Nur, et al., 2022). In contrast, the WINSTEP programme was used to assist in the analytical process. By stacking the pre-posttest results vertically, the stacking analysis approach was applied. In the data set, each student's score will occur twice (pre-posttest data), but each test item will only ever appear once (Boone et al., 2014). The data was then analyzed to determine the significance of changes following the intervention. Using the SPSS application, a Paired Sample t-test was run to determine the significance of the change. Furthermore, a scatter plot was used to examine the nature of the change. This analysis was undertaken to assess whether positive or negative changes occurred in each student.

FINDINGS

Validity

The MNSQ, ZSTD, and Point Measure Correlation (PTMEA CORR) values for each item were examined to determine validity. If none of the MNSQ, ZSTD, or PTMEA CORR values fulfil the requirements, the item is deemed invalid. If there is at least one value in the MNSQ, ZSTD, and PTMEA CORR values that satisfies the requirements, the item is deemed acceptable. If the MNSQ result is between 0.5 and 1.5, it is considered acceptable. If the ZSTD number is between -2 and 2, it is OK. When the result is between 0.45 and 0.85, the PTMEA CORR value is acceptable. It is evident that items 17 and 26 were deemed invalid since they failed to satisfy the three aforementioned requirements. The following table 4 showed the invalid items.

Table 2
Items 17 and 26's descriptions and item fit statistics

Item no	Outfit MNSQ	Outfit ZSTD	PTMEA CORR	Control Taxonomy
17	1,66	2,8	0,42	Self-isolating
26	1,61	2,0	0,35	Low Future Expectations

After identifying the misfit items, the items were removed, and then re-analyzed the other items. After re-analysis, it was known that all items were declared valid with the conditions previously described. The following table 3 describes the items that have been declared valid.

Table 3
Description and item fit statistics of fit items

Item no	MNSQ Outfit	ZSTD Outfit	PTMEA CORR	Control Taxonomy
14	1.58	1.40	0.33	Low Future Expectations
5	1.46	1.30	0.37	Self-isolating
28	1.35	1.20	0.44	Emotional
1	1.32	1.80	0.48	Shadowed by Traumatic Events
21	1.23	1.20	0.48	Negative Thinking
11	1.2	0.60	0.33	Self-isolating
10	1.17	0.60	0.46	Emotional
3	1.03	0.20	0.30	Negative Thinking
26	1.06	0.30	0.36	Low Future Expectations
4	1.03	0.20	0.75	Emotional
6	1.00	0.10	0.43	Feeling Helpless
9	1.01	0.10	0.68	Negative Thinking
15	1.05	0.30	0.46	Negative Thinking
17	0.62	-0.20	0.20	Self-isolating
2	1.02	0.20	0.45	Low Future Expectations
27	0.84	0.00	0.26	Negative Thinking
18	0.93	-0.40	0.67	Feeling Helpless
20	0.75	-0.70	0.43	Low Future Expectations
25	0.49	-0.50	0.23	Shadowed by Traumatic Events
23	0.74	-0.40	0.32	Self-isolating
12	0.74	-0.90	0.48	Feeling Helpless
16	0.60	-0.90	0.38	Emotional
13	0.71	-1.20	0.52	Shadowed by Traumatic Events
7	0.82	-0.70	0.53	Shadowed by Traumatic Events
8	0.60	-1.00	0.41	Low Future Expectations
22	0.75	-0.40	0.37	Emotional
19	0.46	-0.80	0.32	Shadowed by Traumatic Events
24	0.66	-1.10	0.50	Feeling Helpless

Person Reliability and Item

The instrument analysis is shown in the following table (table 1), which also includes Cronbach Alpha (KR(20)) and the values of reliability, separation, measure (standard deviation), infit meansquare (INFIT MNSQ), infit z-standard (INFIT ZSTD), and outfit meansquare (OUTFIT MNSQ)..

Table 4
Instrument Analysis

	Person (134)	Item (30)
Reliability	0.71	0.92
Separation	1.58	3.33
Measure (SD)	1.95	1.11
MNSQ INFIT	0.99	1.00
ZSTD INFIT	0.1	0.1
MNSQ OUTFIT	0.94	0.94
ZSTD OUTFIT	0.00	0.00
KR (20) = 0.87		

Table 2 showed that the person's reliability value is 0.71 which indicates that the consistency of student responses to the instrument is said to be *fair*. This is due to

considering that 0.71 is in the favourable 0.67–0.80 range (Fisher, 2007). Additionally, the person separation index has a score of 1.58, which is considered bad because it is less than 2 (Fisher, 2007).

Cronbach Alpha has a value of 0.87. The value shows that respondents and the instrument interacted well. The number falls between 0,81-0,90 (Mohamad et al., 2015), which explains why. The interaction between the respondent's reaction to the item and its measurement may be noticed (Adams & Wieman, 2011). In this instance, it may be concluded that the tool is trustworthy for determining students' levels of post-traumatic stress disorder.

Additionally, the item separation index value was 3.33 and the item reliability value was 0.92. The item separation index is in the good category since it is in the range of 3–4, and this number denotes that the dependability of the item is in the very good category (between 91–94) (Fisher, 2007). This demonstrates that the item's consistency may be deemed to be extremely good and that it complies with the unidimensionality standards. In this way, the item effectively defines the variable being measured. This is demonstrated by the procurement of apparel and accessories, the majority of which were within the permitted range (Bond & Fox, 2015).

Unidimensionality

By examining the value of raw variance and raw unexplained variance, unidimensionality may be determined. The Standardised Residual Variance table that follows can give details about these two values.

Table 5
Standardized Residual Variance

	- - Empirical- -			Modelled
Total raw variance in observations	38.8	100%		100%
Raw variance explained by measures	10.8	27.7%		28.5%
Raw variance explained by persons	3.3	8.4%		8.6%
Raw variance explained by items	7.5	19.4%		19.9%
Raw unexplained variance (total)	28.0	72.3%	100%	71.5%
Unexplained variance in 1st contrast	3.1	8.0%	11.1%	
Unexplained variance in 2nd contrast	2.3	5.9%	8.2%	
Unexplained variance in 3rd contrast	2.0	5.1%	7.1%	
Unexplained variance in 4th contrast	1.7	4.5%	6.2%	
Unexplained variance in 5th contrast	1.6	4.2%	5.8%	

According to table 3, the raw variance for the first comparison was 27.7 and the raw unexplained variance was 8.0. The unidimensionality criteria is satisfied, according to the raw variance value, and is thus acceptable. This criteria must be satisfied with a minimum of 20%. Additionally, the first contrast's raw unexplained variance should be less than 10%, ideally under 15%. This demonstrates that the tool can accurately evaluate post-traumatic stress disorder (Fisher, 2007).

Intervention Effectiveness

Changes after intervention

The research subjects were 67 sixth-grade students from SDN 1 Cilangkap. The effectiveness of the intervention given to the students was measured after the

intervention. The identification was made by identifying the significance of the change. Moreover, the identification procedure involved evaluating the significance value of the difference between the pre-test and post-test scores.

Table 6
Significance Value of the Difference

No	Test	Mean	SD	*T*	*df*	Sig. (2-tailed)
1	Pre-test	-1.45	1.27	12.50	66	0.00
2	Post-test	-4.13	1.57			

Table 5 shows that after the students were given the intervention, the average pre-test and post-test scores were -1.45 and -4.13. This figure shows that after the intervention, there was a change seen from the average value, which decreased after the post-test. The sig value (2-tailed) is 0.00, meaning that the change is declared significant because the value is less than 0.05 (Axford et al., 2020). In addition, it can be seen that the df value is 66, and the t is 12.50. If the t value is compared to the t-table, it can be stated that there is a significant change. It is because the t-value is greater than the t-table value, which is 1.99 (Furqon, 2013).

Wright Map Person shows the position of the change. Changes in the level of students' post-traumatic stress disorders in students can also be identified through the Wright Map Person, as shown in Figure 1 (Abdullah et al., 2017).

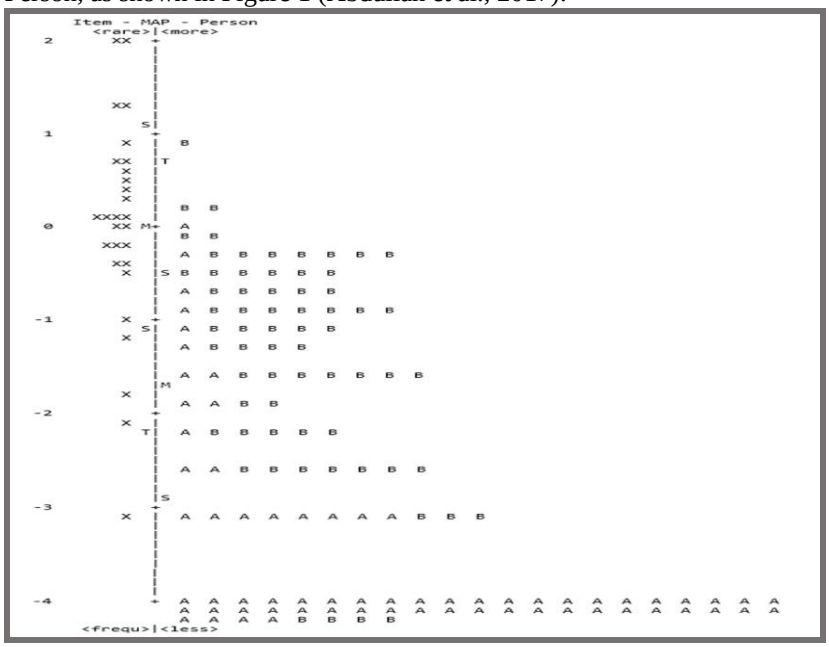

Figure 1
Wright Map Person (N=134) and items (N=30)

Figure 1 demonstrates that the position of the student's PTSD symptoms is on the right, whereas the item is on the left. The logit wright map person ranged between -4 to 2. Any difference between "before B" and "after A" following the intervention can be used to identify changes. A performed better on average than B, which was at logit -4. In other words, following the intervention, pupils' average levels of post-traumatic stress disorder fell into a low category.

Nature of Change

A scatter plot graph may be used to determine which variables have changed and to compare the size of the pre-posttest that is positive (+) and that is negative (-). For displaying data collected at various intervals so that an overview of the changes and the type of data changes can be acquired, scatter plots are the best option (Wang et al., 2018). Figure 2 displayed a scatter plot graph of the students' pre-posttest results for post-traumatic stress disorder.

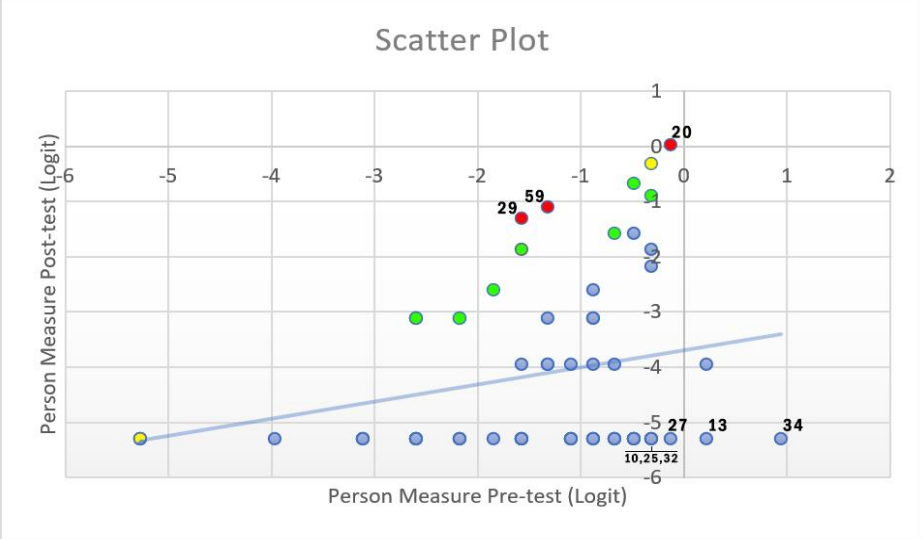

Figure 2
Scatter Plot Chart of Student Pre-posttest Measures of Post-traumatic stress disorder
*Red = the difference between Pre-test and Post-test values is Negative;
*Yellow = no difference between Pre-test and Post-test values;
*Green = the difference between the Pre-test and Post-test values is Positive (<1.00);
*Blue = the difference between Pre-test and Post-test values is Positive (>1.00)

Figure 2 demonstrates that the boundary line of change is the plot line separating the vertical axis (person measure: post-test) and the horizontal axis (person measure: pre-test). On the vertical axis or y-axis, the range of the post-test measure moves from the lowest scale (-6.0 logits) to the highest scale (1.0 logits); while on the horizontal axis or x-axis, the range of pre-test measures is lowest (-6.0 logits) to the highest scale (2.0 logits). It can be seen that the boundary line of the nature of change on the x-axis lies

between -5.0 logits to 1.0 logits. On the y-axis, the boundary line for the nature of change lies between -5.0 logits to -3.0. The change is considered positive if the position of the point which is the pre-posttest data of each student is above the line of the nature of change, and the change is considered negative if the position of the point is below the line of the nature of change (Wright, 2003). If the nature of change is positive, then the PTSD symptoms in students have increased after the intervention, and if the nature of change is negative then the PTSD symptoms in students have decreased after the intervention.

Figure 2 shows that negative changes only occur in students with a difference value between the pre-test and post-test of more than 1.00. Students with a negative difference, no difference, and a difference of less than 1.00 are not yet negative. However, there are students with a difference of more than 1.00 who are still positive.

It is well known that some students exhibit positive improvements (+), which indicates that post-traumatic stress disorder symptoms either got worse or stayed about the same after receiving the intervention. Students 20 (-1.57; -1.32), 59 (-1.32; -1.09), and 29 (-0.13; -0.04) who were assigned the colour red in the image had the most notable improvements. Additionally, it is well documented that several other pupils underwent detrimental alterations (-), indicating that PTSD symptoms markedly diminished following the intervention. In other words, following the intervention, the prevalence of post-traumatic stress disorder among pupils decreased. Students 34 (0.94; -5.28), 13 (0.22; -5.28), 27 (-0.13; -5.28), 32 (-0.31; -5.28), 25 (-0.31; -5.28), and 10 (-0.31; -5.28) experienced the most unfavourable changes.

DISCUSSION

The results of this study indicate that traditional games can reduce PTSD symptoms in children. Symptoms of PTSD including cognitive and social skills can be reduced through traditional games. Research by Latief et al., (2022) and Wang, (2015) also proves that games can develop cognitive and social skills in children. Through games, children will experience indirect learning to overcome their anxiety disorders. Children will learn to follow rules and orders and get information about themselves and their environment. In addition, traditional games can also foster interest so that they can overcome PTSD symptoms that eliminate children's interest in something. Kamid et al., (2022) have proven that children's interests can be raised through traditional games. Changes in the learning atmosphere by using games cause many changes in the child's learning process. These changes make children feel happy and enjoy every learning process. This is in line with the research of Rusmana et al., (2020) that the game process can increase children's interest in learning new things and begin to make peace with their traumatic events. In addition, Trimaryana & Retinofa's research (2016) adds that with traditional games, children's motivation can also increase. Motivation is a child's need to eliminate one of the symptoms of PTSD, namely the loss of passion or enthusiasm in achieving or making a goal.

However, the success of the therapy depends on the child's condition. This is one factor determining whether or not the therapy can alleviate PTSD symptoms in children.

During the therapy process, it is considered that children with no reduction in PTSD symptoms have difficulty speaking and are in poor emotional condition. As per their stage of development, children do not yet have developed cognitive abilities (Madej, 2016), which means that they struggle to comprehend the various instructions given and to interpret the game as one of the lessons.

Communication with children can cause difficulties for children. Ineffective communication, such as using difficult words for children to understand, asking open-ended questions, or speaking too quickly, will make it challenging for children to comprehend. Effective communication can be achieved by paying attention to magical thinking in children, which is a notion describing children's ideas that their thoughts, wants, and actions can influence their conditions. This effort will make it easier for children to comprehend and interpret the game being played, allowing them to overcome their PTSD symptoms.

Emotional situations in children that vary explain the inability of therapy to alleviate PTSD symptoms. Poor emotional conditions can negatively impact children's attention, memory and learning, decision-making, and social relationships (Brackett et al., 2019). Attention therapy is necessary to achieve therapy objectives. The child will be less interested in engaging in the therapeutic game if his or her attention is distracted. The child's motivation to heal from PTSD symptoms will diminish over time. This relates to learning and memory. Children who are not paying attention will neglect the therapeutic process, preventing them from receiving information that will assist them in overcoming their difficulties and learning how to do so.

The instrument as a tool to measure PTSD symptoms in children also plays an important role in identifying a change. The results showed that the instrument had a good construct and was declared valid to be used. Even so, the instrument used still has items that are declared invalid. In the research of Chang et al. (2013), the invalid items need to be removed as they will damage the measurement results thereby reducing the level of accuracy of the information obtained (Fisher, 2007). However, the results of the above study indicate that the control taxonomy with invalid items still provides fairly accurate measurement information. This is because there are still other items in the control taxonomy that are declared valid. In future research, the instrument needs to be revised and revalidated before use. Improvements can be made by removing items or improving statements. Liu & Lee (2015) show that invalid items can be corrected and then re-analyzed to determine their validity. This is done to maintain an instrument that is comprehensive for variable measurement.

CONCLUSION

Play therapy using traditional games is concluded to reduce PTSD symptoms in students. However, there are still children whose PTSD symptoms have not been significantly reduced or even not reduced at all. The PTSD Diagnostic Criteria instrument used as a measuring tool to determine changes in post-traumatic stress disorder symptoms has a fairly good construct after validation. Furthermore, PTSD symptoms in students measured using the instrument have decreased on average.

However, the nature of the changes shown in some students still shows a positive nature, meaning that post-traumatic stress disorder in students is not significantly reduced and even increases after being given an intervention. It is advised that future research develop therapies to alleviate PTSD symptoms based on traditional games by paying attention to factors that were not examined in this study. Qualitative and quantitative approaches (mixed method) are needed to determine the factors influencing the therapy process.

ACKNOWLEDGEMENT

Thank you to Universitas Pendidikan Indonesia for providing the opportunity for the Indonesian Collaboration grant (RKI) so that they can conduct research on traumatic counseling models based on local cultural wisdom.

REFERENCES

Abdullah, N., Noranee, S., & Khamis, M. R. (2017). The use of Rasch wright map in assessing conceptual understanding of electricity. *Pertanika Journal of Social Sciences and Humanities*.

Adams, W. K., & Wieman, C. E. (2011). Development and Validation of Instrument to Measure Learning of Expert-like Thinking. *International Journal of Science Education*, *33*(9), 1289–1312. https://doi.org/10.1080/09500693.2010.512369

Akbari, M., Seydavi, M., Hosseini, Z. S., Krafft, J., & Levin, M. E. (2022). Experiential avoidance in depression, anxiety, obsessive-compulsive related, and posttraumatic stress disorders: A comprehensive systematic review and meta-analysis. *Journal of Contextual Behavioral Science*, *24*, 65–78. https://doi.org/https://doi.org/10.1016/j.jcbs.2022.03.007

American Psychiatric Association. (2013). Diagnostic and Statistical Manual of Mental Disorders: Fifth Edition. In *Angewandte Chemie International Edition, 6(11), 951–952*. American Psychiatrin Publishing.

Banyard, V. L., Edwards, K. M., Rizzo, A. J., Theodores, M., Tardiff, R., Lee, K., & Greenberg, P. (2019). Evaluating a gender transformative violence prevention program for middle school boys: A pilot study. *Children and Youth Services Review*, *101*, 165–173. https://doi.org/https://doi.org/10.1016/j.childyouth.2019.03.052

Barreto, D., Vasconcelos, L., & Orey, M. (2017). Motivation and learning engagement through playing math video games. *Malaysian Journal of Learning and Instruction*, *14*(2), 1–21. https://doi.org/10.32890/mjli2017.14.2.1

Bendau, A., Petzold, M. B., Pyrkosch, L., Mascarell Maricic, L., Betzler, F., Rogoll, J., Große, J., Ströhle, A., & Plag, J. (2021). Associations between COVID-19 related media consumption and symptoms of anxiety, depression and COVID-19 related fear in the general population in Germany. *European Archives of Psychiatry and Clinical Neuroscience*, *271*(2), 283–291. https://doi.org/10.1007/s00406-020-01171-6

Besser, A., Flett, G. L., Nepon, T., & Zeigler-Hill, V. (2022). Personality, Cognition,

and Adaptability to the COVID-19 Pandemic: Associations with Loneliness, Distress, and Positive and Negative Mood States. *International Journal of Mental Health and Addiction*, *20*(2), 971–995. https://doi.org/10.1007/s11469-020-00421-x

Bond, T. G., & Fox, C. M. (2015). *Applying the Rasch Model. In Applying the Rasch model: Fundamental Measurement in the Human Sciences*.

Boone, W. J., Staver, J. R., & Yale, M. S. (2014). *Rasch Analysis in The Human Sciences*. Springer.

Brackett, M. A., Bailey, C. S., Hoffmann, J. D., & Simmons, D. N. (2019). RULER: A Theory-Driven, Systemic Approach to Social, Emotional, and Academic Learning. *Educational Psychologist*, *54*(3), 144–161. https://doi.org/10.1080/00461520.2019.1614447

Brown, L. A., Belli, G. M., Asnaani, A., & Foa, E. B. (2019). A Review of the Role of Negative Cognitions About Oneself, Others, and the World in the Treatment of PTSD. In *Cognitive Therapy and Research* (Vol. 43, Issue 1). Springer US. https://doi.org/10.1007/s10608-018-9938-1

Budi, D. R., Widyaningsih, R., Nur, L., Agustan, B., Dwi, D. R .S., Qohhar, W., & Asnaldi, A. (2022). Cycling during COVID-19 Pandemic: Sports or Lifestyle? *International Journal of Human Movement and Sports Sciences*, *9*(4), 765-771. https://doi.org/10.13189/saj.2021.090422

Cao, C., Wang, L., Fang, R., Liu, P., Bi, Y., Luo, S., Grace, E., & Olff, M. (2022). Anxiety, depression, and PTSD symptoms among high school students in china in response to the COVID-19 pandemic and lockdown. *Journal of Affective Disorders*, *296*(July 2021), 126–129. https://doi.org/10.1016/j.jad.2021.09.052

Chang, Y. C., Ailey, S. H., Heller, T., & De Chen, M. (2013). Rasch analysis of the mental health recovery measure. *American Journal of Occupational Therapy*, *67*(4), 469–477. https://doi.org/10.5014/ajot.2013.007492

Coll, S. Y., Eustache, F., Doidy, F., Fraisse, F., Peschanski, D., Dayan, J., Gagnepain, P., & Laisney, M. (2022). Avoidance behaviour generalizes to eye processing in posttraumatic stress disorder. *European Journal of Psychotraumatology*, *13*(1). https://doi.org/10.1080/20008198.2022.2044661

Collett, N., Pugh, K., Waite, F., & Freeman, D. (2016). Negative cognitions about the self in patients with persecutory delusions: An empirical study of self-compassion, self-stigma, schematic beliefs, self-esteem, fear of madness, and suicidal ideation. *Psychiatry Research*, *239*, 79–84. https://doi.org/10.1016/j.psychres.2016.02.043

Corrigan, P. W. (2000). Mental Health Stigma as Social Attribution: Implications for Research Methods and Attitude Change. *Clinical Psychology: Science and Practice*. https://doi.org/10.1093/clipsy.7.1.48

Dare, J., Marquis, R., Wenden, E., Gopi, S., & Coall, D. A. (2020). The impact of a residential camp on grandchildren raised by grandparents: Grandparents' perspectives.

Children and Youth Services Review, *108*, 104535. https://doi.org/https://doi.org/10.1016/j.childyouth.2019.104535

Drewes A.A. & Schaefer, C. E. (2010). *School- Based Play Therapy*.

Drisko, J., Corvino, P., Kelly, L., & Nielson, J. (2020). Is Individual Child Play Therapy Effective? *Research on Social Work Practice*, *30*(7), 715–723. https://doi.org/10.1177/1049731519854157

Dubey, S., Biswas, P., Ghosh, R., Chatterjee, S., Dubey, M. J., Chatterjee, S., Lahiri, D., & Lavie, C. J. (2020). Psychosocial impact of COVID-19. *Diabetes and Metabolic Syndrome: Clinical Research and Reviews*, *14*(5), 779–788. https://doi.org/10.1016/j.dsx.2020.05.035

Febriana, B., Wahyudi, F., & Susanto, W. (2022). Post-traumatic stress disorder in COVID-19 survivors who are self-quarantine in Indonesia. *International Journal of Health Sciences*, *6*(April), 4422–4428. https://doi.org/10.53730/ijhs.v6nS5.9575

Fine, S. B. (1991). Resilience and Human Adaptability: Who Rises Above Adversity? *The American Journal of Occupational Therapy*, *45*(6), 493–503. https://doi.org/10.5014/ajot.45.6.493

Fisher, W. P. (2007). Rating Scale Instrument Quality Criteria. *Rasch Measurement Transactions*.

Ford, T., Vostanis, P., Meltzer, H., & Goodman, R. (2007). Psychiatric disorder among British children looked after by local authorities: Comparison with children living in private households. *British Journal of Psychiatry*, *190*(APR.), 319–325. https://doi.org/10.1192/bjp.bp.106.025023

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). How to Design and Evaluate Research in Education. In M. Ryan (Ed.), *The McGraw-Hill Companies*. Mc Graw-Hill.

Furqon. (2013). *Statistika Terapan Untuk Penelitian*. Alfabeta.

García-López, M., Alonso-Sánchez, M., Leal, I., Martín-Hernández, D., Caso, J. R., Díaz-Caneja, C. M., Andreu-Bernabeu, Á., Arango, C., Rodriguez-Jimenez, R., Sánchez-Pastor, L., Díaz-Marsá, M., Mellor-Marsá, B., Ibáñez, Á., Malpica, N., Bravo-Ortiz, M.-F., Baca-Garcia, E., Ayuso-Mateos, J. L., & Izquierdo, A. (2022). The relationship between negative symptoms, social cognition, and social functioning in patients with first episode psychosis. *Journal of Psychiatric Research*, *155*, 171–179. https://doi.org/10.1016/j.jpsychires.2022.08.004

Gladding, S. T. (2003). *Group Work: A CounselingSpecialty* (4th ed.). Merril Prentice Hall. https://archive.org/details/groupworkcounsel00glad/mode/2up

Hafina, A., Nur, L., & Malik, A. A. (2022). The development and validation of a character education model through traditional games based on the Socratic method in an elementary school. *Cakrawala Pendidikan*, *41*(2), 404–415. https://doi.org/10.21831/cp.v41i2.46125

Kamid, K., Rohati, R., Hobri, H., Elza, T., Siti, R., & Wahyu, A. P. (2022). Process Skill and Student ' s Interest for Mathematics Learning : Playing a Traditional Games. *International Journal of Instruction*, *15*(3), 967–988. https://www.e-iji.net/dosyalar/iji_2022_3_52.pdf

Kaplan, G. B., Lakis, G. A., & Zhoba, H. (2022). Sleep-wake and arousal dysfunctions in post-traumatic stress disorder: Role of orexin systems. *Brain Research Bulletin*, *186*(December 2021), 106–122. https://doi.org/10.1016/j.brainresbull.2022.05.006

Kemensos. (2021). *Kemensos Perkuat Sinergi dalam Pengananan Anak Yatim Piatu Akibat COVID-19*. Kemensos.Go.Id. https://kemensos.go.id/kemensos-perkuat-sinergi-dalam-pengananan-anak-yatim-piatu-akibat-covid-19#:~:text=Berdasarkan data yang diperoleh Kemensos,data terdapat sebanyak 30.766 anak.

Latief, J. A., Khaldun, R. I., & Hatta, I. (2022). Children That Are Victims to Civil War: A Social Approach through Art and Culture—Molega, a Traditional Poso Children's Game: Special Issue. *Children*, *9*(7). https://doi.org/10.3390/children9070997

Lee, J. (2020). Mental health effects of school closures during COVID-19. *The Lancet Child and Adolescent Health*, *4*(6), 421. https://doi.org/10.1016/S2352-4642(20)30109-7

Lemieux, S., Tourigny, M., Joly, J., Baril, K., & Séguin, M. (2019). Characteristics associated with depression and post-traumatic stress disorder among childhood sexual abuse women. *Revue d'Epidemiologie et de Sante Publique*, *67*(5), 285–294. https://doi.org/10.1016/j.respe.2019.05.012

Lester, S., Khatwa, M., & Sutcliffe, K. (2020). Service needs of young people affected by adverse childhood experiences (ACEs): A systematic review of UK qualitative evidence. *Children and Youth Services Review*, *118*, 105429. https://doi.org/https://doi.org/10.1016/j.childyouth.2020.105429

Liu, H. H. T., & Lee, Y. S. (2015). Measuring Self-Regulation in Second Language Learning: A Rasch Analysis. *SAGE Open*, *5*(3). https://doi.org/10.1177/2158244015601717

Maciver, D., Morley, M., Forsyth, K., Bertram, N., Edwards, T., Heasman, D., Rennison, J., Rush, R., & Willis, S. (2016). A Rasch analysis of the model of human occupation screening tool single observation form (MOHOST-SOF) in mental health. *British Journal of Occupational Therapy*. https://doi.org/10.1177/0308022615591173

Madej, K. (2016). Child development. In *SpringerBriefs in Computer Science*. https://doi.org/10.1007/978-3-319-42875-8_3

Mahalle, S., Zakaria, G. A. N., & Nawi, A. (2014). Moral education through play therapy. *International Education Studies*, *7*(3), 78–87. https://doi.org/10.5539/ies.v7n3p78

McCarthy, E., & Cook, J. M. (2019). Using Prolonged Exposure With an Older Male U.S. Veteran With Childhood Sexual Abuse-Related PTSD. *Clinical Case Studies*,

18(2), 115–127. https://doi.org/10.1177/1534650118819140

McGuire, R., Halligan, S. L., Meiser-Stedman, R., Durbin, L., & Hiller, R. M. (2022). Differences in the diagnosis and treatment decisions for children in care compared to their peers: An experimental study on post-traumatic stress disorder. *British Journal of Clinical Psychology*, *February*, 1–14. https://doi.org/10.1111/bjc.12379

Meany-walen, K. K., Bratton, S. C., & Kottman, T. (2014). *Effects of Adlerian Play Therapy on Reducing Students ' Disruptive Behaviors*. *92*(January), 47–56. https://doi.org/10.1002/j.1556-6676.2014.00129.x

Mohamad, M. M., Sulaiman, N. L., Sern, L. C., & Salleh, K. M. (2015). Measuring the Validity and Reliability of Research Instruments. *Procedia - Social and Behavioral Sciences*. https://doi.org/10.1016/j.sbspro.2015.08.129

Mohd Radzi, S. H., Tan, W. H., & Yusoff, A. (2019). Shipping management simulation game for teaching and learning in higher education: A quasiexperimental study. *Malaysian Journal of Learning and Instruction*, *16*(2), 155–186. https://doi.org/10.32890/mjli2019.16.2.6

Morena, S. (2014). Children and Their Monsters. *Transactional Analysis Journal*, *44*(2), 118–127. https://doi.org/10.1177/0362153714539915

Morris, L., Salkovskis, P., Adams, J., Lister, A., & Meiser-Stedman, R. (2015). Screening for post-traumatic stress symptoms in looked after children. *Journal of Children's Services*, *10*(4), 365–375. https://doi.org/10.1108/JCS-10-2014-0045

Mun, Y. S., & Sam, T. L. (2022). Online Learning Motivation During COVID-19 Pandemic: The Role of Learning Environment, Student Self-Efficacy and Learner-Instructor Interaction. *Malaysian Journal of Learning and Instruction*, *19*(2), 213–249. https://doi.org/10.32890/mjli2022.19.2.8

Nur, L., Yulianto, A., Suryana, D., Malik, A. A., Al Ardha, M. A., & Hong, F. (2022). An Analysis of the Distribution Map of Physical Education Learning Motivation through Rasch Modeling in Elementary School. *International Journal of Instruction*, *15*(2), 815–830.

Nur, L., Al Ardha, M. A., Burhaein, E., & Malik, A. A. (2023). Direct instruction with task sheet-based learning model: an alternative approach to encourage learning motivation during the Covid-19 crisis. *International Journal of Instruction*, *16*(3), 843-854.

Nur, M. H. A., & Wisnu Wijaya, P. G. (2021). Revitalization of Traditional Games as a Tool for Contextual Education on Disasters (Case Study: Mount Krakatau). *IOP Conference Series: Earth and Environmental Science*, *830*(1). https://doi.org/10.1088/1755-1315/830/1/012033

Overholser, J. (2018). *The Socratic Method of Psychotherapy* (Issue July). Culumbia University Press.

Pandia, V., Noviandhari, A., Amelia, I., Hidayat, G. H., Fadlyana, E., & Dhamayanti, M. (2021). Association of Mental Health Problems and Socio-Demographic Factors Among Adolescents in Indonesia. *Global Pediatric Health*, *8*(28). https://doi.org/10.1177/2333794X211042223

Pratiwi, D. I., & Waluyo, B. (2022). Integrating Task and Game-Based Learning Into an Online TOEFL Preparatory Course During The COVID-19 Outbreak at Two Indonesian Higher Education Institutions. *Malaysian Journal of Learning and Instruction2*, *19*(2), 37–67. https://doi.org/10.32890/mjli2022.19.2.2

Rahayu, T. P., & Harmadi, S. H. B. (2016). The effect of income, health, education, and social capital on happiness in Indonesia. *Asian Social Science*, *12*(7), 75–87. https://doi.org/10.5539/ass.v12n7p75

Rusmana, N. (2019). Post-Trauma Counselling through Group Play Therapy: Traditional Games as a Basis for Model Development. *ICESSHum*, *335*, 536–544. https://doi.org/10.2991/icesshum-19.2019.86

Rusmana, N. (2008). *Konseling Kelompok Bagi Anak Berpengalaman Traumatik: Pengembangan Model Konseling Kelompok Melalui Permainan untuk Mengatasi Kecemasan Pascatrauma pada Anak Korban Tsunami di Cikalong Tasikmalaya*. Universitas Pendidikan Indonesia.

Rusmana, N., Hafina, A., & Suryana, D. (2020). Group Play Therapy for Preadolescents: Post-Traumatic Stress Disorder of Natural Disaster Victims in Indonesia. *The Open Psychology Journal*, *13*, 213–222. https://doi.org/10.2174/1874350102013010213

Russ, S. (2004). *Play in Child Development and Psychotherapy, Towards Empirically Supported Practice*. Lawrance Erlbaum.

Saputra, W. N. E., Alhadi, S., Supriyanto, A., & Adiputra, S. (2021). The Development of Creative Cognitive-Behavior Counseling Model as a Strategy to Improve Self-Regulated Learning of Student. *International Journal of Instruction*, *14*(2), 627–646. https://doi.org/10.29333/iji.2021.14235a

Schiraldi, G. R. (2019). The Post-Traumatic Stress Disorder Sourcebook: A Guide to Healing, Recovery, and Growth. In *Nuevos sistemas de comunicación e información*. McGraw-Hill.

Selvi, I. D., & Zahroh, U. (2023). *Children ' s Future Adversity : Learning Loss Risk during Online Learning in Covid-19 Pandemic*. *16*(2), 457–478.

Shor, R., Lee, D. J., Thompson-Hollands, J., & Sloan, D. M. (2022). Psychometric properties of the Posttraumatic Avoidance Behaviour Questionnaire among a treatment-seeking adult sample. *Psychological Trauma: Theory, Research, Practice, and Policy*, *14*(3), 393–398. https://doi.org/10.1037/tra0001060

Singh, S., Roy, D., Sinha, K., Parveen, S., Sharma, G., & Joshi, G. (2020). Impact of COVID-19 and lockdown on mental health of children and adolescents: A narrative

review with recommendations. *Psychiatry Research*, *293*(August), 113429. https://doi.org/10.1016/j.psychres.2020.113429

Stansfeld, S., Clark, C., Bebbington, P., King, M., Jenkins, R., & Hinchliffe, S. (2016). Mental health and wellbeing in England: Adult Psychiatric Morbidity Survey 2014. In *Adult Psychiatric Morbidity Survey 2014*. https://doi.org/10.1103/PhysRevB.77.235410

Stephenson, J., & Renk, K. (2019). My First Time Hurt: Using Preschool PTSD Treatment to Address PTSD Symptoms in a Young Girl With a History of Pediatric Cancer. *Clinical Case Studies*, *18*(2), 87–105. https://doi.org/10.1177/1534650118815601

Stock, M. L., Peterson, L. M., Molloy, B. K., & Lambert, S. F. (2017). Past racial discrimination exacerbates the effects of racial exclusion on negative affect, perceived control, and alcohol-risk cognitions among Black young adults. *Journal of Behavioral Medicine*, *40*(3), 377–391. https://doi.org/10.1007/s10865-016-9793-z

Stulmaker, H. L., & Ray, D. C. (2015). Child-centered play therapy with young children who are anxious: A controlled trial. *Children and Youth Services Review*, *57*, 127–133. https://doi.org/https://doi.org/10.1016/j.childyouth.2015.08.005

Telford, R., & Ainscough, K. (1995). Non-Directive Play Therapy and Psychodynamic Theory: Never the Twain Shall Meet? *British Journal of Occupational Therapy*, *58*(5), 201–203. https://doi.org/10.1177/030802269505800504

Trimaryana, O. F., & Retinofa, R. R. (2016). The Application of Traditional Game Rorodaan as Learning Tool in Physics Subject: Force and Movement to Improve Learning Results. *Journal of Physics: Conference Series*, *739*(1). https://doi.org/10.1088/1742-6596/739/1/012093

Tsao, S. F., Chen, H., Tisseverasinghe, T., Yang, Y., Li, L., & Butt, Z. A. (2021). What social media told us in the time of COVID-19: a scoping review. *The Lancet Digital Health*, *3*(3), e175–e194. https://doi.org/10.1016/S2589-7500(20)30315-0

Umami, R., & Turnip, S. S. (2019). Emotional and Behavioral Problems among Left-Behind Children in Indonesia. *Indian Journal of Psychological Medicine*, *41*(3), 240–245. https://doi.org/10.4103/IJPSYM.IJPSYM_370_18

Wang, J.-C. (2015). Games Unplugged! Dolanan Anak , Traditional Javanese Children's Singing Games in the 21st-Century General Music Classroom . *General Music Today*, *28*(2), 5–12. https://doi.org/10.1177/1048371314551412

Wang, Y., Han, F., Zhu, L., Deussen, O., & Chen, B. (2018). Line Graph or Scatter Plot? Automatic Selection of Methods for Visualizing Trends in Time Series. *IEEE Transactions on Visualization and Computer Graphics*, *24*(2), 1141–1154. https://doi.org/10.1109/TVCG.2017.2653106

Weiss, N. H., Schick, M. R., Contractor, A. A., Goncharenko, S., Raudales, A. M., & Forkus, S. R. (2022). Posttraumatic stress disorder symptom severity modulates avoidance of positive emotions among trauma-exposed military veterans in the

community. *Psychological Trauma: Theory, Research, Practice, and Policy*, *14*(3), 446–452. https://doi.org/10.1037/tra0001048

Wright, B. D. (2003). Rack and Stack: Time 1 vs Time 2 (Pre-test vs Post-Test). *Rasch Measurement Transactions*, *17*(1), 905–906.

Xiong, J., Lipsitz, O., Nasri, F., Lui, L. M. W., Gill, H., Phan, L., Chen-Li, D., Iacobucci, M., Ho, R., Majeed, A., & McIntyre, R. S. (2020). Impact of COVID-19 pandemic on mental health in the general population: A systematic review. *Journal of Affective Disorders*, *277*(July), 55–64. https://doi.org/10.1016/j.jad.2020.08.001

Yehuda, R., Hoge, C. W., McFarlane, A. C., Vermetten, E., Lanius, R. A., Nievergelt, C. M., Hobfoll, S. E., Koenen, K. C., Neylan, T. C., & Hyman, S. E. (2015). Post-traumatic stress disorder. *Nature Reviews Disease Primers*, *1*(October), 1–22. https://doi.org/10.1038/nrdp.2015.57

Yustiana, Rusmana, N., & Suryana, D. (2020). Group play therapy for the treatment of post-traumatic stress disorder in child victim of tsunami in Banten province. *Ilkogretim Online - Elementary Education Online*, *19*(4), 14–21. https://doi.org/10.17051/ ilkonline.202 0.763702

Zaibon, S. B., & Shiratuddin, N. (2010). Mobile Game-Based Learning (mGBL): Application Development and Heuristics Evaluation Strategy. *Malaysian Journal of Learning and Instruction*, *7*, 37–73. https://doi.org/10.32890/mjli.7.2010.7619.