

RESEARCH REPORT
RELATO DE PESQUISA

Health Psychology
Psicologia da Saúde

Editor
Raquel Souza Lobo Guzzo

Support
Coordenação de Aperfeiçoamento
de Pessoal de Nível Superior (Capes),
Ordinance 170, 10/6/2016.

Conflict of interest
The authors declare they have no
conflicts of interest.

Received
May 26, 2021

Final version
November 15, 2022

Approved
December 14, 2022.

The effectiveness of Sandplay Therapy versus Cognitive Behavioral Therapy: a comparative study

A eficácia da Terapia do Sandplay versus Terapia Cognitiva Comportamental: um estudo comparativo

Reinalda Melo da Matta¹ , Denise Gimenez Ramos¹ 

¹ Pontifícia Universidade Católica de São Paulo, Programa de Pós-Graduação em Psicologia Clínica. São Paulo, SP, Brasil. Correspondence to: R. M. MATTA. E-mail: <reinalda53@gmail.com>.

How to cite this article: Matta, R. M., & Ramos D. G. (2023). The effectiveness of Sandplay Therapy versus Cognitive Behavioral Therapy: a comparative study. *Estudos de Psicologia (Campinas)*, 40, e210099. <https://doi.org/10.1590/1982-0275202340e210099>

Abstract

Objective

This study was designed to compare the effectiveness of Sandplay Therapy and Cognitive Behavioral Therapy in the reduction of clinical/borderline symptoms in children and adolescents.

Methods

The participants were 21 victims of domestic violence with clinical or borderline scores on the Child Behavior Checklist and Young Self Report. They were also tested with Wechsler Abbreviated Intelligence Scale (T0) and designed by random to treatment and control groups. They were tested with the same instruments at T1 (after 20 sessions/ 20 weeks) and T2 (after 6 months).

Results

For the children, there were no changes across the groups, but a significant improvement in internalizing behavior problems in the sandplay group and in externalizing and total behavior problems in the Cognitive Behavioral Therapy group. For the adolescents, there was a significant improvement in externalizing behavioral problems in the sandplay group and in the total behavior problems for the Cognitive Behavioral Therapy group.

Conclusion

The results of this research do not allow to conclude that one technique is better than another since we did not have a consistent significative difference across the groups. These results may be due to the different approaches of the techniques. While Sandplay Therapy provides a free and protected space to allow the participants to express their feelings through images and histories, Cognitive Behavioral Therapy follows a program that focuses more on promoting behavior adaption to outside world. The application of this research design with a large population and with more sessions will allow to observe the consistence of these findings, providing a more solid ground to choose which technique would be more efficient for each specific case.

Keywords: Cognitive behavioral therapy; Domestic violence; Sandplay therapy; Short term psychotherapy.

Resumo

Objetivo

Esta pesquisa tem como objetivo comparar a efetividade da terapia de sandplay com a terapia cognitiva comportamental na redução de sintomas clínicos ou limítrofes em crianças e adolescentes.

Método

Os participantes foram 21 vítimas de violência doméstica com sintomas clínicos ou limítrofes nas escalas Child Behavior Checklist ou Young Self Report. Os participantes foram também testados com a escala abreviada de inteligência Wechsler (T0) e designados randomicamente para os grupos de tratamento e controle. Os participantes foram testados novamente em T1 (20 sessões/20 semanas) e em T2 (6 meses).

Resultados

Para as crianças, não houve mudança entre os grupos, mas uma melhora nos problemas internalizantes no grupo de sandplay e nos problemas externalizantes e total de problemas no grupo de terapia cognitiva comportamental. Para os adolescentes, houve uma melhora significativa nos problemas externalizantes no grupo de sandplay e no total de problemas no grupo de terapia cognitiva comportamental.

Conclusão

Os resultados desta pesquisa não permitem concluir que uma técnica é melhor que outra, pois não tivemos uma diferença significativa consistente entre os grupos. Esses resultados podem ser devidos às diferentes abordagens das técnicas. Enquanto a Sandplay Therapy oferece um espaço livre e protegido para permitir que os participantes expressem seus sentimentos por meio de imagens e histórias, a Cognitive Behavioral Therapy segue um programa que se concentra mais em promover a adaptação do comportamento ao mundo exterior. A aplicação deste desenho de pesquisa a uma grande população e com mais sessões permitirá observar a consistência destes resultados, proporcionando terreno sólido para escolher qual técnica seria mais eficiente para cada caso específico.

Palavras-chave: *Terapia cognitiva comportamental; Violência doméstica; Terapia do Sandplay; Terapia breve.*

The literature indicates that traumatic experiences in childhood can cause irreversible damage to a child's psyche, especially in victims who have suffered abusive practices such as verbal or physical abuse from their caregivers (Cicchetti & Toth, 2016; Mulder et al., 2018; Schore, 2007; Valentino et al., 2011). The long-term consequences of exposure to violence and a neglected childhood have been well studied, especially its effects on a child's development and increased vulnerability for mental health problems (Baldwin et al., 2019; Bland et al., 2018; Cecil et al., 2017; Toth & Manly, 2019). According to Lourenço et al. (2013), in their systematic review of the consequences of exposure to domestic violence, one of the major impacts upon children's health was posttraumatic stress and insecurity (75.8%). They observed also that violent families are no longer seen as a primordial space of acceptance and support; on the contrary, they turn into a scenario of tension and obstacles to the child's development. Some studies also show that the absence of a safe environment may increase the risk for behavioral problems and interferes with the child's developing sense of security and belief in a safe world, exceeding the child's capacity for self-regulation. It may also decrease environmental exploration which compromises the development of cognitive skills associated with school performance (Manly et al., 2013). Exposure to intimate partner violence also increases the child's attention towards threatening stimuli, increasing the development of externalizing and internalizing problems, including social and general anxiety, social withdrawal, and depression (O. Paul, 2019; E. Paul & Eckenrode, 2015). Mueller and Tronick (2019) affirm that intimate partner violence can have long-lasting effects on a child's socio-emotional and neurological development. It may disrupt the infant's emotional and cognitive development, the development of the hypothalamus-pituitary-adrenal axis and brain structures related to witnessing experiences (auditory and visual cortex).

These data confirm the need for empirically validated treatments and early interventions that could prevent further damage in the psyche and brain of these victims and promote a fast recovery, tailored to children's maturational needs (Gutermann et al., 2016; Mueller & Tronick, 2019).

Most studies until now have focused on research based on Trauma-Focused (TF), Cognitive Behavioral (CBT) and Attachment, Self-Regulation and Competency (ARC) therapies. In the last years, several meta-analysis studies were conducted to find which one would be more successful. Gutermann et al. (2016) affirm that, so far, among the 150 treatment conditions studied, CBT seems to be the promising treatment especially in studies that focus on cognitive techniques or exposure-based therapies. However, Slade and Warne (2016), in their meta-analysis of the effectiveness of Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) and Play Therapy, found that both can be beneficial for victims of child abuse, though TF-CBT usually has more positive outcomes. Similar results were obtained with the meta-analysis made by Morina et al. (2016), showing that the treatment with the best evidence of results is TF-CBT. This model has been tested in a variety of challenging research settings and has shown a strong evidence for treating trauma symptoms across diverse populations of traumatized children. The CBT has also proved to be effective in the study by Silk et al. (2018) when compared with supportive child-centered therapy. Bartlett et al. (2018) examined the effectiveness of three trauma treatments to improve outcomes for children with complex trauma and stated that ARC and TF-CBT provided optimal outcomes for children. The conclusion of Warwick et al. (2017), Cohen et al. (2018), and Kreuze et al. (2018) is that the TF-CBT model is an effective and widely used treatment for addressing childhood anxiety and trauma. Another systematic review and metasynthesis made by Neelakantan et al. (2019) with 39 qualitative studies of TF-CBT treatment reached similar conclusions: cognitive-behavioral coping techniques were useful during treatment and in the long-term; the treatment was viewed as a place of refuge and validation, aided by therapist competence and confidentiality; youth and caregivers felt that constructing a trauma narrative was instrumental for recovery. The CBT was also effective in the treatment of depression and anxiety disorders in children and adolescents according to Warwick et al. (2017) and Oud et al. (2019).

Although these techniques presented good results, Gutermann et al. (2016) pointed out the need for further research on the effectiveness of other treatments such as play therapy. Play therapy is widely used by child therapists but often criticized for lacking an adequate research base to support its growing practice. With this question in view, Bratton et al. (2005) developed a meta-analytic review of treatment outcomes of play therapy, with five decades of outcome research and 93 studies. The results reveal a large treatment effect for play therapy interventions, with the average child functioning of the child being treated at 0.80 standard deviations better than children not being treated and it seemed equally effective across age and gender. In this type of treatment, the act of playing is viewed as the vehicle for communication between the child and the therapist on the assumption that children will use play materials to directly or symbolically express feelings, thoughts, and experiences that they are not able to express through words. With a similar approach, Sandplay Therapy (SPT) is another technique based on play and imagination that could facilitate the expression of unconscious processes linked to traumatic experiences as previous studies have shown (Freedle et al., 2015; Han et al., 2017; Matta & Ramos, 2021). It is a non-verbal and creative therapy, where subjects create their own scenes or drawings by hand using sand trays containing dry or wet sand, miniature figures, pebbles, and other natural objects. Weinrib (1993), Kalff (2003), and Pattis (2011) observed that the act of playing in the sand enables the expression of deep unconscious contents and thus awareness at a preverbal level. Friedman and Mitchell (1994) indicated that this form of treatment allows for the emergence of unconscious

traumatic components, which are normally contained via defense mechanisms. These unconscious components may be symbolically revealed in scenes, bringing aggressive suppressed needs to the surface. Some clinical cases studies of SPT have been conducted with adult, teenage, and child trauma victims. These studies reveal that symbolization of the trauma allowed for psychic content to be integrated and for aggressive and destructive tendencies to be acknowledged; for converting the core of defensive structures into creative structures and gradually modifying and strengthening the ego (Freddle et al., 2015; Herrmann, 2011; Kalff, 2003; Roesler, 2019). Sandplay has been tested and proved its effectiveness in two recent studies. Lee et al. (2018) demonstrated that Group Sandplay Therapy can improve the quality of peer relationship and decrease behavioral problems. Matta and Ramos (2021) proved the effectiveness of individual Sandplay Therapy in the improvement of the internalizing and externalizing behavioral problems in children victim of mistreatment and violence. These results remained the same six months after the end of therapy and were verified by analyzing Sandplay scenarios.

The reasoning behind this technique is based on the knowledge that traumatic events become sedimented in subcortical structures including in the amygdala and the hypothalamic-pituitary-adrenal axis and therefore remains unconscious and non-verbalized (McCrory et al., 2010; Schore, 2007). D'Andrea et al. (2012), points to a possible effectiveness of nonverbal techniques. According to Fosha (2003, p. 229),

As long as emotional experience is not processed through language and logic, as the right hemisphere speaks a language of images, sensations, and impressions and urges toward action, the therapeutic discourse must be conducted in a language that the right hemisphere speaks.

In accordance with this view, Van der Kolk et al. (2005) criticized verbal therapies for increasing the risk of activating those implicit memories and physical or physiological sensations linked to trauma which may lead to the experience of strong negative emotions. In addition, it is well-established that play represents the primary means for young children to facilitate the emergence of unconscious content. Clinical observations had shown that the development of interpersonal cognitive, emotional, and physical techniques that integrate recreation and stimulate nonverbal symbolism are likely to promote mental health without the risk of re-traumatization (Van der Kolk et al., 2005). However, as we have seen, there is a limited number of studies on expressive and non-verbal therapy. Therefore, non-verbal therapy techniques may represent an effective treatment strategy.

To observe this effectiveness, we organized a research whose objective is the comparison of the results between CBT and SPT in the treatment of children and teenagers with clinical symptoms (CBCL [Child Behavior Checklist] & YSR [Youth Self Report]) due to violence, negligence, and physical or psychological abuse.

Method

Participants

The participants were referred to the study by psychologists working at a public Health Care Center. They were abused children and adolescent from poor Brazilian communities that were having behavior problems at school. According to the social service of this Health Care Center, all of them suffered domestic violence, negligence, and physical and/or sexual abuse. Of these individuals, 24 were referred and 21 accepted to participate: 8 children and 13 teenagers. Inclusion

criteria: presence of clinical or borderline symptoms on CBCL or YSR. Exclusion criteria: children or adolescents that were under psychological treatment. This research was approved by the Research Ethics Committee, CAEE: 69391317.0.0000.5484, under opinion number 2.163.549.

Instruments

Wechsler Abbreviated Scale of Intelligence (WASI) – is a general intelligence test (IQ test) designed to measure intelligence and cognitive ability in adults and older adolescents, in this research, the Verbal IQ (VIQ) and Performance IQ (PIQ) were computed (Wechsler, 2014).

Child Behavior Checklist (CBCL/6-18) – is instrument for ages 6-18. Achenbach System of Empirically Based Assessment (Rocha et al., 2010).

Youth Self Report for ages 11-18 (YSR/11-18) – by Achenbach (2015).

Procedures

Both parents/caregivers, as well as the children and adolescents, signed an informed consent form. All children and adolescents were tested with the CBCL/6-18, answered by the caregivers, and the adolescents also tested with the YSR/11-18. All children and adolescent presented clinical and/or borderline symptoms on the CBCL/6-18 and YSR/11-18 scales, including in the research: 8 children and 13 adolescents. This was considered the T0 moment of the research. All participants were randomly distributed to one of the following groups: Control Group (CG), where the participants were put on a waiting list for 20 weeks; Sandplay Therapy (SPT), where the participants received 20 individual sessions; Cognitive Behavioral Therapy group (CBT), where the participants received 20 individual sessions.

Sandplay Technical Material: two boxes with wet and dry sand (size: 72x50x7,5cm), miniatures representing human beings, plants, minerals, animals; construction tools, houses, means of transportation and mythical figures and one camera for photos. Sandplay Therapy was applied in weekly individual sessions by three psychologists, with each session lasting 45 minutes on average. At the first meeting, the therapist said to the child: “You have here several miniatures and two boxes with sand: one with dry sand and the other with wet sand. You can play with the objects that are in this room. I would like you to make a scenario using the miniatures you want. After you finish and leave the room, I’m going to photograph what you’ve done”. It was also requested, after the end, that the child invent a story about the scenario. The therapist wrote down the verbal expressions of the participants and asked about their feelings. The session ended when the participants informed that they had finished and wanted to leave. After the participant’s departure, the therapist photographed the scenarios.

Technical Material for Cognitive Behavioral Therapy: blank sheets of paper, color pencils, Feelings decks. The CBT was performed once a week, individually, by a psychologist specialized in CBT, with an average duration of 45 minutes.

Control Group: the participants took part in the activities of the Health Center where they had weekly meetings lasting 60 minutes each.

All the participants were tested with the WASI Scale and, again, with the CBCL and YSR (adolescents) at two intervals: T1 (after therapy or 20 weeks/2nd assessment), and T2 (6 months after T1).

Data Analysis

Composition of the groups: Distribution by mean age: SPT (11.6); CBT (14.5); CG (11.1); $p = 0.211$ (Kruskal-Wallis test). Distribution by gender: all children were boys. Adolescents: SPT (40%); CBT (75%); CG (100%) were male with no statistical difference among groups. Total sample: SPT (63%); CBT (80%); CG (100%) were male ($p = 0,238$) * (Fisher's exact test). Conclusion: there was no significant difference related to age and gender among the groups.

The WASI results for children and adolescents before and after the interventions were: VIQ – the groups were similar at T0 ($p = 0.088$), T1 ($p = 0.80$), T2 ($p = 0.161$). PIQ – the groups were similar at T0 ($p = 0.167$), T1 ($p = 0.400$), T2 ($p = 0.367$).

However, the results on the WASI-VIQ presented an improvement in the same group after the intervention with SPT ($p = 0.031$) but not in the other two groups: CBT Group ($p = 0.35$); CG ($p = 0.37$). There was no improvement in the results on the WASI-PIQ evolution in the same group before and after interventions: SPT ($p = 0.13$); CBT ($p = 0.20$); CG ($p = 0.20$). Kruskal-Wallis test. The improvement was observed only in the verbal intelligence coefficient of the SPT group. Perhaps the possibility to tell stories during the scenes had helped the participants to construct a narrative of their conflicts and of the violence they had suffered.

Means across the groups for each variable in CBCL: There was no improvement on the CBCL scale across the groups after the interventions: Internalizing Behavior Problems (IBP): T0 ($p = 0.923$); T1 ($p = 0.376$); T2 ($p = 0.262$); Externalizing Behavior Problems (EBP): T0 ($p = 0.403$); T1 ($p = 0.510$); T2 ($p = 0.224$): Kruskal-Wallis test.

However, in Table 1, we may observe a significant improvement in internalizing problem in the SPT group and in externalizing and total behavior problems in the CBT group.

Table 1

Means within groups at different times Child Behavior Check List

Variable/Group	Time	M	SD	df	χ^2	p°
CBCL IBP / SPT (n = 8) (n = 8)	T0	71.8	7.16	2	6.258	0.044
	T1	70.1	8.65			
	T2	65.8	7.92			
CBCL IBP / CBT (n = 5)	T0	70.4	3.98	2	4.526	0.104
	T1	64.4	6.62			
	T2	61.6	8.91			
CBCL IBP / CG (n = 8)	T0	66.5	16.09	2	4.867	0.088
	T1	67.2	15.72			
	T2	68.8	16.30			
CBCL EBP / SPT (n = 8)	T0	71.6	9.82	2	5.871	0.053
	T1	67.0	5.02			
	T2	66.6	10.17			
CBCL EBP / CBT (n = 5)	T0	63.4	11.95	2	7.895	0.019
	T1	59.6	10.07			
	T2	57.8	12.95			
CBCL EBP / CG (n = 8)	T0	68.0	11.34	2	4.200	0.122
	T1	68.6	9.87			
	T2	69.9	10.53			
CBCL TBP / SPT (n = 8)	T0	74.4	7.19	2	4.267	0.118
	T1	73.1	8.22			
	T2	69.7	7.09			

1 of 2

Table 1*Means within groups at different times Child Behavior Check List*

2 of 2

Variable/Group	Time	M	SD	df	χ^2	p°
CBCL TBP / CBT (n = 5)	T0	69.2	4.09	2	7.600	0.022
	T1	62.6	9.16			
	T2	61.8	12.03			
CBCL TBP / CG (n = 8)	T0	73.1	6.60	2	2.516	0.284
	T1	73.1	5.80			
	T2	74.7	7.25			

Note: ^{*}Significance level $p < 0.05$; [°]Friedman test.

CBCL: Child Behavior Checklist; CBT: Cognitive Behavioral Therapy; CG: Control Group; df: Degrees of freedom; EBP: Externalizing Behavior Problems; IBP: Internalizing Behavior Problems; SPT: Sandplay Therapy; TBP: Total Behavior Problems.

Results of interventions for adolescents on the YSR scale: Means across the groups for each variable (YSR): IBP – Before the interventions, the SPT group was worse than the others in internalizing behavior problems ($p = 0.045$), being similar at T1 ($p = 0.201$) and at T2 ($p = 0.081$). Externalizing Behavior Problems (EBP) – T0 ($p = 0.577$); T1 ($p = 0.206$); T2 ($p = 0.153$).

The Total Behavior Problems (TBP) – T0 ($p = 0.107$); T1 ($p = 0.095$); T2 ($p = 0.066$): Kruskal-Wallis test There was no difference across the groups after the interventions.

In Table 2, we may observe the data of the mean scores within groups in different time shows that there was a significant improvement in the SPT group related to EP ($p = 0.015$ with an effect size of 8.444), in the CBT group related to TBP ($p = 0.038$ with effect size 6.533), and in the CG ($p = 0.050$ with effect size 6.00) related to TBP.

Table 2*Means within groups at different times Youth Self Report*

Variable / Group	Time	M	SD	df	χ^2	p°
YSR IBP / SPT (n = 5)	T0	80.0	9.36	2	2.800	0.247
	T1	68.8	17.05			
	T2	67.2	13.78			
YSR IBP / CBT (n = 4)	T0	62.5	11.36	2	3.800	0.150
	T1	56.7	6.19			
	T2	57.7	6.95			
YSR IBP / CG (n = 4)	T0	72.0	4.09	2	5.200	0.074
	T1	74.0	4.09			
	T2	74.7	5.50			
YSR EBP / SPT (n = 5)	T0	60.6	6.43	2	8.444	0.015
	T1	50.8	13.20			
	T2	50.6	13.20			
YSR EBP / CBT (n = 4)	T0	57.7	7.28	2	5.733	0.057
	T1	51.7	9.04			
	T2	53.7	7.19			
YSR EBP / CG (n = 4)	T0	62.7	8.27	2	3.571	0.168
	T1	63.2	8.81			
	T2	65.0	9.77			
YSR TBP / SPT (n = 5)	T0	75.0	7.69	2	3.895	0.143
	T1	63.0	13.4			
	T2	62.6	12.26			
YSR TBP / CBT (n = 4)	T0	63.2	8.18	2	6.533	0.038
	T1	53.7	8.54			
	T2	55.5	8.07			
YSR TBP / CG (n = 4)	T0	69.7	4.12	2	6.000	0.050
	T1	71.7	4.12			
	T2	72.0	3.66			

Note: ^{*}Significance level $p < 0.05$; [°]Friedman test.

CBT: Cognitive Behavioral Therapy; CG: Control Group; df: Degrees of freedom; EBP: Externalizing Behavior Problems; IBP: Internalizing Behavior Problems; SPT: Sandplay Therapy; TBP: Total Behavioral Problems; YSR: Youth Self Report.

However, in Table 3 the SPT group, there was an improvement in: the WASI-VIQ with low effect size; IBP, with medium effect size and for the adolescents, an improvement in EBP, with a large effect size. In the CBT group, there was an improvement in EBP and in TP with a large effect size. For the adolescents, there was an improvement in TP at the beginning (kept at T2) with a medium effect size.

Table 3*Means within groups at different times (post hoc)*

Variable	Group	n	Time	p^*	Z	Effect size (η^2)
WASI-QIV	SPT	8	T0-T1	0.240	-	-
			T0-T2	0.048	-1.521	0.289
			T1-T2	0.999	-	-
CBCL IBP	SPT	8	T0-T1	0.999	-	-
			T0-T2	0.048	-2.386	0.712
			T1-T2	0.240	-	-
CBCL EBP	CBT	5	T0-T1	0.048	-2.041	0.833
			T0-T2	0.048	-2.032	0.826
			T1-T2	0.999	-	-
CBCL TBP	CBT	5	T0-T1	0.034	-2.032	0.826
			T0-T2	0.081	-	-
			T1-T2	0.999	-	-
YSR EBP	SPT	5	T0-T1	0.034	-2.032	0.826
			T0-T2	0.081	-	-
			T1-T2	0.999	-	-
YSR TBP	CBT	4	T0-T1	0.049	-1.841	0.678
			T0-T2	0.155	-	-
			T1-T2	0.999	-	-

Note: *Significance level $p < 0.05$ adjusted by Bonferroni correction; ^oRelated-samples Friedman's Two-Way Analysis of Variance by Ranks.

IBP: Internalizing Behavior Problems; SPT: Sandplay Therapy; TBP: Total Problems Behavior; YSR: Youth Self Report.

Sandplay Results and Analysis

Each picture was analyzed by a group of Sandplay therapists who attributed one or more categories to each scene. The categories were organized according to the method developed by Friedman and Mitchell (1994); Ramos and Matta (2008). The scenes were classified in two thematic categories: negative and positive. Each of these categories encompassed four themes:

(A) Negative themes suggesting suffering and conflict: aggressiveness; threat/conflict; chaos/destruction; hurt/harm.

(B) Positive themes relating to transformation and the possibility of psychological improvement: celebration/happiness; centralization; achievement/victory; integration.

Data was divided in two phases:

A1: sessions 1 to 10, with themes related to category A (suggesting suffering and conflict); B1: sessions 1 to 10, with themes related to category B (transformation and the possibility of psychological improvement); A2: sessions 11 to 20, with themes related to category A (suggesting suffering and conflict); B2: sessions 11 to 20, with themes associated with category B (transformation and the possibility of psychological improvement).

In sessions 1-10, the ratio between SPT categories with negative themes versus total of themes was 72.8% and positive themes versus total of themes was 27.2% with $p < 0.001$ (chi-squared

test). In sessions 11-20, the ratio the between SPT categories with negative themes versus total of themes was 38.9% and positive themes versus total of themes was 61.1% with $p < 0.002$ (chi-squared test) (Table 4).

Table 4

Transformation of the themes along the process

Sandplay Therapy Themes	Sessions 1-10		Sessions 11-20		Z	Effect size (r)	p°
	M	SD	M	SD			
Negative themes (A)							
Agressiveness	1.6	2.26	1.0	1.93	-1.069	-	0.285
Threat / Conflict	7.5	6.90	4.1	2.90	-1.761	-	0.078
Chaos / Destruction	2.9	4.29	2.5	4.75	0.000	-	1.000
Hurt / Harm	3.8	4.71	2.0	1.31	-1.364	-	0.172
Positive themes (B)							
Celebration / Happiness	1.6	2.07	4.0	2.14	-1.973	0.698	0.049
Centralization	0.9	0.64	3.3	1.04	-2.359	0.834	0.011
Conquest / Victory	3.1	3.36	5.9	7.10	-1.160	-	0.246
Integration	0.3	0.71	2.0	1.78	-2.041	0.722	0.041

Note: ^{*}Significance level $p < 0.05$; [°]Wilcoxon test.

A: Themes of suffering and conflict; B: Themes related to psychological improvement.

These results indicated that negative themes were more frequent at the beginning of the intervention and positive themes were significantly higher at the end of SPT. The categories that showed a meaningful improvement were celebration/happiness (medium effect), centralization (large effect), and integration (medium effect).

The psychodynamics of the Sandplay processes

As shown on the CBCL and YSR tests, all those taking part in this study presented clinical results in the externalizing and internalizing factors prior to intervention as a criterion for selection, thereby indicating behavioral alterations of aggressiveness and opposition as well as significant levels of depression, anxiety, and withdrawal. Among the boys aged seven to ten, these results also appeared in the early scenarios, with the predominance of themes related to threats, fighting, and conflict. In most cases, these fights were characterized by unequal opposing forces where human beings were in danger of being destroyed by primitive wild animals which represented destructive aggressive forces. This context contains alienated human figures who care only for themselves and show indifference toward the afflictions of those in peril. Situations of solitude and abandonment are often represented at the beginning of treatment.

Example of a case: Boy, 9 years old (PH)

3rd session. Categories: chaos/destruction, threat/conflict, and hurt/harm

PH: "Once upon a time, there was a forest where everyone was escaping down the river and over the fields". We see here that the river is both endless and crowded. The situation is anguishing and there is no way out, yet the participant speaks of wanting to flee towards a house. It is impossible to flee. He used to live in a shelter, but he wanted to live with his mother who was now married to another man and had more children; PH did not want this man anywhere near her.

13th session. Categories: hurt/harm

PH said: "Once upon a time, there was an abandoned city and an abandoned farm. Everyone fled from that place and there was only a little bird left in its nest". Here the patient reveals his sense of abandonment, but there is also "a nest" to protect him, even though it is a solitary one. The father of this participant was in jail.

20th session. Categories: Celebration/Happiness, Integration/Centralization

The hitherto solitary and abandoned bird is now inserted among other characters close to the young student, whereas before therapy he was considered to be an undisciplined low achiever. The final scenario contains a celebration: Santa Claus is coming with a load of presents to distribute (although it is only April). Perhaps we have here the expression of the satisfactory ending to the process where figures of a young man show his graduation certificate; the bird abandoned in the first scenario, now restored, looks upon them. Many golden musical instruments complete the scenario.

The SPT symbolization made it possible for the participants to express their suffering. Analyzing the categories, A and B, and the thematic quality of the scenes made it evident that there was an improvement and transformation. Where the first scenarios contained more themes of aggressiveness, threat and conflict, chaos and destruction, hurt and harm, the final scenes contained more themes associated with centralization, integration, celebration/happiness, and achievement/victory. It is possible that the elaboration of the scenes and the stories they constructed, that the participants developed what Knox (2011) describes as a greater sense of self-agency, that is: a more mature ego and greater control over impulsiveness. As Kalff (2003) also observed, SPT enabled them to have a greater self-awareness, initially expressing their suffering in terms of chaotic and destructive themes and subsequently revealing a greater degree of organization, harmony, and psychic integration. The act of playing in a free and protected space, in the presence of a qualified therapist, enabled the expression of deep unconscious contents related to abandonment, abuse, and trauma. The ability to express and symbolize traumatic events led to the possibility of reframing, thus corroborating what Van der Kolk et al. (2005) highlighted: the importance for traumatized children to acquire skills to deal with uncomfortable physiological sensations and to be able to initially process these experiences non-verbally. SPT allowed for the development of this process by providing a protected space where children could "look" at their trauma without reliving and repeating it. The symbolic potential brought out by playing in the sand made it easier to connect and integrate with unknown aspects of the psyche, to explore creativity and imagination. The use of a variety of symbols made it easier for the children and teenagers to express their feelings and connect with their inner world, thereby providing the opportunity to transform and heal.

Discussion and Conclusion

The results of this research do not allow to conclude that one technique is better than another since we did not have a consistent significant difference across the groups. Although, we may say that the improvement in Verbal IQ, in Internalizing Behavior Problems, and in themes of Sandplay scenarios allow us to say that SPT helped the participants to improve their verbal abilities and express in images traumatic situations giving a narrative to them. On the other hand, the CBT group had a good performance in externalizing and total behavior problems with a large effect, according to the international literature. These results may be due to the different approaches of

the techniques. While SPT provides a free and protected space to allow the participants to express their feelings through images and histories, CBT follows a program that focuses more on promoting behavior adaptation to outside world. This is confirmed by the extensive literature about the benefits of this approach as it also shows the importance of social adaptation, specially in a group with profoundly serious social problems. It is important to remember that this assessment was made by the caregivers. According only with the adolescents (YSR), SPT had improved externalizing factors with a large effect size, while CBT group had an improvement in the total of problems with a medium effect size, although there were no significative differences across these groups. The difficulties to reach more consistent results may be due to the low number of the participants (below our expectations) as also the gravity of the cases that certainly would benefit from a longer process. The application of this research design with a large population and with more sessions will allow to observe the consistence of these findings, providing a more solid ground to choose which technique would be more efficient for each specific case.

References

- Achenbach, T. M. (2015). Achenbach System of Empirically Based Assessment (ASEBA). In R. L. Cautin & S. O. Lilienfeld (Eds.), *The Encyclopedia of Clinical Psychology*. John Wiley & Sons, Inc. <https://doi.org/10.1002/9781118625392.wbecp150>
- Baldwin, J. R., Reuben, A., Newbury, J. B., & Danese A. (2019). Agreement between prospective and retrospective measures of childhood maltreatment: a systematic review and meta-analysis. *JAMA Psychiatry*, *76*(6), 584-593. <https://doi.org/10.1001/jamapsychiatry.2019.0097>
- Bartlett, J. D., Griffin, J. L., Spinazzola, J., Fraser, J. G., Noroña, C. R., Bodian, R., Todd, M., Montagna, C., & Barto, B. (2018). The impact of a statewide trauma-informed care initiative in child welfare on the well-being of children and youth with complex trauma. *Children and Youth Services Review*, *84*, 110-117. <https://doi.org/10.1016/j.childyouth.2017.11.015>
- Bland, V. J., Lambie, I., & Best, C. (2018). Does childhood neglect contribute to violent behavior in adulthood? A review of possible links. *Clinical Psychology Review*, *60*, 126-135. <https://doi.org/10.1016/j.cpr.2018.02.001>
- Bratton, S. C., Rhine, T., & Jones, L. (2005). The efficacy of play therapy with children: a meta-analytic review of treatment outcomes. *Professional Psychology: Research and Practice*, *36*(4), 376-390. <https://doi.org/10.1037/0735-7028.36.4.376>
- Cecil, C. A. M., Viding, E., Fearon, P., Glaser, D., & McCrory, E. J. (2017). Disentangling the mental health impact of childhood abuse and neglect. *Child Abuse and Neglect*, *63*, 106-119. <http://dx.doi.org/10.1016/j.chiabu.2016.11.024>
- Cicchetti, D., & Toth, S. L. (2016). Child maltreatment and developmental psychopathology: a multilevel perspective. In D. Cicchetti (Ed.), *Developmental psychopathology* (Vol. 3, pp. 457-512). Wiley.
- Cohen, J. A., Deblinger, E., & Mannarino, A. P. (2018). Trauma -focused cognitive behavioral therapy for children and families. *Psychotherapy Research*, *28*(1), 47-57. <https://doi.org/10.1080/10503307.2016.1208375>
- D'Andrea, W. D., Ford, J., Stolbach, B., Spinazzola, J., Van der Kolk, B. A. (2012). Understanding interpersonal trauma in children: why We need a developmentally appropriate trauma diagnosis. *American Journal of Orthopsychiatry*, *82*(2), 187-200.
- Fosha, D. (2003). Dyastic regulation and experiential work with emotion and relatedness in trauma and disorganized attachment. In M. F. Salomon & D. J. Siegel (Eds.), *Healing trauma attachment, mind, body and brain* (pp. 221-281). W.W. Norton & Company.
- Freedle, L. R., Altschul, D. B., & Freedle, A. (2015). The role of Sandplay therapy in the treatment of adolescents and young adults with co-occurring substance use disorders and trauma. *Journal of Sandplay Therapy*, *24*(2), 127-145.

- Friedman, H., & Mitchell, R. (1994). *Sandplay: past, present and future*. Routledge.
- Gutermann, J., Schreiber, F., Matulis, S., Schwartzkopff, L., Deppe, J., & Steil, R. (2016). Psychological treatments for symptoms of posttraumatic stress disorder in children, adolescents and young adults: a meta-analysis. *Clinical Child and Psychology Review*, 19(2), 77-93.
- Han, Y., Lee, Y., & Suh, J. H. (2017). Effects of a sandplay therapy program at a childcare center on children with externalizing behavioral problems. *Arts in Psychotherapy*, 52, 24-31. <https://doi.org/10.1016/j.aip.2016.09.008>
- Herrmann, S. B. (2011). Transformation of violence: the case of Jacob. *Journal of Sandplay Therapy*, 20(1), 117-132.
- Kalff, D. M. (2003). *Sandplay: a psychotherapeutic approach to the psyche*. Temenos Press.
- Knox, J. (2011). *Self-Agency in psychotherapy (Attachment, autonomy and intimacy)*. Routledge.
- Kreuze, L. J., Pijnenborg, G. H. M., Jonge, Y. B., & Nauta, M. H. (2018). Cognitive-behavior therapy for children and adolescents with anxiety disorders: a meta-analysis of secondary outcomes. *Journal of Anxiety Disorders*, 60, 43-57. <https://doi.org/10.1016/j.janxdis.2018.10.005>
- Lee, Y. R., Jang, M., & Shim, J. (2018). The Effectiveness of group Sandplay therapy on quality of peer relationships and behavioral problems of Korean-Chinese children in China. *Journal of Symbols & Sandplay Therapy*, 9, 69-93. <https://doi.org/10.12964/jsst.18008>
- Lourenco, L., Baptista, M. N., Nunes, M., Senra, L. X., Basilio, C., & Bhona, F. M. C. (2013). Consequences of exposure to domestic violence for children: a systematic review of the literature. *Paidéia (Ribeirão Preto)*, 23(55), 263-271. <https://doi.org/10.1590/1982-43272355201314>
- Manly, J. T., Oshri, A., Lynch, M., Herzog, M., & Wortel, S. (2013). Child neglect and the development of externalizing behavior problems: associations with maternal drug dependence and neighborhood crime. *Child Maltreatment*, 18(1), 17-29. <https://doi.org/10.1177/1077559512464119>
- Matta, R. M., & Ramos, D. R. (2021). The effectiveness of Sandplay therapy in children who are victims of maltreatment with internalizing and externalizing behavior problems. *Estudos de Psicologia (Campinas)*, 38, e200036. <https://doi.org/10.1590/1982-0275202138e200036>
- McCrary, E., Brito, S. A., & Viding, E. (2010). Research review: the neurobiology and genetics of maltreatment and adversity. *Journal of Child Psychology and Psychiatry*, 51(10), 1079-1095.
- Morina, N., Koerssen, R., & Pollet, T. (2016). Interventions for children and adolescents with posttraumatic stress disorder: a meta-analysis of comparative outcome studies. *Clinical Psychology Review*, 47, 41-54.
- Mueller, I., & Tronick, E. (2019). Early life exposure to violence: developmental consequences on brain and behavior. *Frontiers in Behavioral Neuroscience*, 13, 1-7. <https://doi.org/10.3389/fnbeh.2019.00156>
- Mulder, T. M., Kuiper, K. C., Van der Put, C. E., Stams, G. J. J. M., & Assink, M. (2018). Risk factors for child neglect: a meta-analytic review. *Child Abuse & Neglect*, 77, 198-210. <http://dx.doi.org/10.1016/j.chiabu.2018.01.006>
- Neelakantan, L., Hetrick, S., & Michelson, D. (2019). Users' experiences of trauma-focused cognitive behavioural therapy for children and adolescents: a systematic review and metasynthesis of qualitative research. *European Child & Adolescent Psychiatry*, 28, 877-897. <https://doi.org/10.1007/s00787-018-1150-z>
- Oud, M., Winter, L., Vermeulen-Smit, E., Boddien, D., Stone, L., Heuvel, M., Taher, R., Graaf, I., Kendall, T., Engels, R., & Stikkelbroek, Y. (2019). Effectiveness of CBT for children and adolescents with depression: a systematic review and meta-regression analysis. *European Psychiatry*, 57, 33-45. <https://doi.org/10.1016/j.eurpsy.2018.12.008>
- Pattis, E. (2011). *Sandplay Therapy in vulnerable communities, a Jungian approach*. Routledge.
- Paul, E., & Eckenrode, J. (2015). Childhood psychological maltreatment subtypes and adolescent depressive symptoms. *Child Abuse & Neglect*, 47, 38-47. <http://dx.doi.org/10.1016/j.chiabu.2015.05.018>
- Paul, O. (2019). Perceptions of family relationships and post-traumatic stress symptoms of children exposed to domestic violence. *Journal of Family Violence*, 34, 331-343. <https://doi.org/10.1007/s10896-018-00033-z>
- Ramos, D. G., & Matta, R. M. (2008). Sandplay: a method for data analysis. *Journal of Sandplay Therapy*, 17(2), 93-115.

- Rocha, M. M., Pereira, R. F., Arantes, M. C., & Silves, E. F. M. (2010). *Guia para profissionais da saúde mental sobre o Sistema Achenbach de Avaliação Empiricamente Baseada (ASEBA)*. USP.
- Roesler, C. (2019). Sandplay therapy: an overview of theory, applications and evidence base. *The Arts in Psychotherapy, 64*, 84-94. <http://dx.doi.org/10.1016/j.aip.2019.04.001>
- Schore, A. N. (2007). Psychoanalytic research: progress and process. developmental affective neuroscience and clinical practice. *Psychologist-Psychoanalyst, 27*(3), 6-15.
- Silk, J. S., Tan, P. Z., Ladouceur, C. D., Meller, S., Siegle, G. J., McMakin, D. L., Forbes, E. E., Dahl, R. E., Kendall, P. C., Mannarino, A., & Ryan, N. D. (2018). A randomized clinical trial comparing individual cognitive behavioral therapy and child-centered therapy for child anxiety disorders. *Journal of Clinical Child & Adolescent Psychology, 47*(4), 542-554. <https://doi.org/10.1080/15374416.2016.1138408>
- Slade, M. K., & Warne, R. T. (2016). A meta-analysis of the effectiveness of trauma- focused cognitive-behavioral therapy and play therapy for child victims of abuse. *Journal of Young Investigators, 30*(6), 36-43. <https://creativecommons.org/licenses/by-sa/4.0/>
- Toth, S. L., & Manly, J. T. (2019). Developmental Consequences of child abuse and neglect: implications for Intervention. *Child Development Perspectives, 13*(1), 59-64. <https://doi.org/10.1111/cdep.12317>
- Valentino, K., Cicchetti, D., Rogosch, F., & Toth, S. L. (2011). Mother-child play and maltreatment: a longitudinal analysis of emerging social behavior from infancy to toddlerhood. *Developmental Psychology, 47*, 1280-1294. <https://doi-org.ez95.periodicos.capes.gov.br/10.1037/a0024459>
- Van Der Kolk, B. A., Roth, S., Pelcovitz, D., Sunday, S., & Spinazzola, J. (2005). Disorders of extreme stress: the empirical foundation of a complex adaptation to trauma. *Journal of Traumatic Stress, 18*, 389-399. <https://doi.org/10.1002/jts.20047>
- Warwick, H., Reardon, T., Cooper, P., Murayama, K., Reynolds, S., Wilson, C., & Creswell, C. (2017). Complete recovery from anxiety disorders following Cognitive Behavior Therapy in children and adolescents: a meta-analysis. *Clinical Psychology Review, 52*, 77-91. <https://doi.org/10.1016/j.cpr.2016.12.002>
- Wechsler, D. (2014). *Wechsler abbreviated scale of intelligence, (WASI): adaptação e padronização brasileira*. Casa do Psicólogo.
- Weinrib, E. (1993). *Imagens do Self: o processo terapêutico na caixa de areia*. Summus.

Acknowledgments

We would like to thank Josinete Poleto Cavassana, the Social Worker, Rosana Cirello, Sabrina Amaro Viana, and Serafina Dumbra Toloni, the psychologists who participated at the T0, T1, and T3 assessments and in the psychological care of children.

Contributors

R. M. MATTA contributed to the conception and design of the study, analysis and interpretation of data, corrections, and discussion of results, as well as the revision of the final version of the article. D. G. RAMOS contributed to the guidance for preparation and revision of the final version of the paper.