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# Effectiveness of Sand Tray Therapy on Emotional- Behavioral Problems in Preschool Children

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## Abstract

Emotional-behavioral problems are common in preschool-children and might have some destructive effects on them as well as others. Sand tray therapy is an effective technique that encourages children to express their thoughts, feelings, and conflicts through symbolic expression and story. In this technique a person has an opportunity to resolve conflicts, remove obstacles, and gain acceptance of self. The purpose of this research was to determine the effect of sand tray therapy on reducing emotional-behavioural problems among preschool children. A randomized controlled trial method was applied in this research. The statistical population consisted of preschool children who suffered from behavioural-emotional problems in Tehran in 2016. Three centers were randomly selected from preschool centers in Tehran. The scale of Child Behaviour Checklist (CBCL) was completed by parents. 24 children whose scores placed between the boundary range of 65<T<69 and clinical condition of T>69 were identified and they were randomly assigned to experimental and control groups (12 in per group). The experimental group was individually treated using the sand tray, but the control group did not receive any treatment. ANCOVA test was used for data analysis by SPSS 22. The results showed that sand tray therapy could reduce anxiety/depression and social problems (in the area of emotional problems) and aggression (in the area of the behavioral problem) in preschool children significantly. According to the results, it is recommended that child psychologists apply the sand tray therapy for reduction some of emotional-behavioural problems such as anxiety, depression, and social problems in preschool children.

***Keywords***: Preschool children; Emotional-behavioural problems; Sand tray therapy

## Introduction

Emotional-behavioral problems are common among preschool children and might have some destructive effects on them and others (Ogden & Hagen, 2008). Often these problems are transient responses to stressful life events (Rutter, Bishop, Pine, Scott, Stevenson & et al., 2008). The Emotional-behavioral problems are classified into two categories of behavioral / externalized and emotional / internalized disorders (Ivanova, Achenbach, Rescorla, Turner, Árnadóttir & et al., 2015). The researchers show that 11% of the boys and 6% of the girls have externalized behavioral problems and 14% of the children have the internalizing problems and it is equal among the boy and the girls (Kristoffersen, Obel, & Smith, 2015). Considering the importance of childhood and the likelihood of continued problems in next years of life, the importance of this study is apparent.

Sand Tray Therapy (STT) was developed by Margaret Lowenfeld. STT has been used for a variety of purposes with children, adolescents, adults, families, and groups. In STT a person creates the scenes, as a reflection of his/her own life, and the opportunity to resolve conflicts, remove obstacles, and gain acceptance of self (Landreth, Ray & Bratton,2009; Bertenthal-Smith, 2015; Linzmayer & Halpenny, 2013; Homeyer & Sweeney, 2016). In STT, clients need to open up emotionally, sharing their deepest thoughts and feelings when that happen. STT focuses on the what the client is experiencing at that moment (the now and here) (Linzmayer & Halpenny, 2013).

For the narrative therapist that STT is an effective tool to assist clients to tell their story. For the cognitive

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therapist, STT is a tool for exploring and disputing irrational beliefs; and for the family system therapist sand tray is a tool for exploring the family of origin issues and communication dynamics (Homeyer & Sweeney, 2016). From the humanistic approach, STT emphasis is on depth, and reliable relationship between client and therapist and the helps the therapist to facilitate an experience of growth and awareness of client. In this research, processing of STT was oriented by narrative and humanistic approaches in which verbalization and storytelling is an important part STT session and looks at a process of experiencing in the moment (Armstrong, Brown, & Foster, 2015).

The researchers have shown that STT can reduce aggression and hyperactivity (Kahrizi, Moradi & Momeni, 2015), improving the self-esteem and attachment relations as well as emotional intelligence in pre-elementary students (Yang, 2014 &, Yoo 2015) and heal the effects of trauma and grief (Webber & Mascaria, 2008), and behavioral problems (Yang 2014). But the effect of STT on all areas of emotional-behaviors problems not researched yet. In Iran, the effectiveness of STT is limited to hyperactivity and aggression, in groups. In this research the effects of SST on internalized disorder (such as attention and thinking problems, anxiety, depression, withdrawal/isolation and physical complaints) and the behavioral problems (such as disobedience/defiance, aggression, hyperactivity/ arousal, and social problems) were taken into account. Therefore, in this research, we aimed to see whether sand tray therapy can reduce the emotional-behavioral problems of preschool children.

## Method

The research is a randomized controlled trial research with pretest-posttest and control group design. The population was the pre-elementary children (between 5-6 years old) in Tehran in 2016. The sample was selected randomly by cluster sampling. The first 3 kindergartens were selected randomly, then all the parents (n=60) of children in the 3 kindergartens completed the Child behavior checklist (CBLC). Based on the parents CBCL scoring, those children whose scores placed between the boundary range of $65<T<69$ and clinical condition of $T>69$ were identified as children with emotional-behavioral problems (24 children), and then were randomly assigned into 2 groups (experimental and control group). The experimental group was treated with the SST individually within 10 sessions in 30-40 min (2 sessions every week), and the control group received no treatment. After the treatment, the CBCL forms were completed by the parents (father or mother) again.

The entry criteria included: achieving scores within the boundary in CBCL, the informed consent of the parents for the inclusion of their children in the program, lack of physical disorders history and serious mental problems (by taking the child's biography of the parents, and the psychiatrist's opinion) in the candidate children and also being in the age of 5-6 years old. In this research, informed consent of the parents and coaches was obtained for the children's participation in the study, and they were assured that the information collected would remain confidential and that the names of the participants would not be disclosed in the publication of the results. Also, participation in this study did not cause any harm to children. The control group received the STT after the end of the study.

## Instruments

Child behavior checklist (CBLC): The CBCL for parents was performed on all children of these three kindergartens and children who scored higher than average in this checklist were randomly assigned to two experimental and control groups. The CBLC completed by parents had 113 items, the parents were asked to rate the emotional, behavioral and social problems of the child in the past two months with grades 0, 1, and 2. This scoring has been normalized for the age category of 6-16 years old. Based on these scales, two externalizing and internalizing factors can be achieved. The scales of anxiety/depression, isolation /depression, physical complaints, thinking problems and attention problems indicate internalized problems. The scales of disobedience, aggression, and social problems reflect the externalized in Iran, researchers, using a confirmatory factor analysis and showed that the model of this scale was fit with the collected data. So that, indexes of Chi-square to degree of freedom, RMSEA, RMSE, AGFI, NFI and GFI showed that the model fit with the obtained data of Iranian population. Also, experts have reported content validity index of this scale at a desirable level (Ghasemi, 2015). The children with emotional-behavioral problems achieved higher scores on the CBCL in comparison to the normal children which shows the discriminant validity of the scale (Rescorla, Achenbach, & Ivanova, 2011). In Iran, the internal consistency of the CBLC subscales has been reported in the range of .69 to .80 (Ghasemi, 2015)

Sand tray therapy: The sand therapy included the general guidelines related to how to start the play, how to use the play instruments and how to play specified

at beginning of the session this way: "here there is a sand tray and some different toys and I want you to look carefully at them and then use them to create a picture in this tray. You make any picture you like and use every toy you favor. If you put the sand away you can see that the tray is blue and this can be used as water, sea, and lake (the therapist put the sands away with hand) and if you did not like it you cannot do that (the therapist put the sand to its original form). The contents of the sessions of sand tray therapy include Room arrangements, sand tray, and miniatures, creation in the sand tray by the children. After the child finishes working on the sand tray in each session, some questions are asked from the child in each session including Selection of a name for the tray; Allow the child to narrate the tray freely or with our questions, Sound mixing for the miniatures; Asking him to define each miniature and; How they interact with them. In all the sessions, the procedures were the same. After the end, each tray must be captured by the camera and the process of the child work was determined during the sessions. The sessions were guided indirectly and the child himself/herself was responsible and intervention of the therapist happened when asked for or felt necessary. And the changes in the trays were monitored (Linzmayer & Halpenny, 2013). It should be noted that the sessions of STT were carried out individually, and because the technique was attractive to children, they continued to work with enthusiasm until the end of the research.

## Results

In this section, first the studied variables were described and then ANCOVA statistical test was used for data analysis by SPSS software version 22. In this research 24 children, 5-6 years old were studied. 12 in the experimental group and 12 in the control group. Six girls and 6 boys were studied in each group.

**Table 1.**
*Statistical indexes of emotional-behavioral problems in and pretest and posttest*

| Group | | statistical index | pretest | posttest | Group | | statistical index | Pretest | Posttest |
|---|---|---|---|---|---|---|---|---|---|
| **anxiety / depression** | EXP | M±SD | 7/25±3/67 | 5/16±3/35 | **thinking problems** | EXP | M±SD | 2/92±4/37 | 2/90±3/57 |
| | | S-W(P) | 0.966(P=0.889) | 0.943(P=0.891) | | | S-W(P) | 0.700(P=0.001) | 0.906(P=0.086) |
| | CON | M±SD | 5/58±3/87 | 5/66±3/88 | | CON | M±SD | 2/83±2/40 | 2/75±2/63 |
| | | S-W(P) | 0.875(P=0.073) | 0.962(P=0.891) | | | S-W(P) | 0.786(P=0.007) | 0.906(P=0.213) |
| **Issolation / depression** | EXP | M±SD | 2/83±2/28 | 3.08±2/35 | **attention problems** | EXP | M±SD | 12/58±7/48 | 10/50±4/94 |
| | | S-W(P) | 0.912(P=0.229) | 0.936(P=0.082) | | | S-W(P) | 0.796(P=0.008) | 0.867(P=0.072) |
| | CON | M±SD | 1/50±1/31 | 1/83±1/46 | | CON | M±SD | 13/50±5/10 | 14/16±4/95 |
| | | S-W(P) | 0.906 | 0.876 | | | S-W(P) | 0.898(P=0.151) | 0.927(P=0.358) |
| **physical complaints** | EXP | M±SD | 2/41±1/97 | 1/83±1/58 | **disobedience** | EXP | M±SD | 5/00±3/78 | 3/58±2/78 |
| | | S-W(P) | 0.928(P=0.774) | 0.912(P=0.229) | | | S-W(P) | 0.938(P=0.451) | 0.920(P=0.285) |
| | CON | M±SD | 2/75±2/45 | 3/00±2/69 | | CON | M±SD | 4/00±2/62 | 4.09±2/87 |
| | | S-W(P) | 0.850(P=0.068) | 0.869(P=0.077) | | | S-W(P) | 0.914(P=0.234) | 0.897(P=0.148) |
| **social problems** | EXP | M±SD | 6/25±4.07 | 4/33±2/57 | **aggression** | EXP | M±SD | 11/00±7/22 | 7/75±2/56 |
| | | S-W(P) | 0.959(P=0.774) | 0.903(P=0.173) | | | S-W(P) | 0.894(P=0.135) | 0.897(P=0.148) |
| | CON | M | 6/25±2/76 | 6/83±3.09 | | CON | M±SD | 12/75±5/22 | 14/50±5/24 |
| | | S-W(P) | 0.898(P=0.151) | 0.943(P=0.544) | | | S-W(P) | 0.891(P=0.122) | 0.942(P=0.525) |

NOTE: M: Mean; S: standard deviation; EXP: experimental group, CON; control group, S-W (P) Shapiro-Wilk Statistic (level of significant)

Based on Table 1, Shapiro-Wilk's test shows that scores of attention problems in the pre-test of the experimental group and thinking problems in the pre-test of the control and experimental group are not normal. Therefore, the Outlier scores were determined and deleted with the Box Plot (figure-1) and then used the Expectation Maximization (EM) method. In this way, the mean and standard deviation of attention problems in pre-test of the experimental group changed to 11.25 and 4.88, respectively. Also, the mean and standard deviation of the thinking problems in pre-test of the experimental group changed to 2.25 and 1.86. Besides, the mean and standard deviation of the thinking problems in the control group at pretest changed to 2.68 and 1.43.

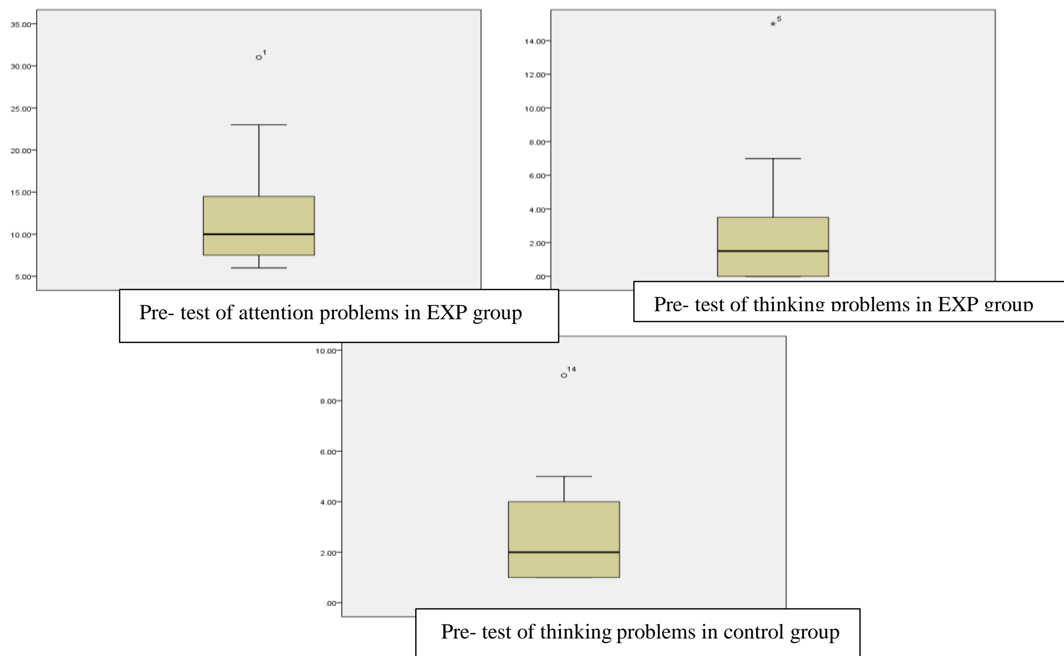


**Figure 1.**
*The Box Plot chart related to attention problems in the experimental-group and pretest scores of thinking problems in experimental and control groups after deleting the outlier data.*

In order to examine the hypothesis of the research: The STT is effective in the reduction of the children's emotional-behavioral problems, ANCOVA was performed. The Box's M statistics showed that covariance matrixes observed for the dependent variables in the two groups are the same (Box's M=62.009, F=1.028, P=0.424). Also, the assumption of the homogeneity of variances in the two groups was confirmed. The assumption of the homogeneity of the slope of the regression line between the pre-test and the post-test was established in two groups for all aspects of behavioral-emotional problems ($P>.05$). Before doing ANCOVA, independent sample t-test showed that the difference between the pre-test scores of the experimental and control groups was not significant in any of the components of emotional-behavioral problems.

Table 2 shows the ANCOVA comparing the different aspects of the emotional-behavioral problems in experimental and control groups. Table-2 shows the ANCOVA comparing the different aspects of the emotional-behavioral problems in experimental and control groups.

**Table 2.**
*The ANCOVA comparing the different aspects of the emotional-behavioral problems in experimental and control groups*

| Dependent variables | $MS_b$* | $MS_w$** | F | Sig | partial $\eta^2$ |
|---|---|---|---|---|---|
| **Anxiety / depression** | 35.42 | 1.69 | 20.88 | .001 | .599 |
| **Isolation / depression** | 1.24 | 2.84 | .42 | .526 | .022 |
| **physical complaints** | 3.43 | 1.16 | 1.58 | .229 | .104 |
| **social problems** | 23.02 | 2.64 | 8.71 | .011 | .384 |
| **thinking problems** | .471 | 4.81 | .098 | .759 | .007 |
| **attention problems** | .231 | 9.92 | .023 | .881 | .002 |
| **disobedience** | .003 | 1.29 | .002 | .944 | .001 |
| **aggression** | 61.403 | 9.79 | 6.26 | .025 | .309 |

* Mean of sum of square between group, ** Mean of sum of square within group. At all levels of the dependent variable, $df_b=2$, and $df_{w}=24$

According to the table 2, STT has been able to reduce the anxiety/depression (P<0.01), social problems (P<0.01) and aggression in preschool children (P<0.05). But STT has no significant effect on the isolation/depression, physical complaints, thinking problems, attention problems, and disobedience behaviors. The partial $\eta^2$ show that 59.9 % of the variance of anxiety/depression, and 38.4% of the variance of social problems, and 30.9% of the variance of aggression is explained by the independent variable.

## Discussion and Conclusion

The results of this research showed that STT led to reducing anxiety/depression, social problems, and aggression. In accordance with the findings of this research, previous research has been confirmed the effect of STT on reducing the trauma and grief (Webber & Mascaria, 2008), psychological problems caused by sexual abuse (Tornero & Capella, 2017), behavioral problems (Yang, 2014 & Yoo, 2015) and aggression and hyperactivity (Kahrizi et al., 2015).

STT helps children recognize their real self and gives them the opportunity for expressing the inner problems and annoying experiences through the play (Mattila, 2015). STT makes positive energy to a client and motivates her/him for resolving problems and stress in daily life (Landreth, 1982). In STT, the client can express their thoughts and experiences (Blom, 2006) and always remains the focus of the process, and the therapist, as a witness, encourage, support, and guide the builder as they depict elements of their inner world in the sand (Bertenthal-Smith, 2015, Mohammad Ismail 2005; Mitchell, 2013). This process will give children the opportunity to solve their inner conflicts, and regulate emotions, and helps them overcome their stress and anxiety and reduce social problems.

In the STT clients create and explore imaginary worlds and vocalize her/his worldview via images and stories in the sand and find the answers to their problems As a result, STT can heal discomfort and suffering of children and lead to reduction of anxiety/depression and aggression.

The results of this study showed that the STT has no significant effect on the isolation/depression, physical complaints, thinking and attention problems, and disobedience behaviors. In this research, the STT focuses only on the child, and no treatment was done on the family and peers. It seems that families and peers need to be treated, for more efficacy of this technique on children's emotional-behavioral problems. In Iran, few psychologists, counselors and child therapists are familiar with the STT, and little research has been done in this area. However, despite the limited number of studies, as mentioned, its effectiveness has been emphasized in different areas in other countries. It seems that psychologists and child counselors need to receive the necessary training in this area for widespread use of this method. It seems that implementing this method on other problems or statistical populations and other cultural backgrounds helps to increase the validity and reliability of this method.

Generally, the results of this study showed that STT could reduce some of the emotional-behavioral problems. Since no method could completely heal all emotional-social problems in children, it is recommended that the effectiveness of this technique be examined in combination with a family and school-based therapy and non-visual creative methods (such as music, poetry, yoga, and meditation) for reduction of children's problems is suggested. Besides, using this method with various populations, age, culture, gender, and socio-economic status. Also, to increase the use of SST by children, the design of its computer version is recommended to researchers.

The results of this study showed that the STT reduced anxiety/depression, aggression and the social problems significantly. But the effect of this method on thinking and attention problems, physical complaints, disobedience behaviors and isolation/depression was not confirmed. In this research due to some administrative limitation, we were not able to conduct a follow-up study, another limitation of this research was the removal of outlier data, so the generalization of data must be done with caution. Also in this study, we couldn't control the parents' health problems and parenting styles. Based on the findings of this study advice to child psychologists inform to parents about emotional-behavioral problems in children and educate parents about the benefits and use of STT at home for preventing or reducing some of the behavioral-emotional problems of children.

## References


1. Achenbach, T. M., & Rescorla, L. (2001). *Manual for the ASEBA school-age forms & profiles: An integrated system of multi-informant assessment / Thomas M. Achenbach & Leslie A. Rescorla*. Burlington, Vt.: ASEBA.
2. Armstrong, S. A., Brown, T., & Foster, R. D. (2015). Humanistic Sandtray Therapy with Preadolescents. *Journal of Child and Adolescent*

*Counseling*, *1*(1), 17–26. https://doi.org/10.1080/23727810.2015.1023167

3. Bertenthal-Smith, J. (2015). A Brief Introduction to Sandtray Therapy. *AMHCA Annual Conference. Philadelphia. 2015. Www.Trinity-Hart.Com/uploads/5/9/1/4/…/sandtray_presentation*.
4. Blom, R. (2006). *The handbook of gestalt play therapy: Practical guidelines for child therapists / Rinda Blom; foreword by Hannie Schoeman*. London: Jessica Kingsley Publishers.
5. Drewes, A. A., & Schaefer, C. E. (2010). *School-based play therapy* (2nd ed.). Hoboken, N.J.: Wiley; Chichester: John Wiley [distributor].
6. Ghasemi O, & Khaki A. (2015). Psychometric properties of the semiotics scale of behavioral-emotional problems in elementary school students, preschool and primary school studies. *The Study of Elementary and Pre-Elementary*, *1*(3), 51–56. Retrieved from soece.atu.ac.ir/article_7277.html. (In Persian).
7. Homeyer, L., & Sweeney, D. S. (2016). *Sandtray therapy: A practical manual / Linda Homeyer, Daniel Sweeney* (Third edition). London: Routledge.
8. Ivanova, M. Y., Achenbach, T. M., Rescorla, L. A., Turner, L. V., Árnadóttir, H. A., Au, A., . . . Zasępa, E. (2015). Syndromes of collateral-reported psychopathology for ages 18-59 in 18 Societies. *International Journal of Clinical and Health Psychology: IJCHP*, *15*(1), 18–28. https://doi.org/10.1016/j.ijchp.2014.07.001
9. Kahrizi, S. A., Moradi, A., & Momeni Kh. (2015). The effectiveness of sand play therapy on aggression/hyperactivity preschoolers. *Journal of Culture Counselling and Psychotherapy*, *18*, 127–150. (In Persian).
10. Kristoffersen, J. H.G., Obel, C., & Smith, N. (2015). Gender differences in behavioral problems and school outcomes. *Journal of Economic Behavior & Organization*, *115*, 75–93. https://doi.org/10.1016/j.jebo.2014.10.006
11. Landreth, G. L. (1982). *Play therapy: Dynamics of the process of counseling with children / edited by Garry L. Landreth*. Springfield, Ill.: Thomas.
12. Landreth, G. L., Ray, D. C., & Bratton, S. C. (2009). Play therapy in elementary schools. *Psychology in the Schools*, *46*(3), 281–289. https://doi.org/10.1002/pits.20374
13. Linzmayer, C., & Halpenny, E. A. (2013). It was fun": An evaluation of sand tray pictures, an innovative visually expressive method for researching children's experiences with nature. *International Journal of Qualitative Methods*, *12*, 310–337. Retrieved from http://ejournals.library.ualberta.ca/index.php/IJQM/article/view/17085/15435
14. Linzmayer, C. D., & Halpenny, E. A. (2013). "It was Fun": An Evaluation of Sand Tray Pictures, an Innovative Visually Expressive Method for Researching Children's Experiences with Nature. *International Journal of Qualitative Methods*, *12*(1), 310–337. https://doi.org/10.1177/160940691301200115
15. Mattila, C. A. (2015). *Cross-Cultural Sand Tray Therapy for Somali Refugees. Masters Project.* The Faculty of the Adler Graduate School.
16. Mitchell, D. (2013). Exploring the Benefits of Sand Tray Therapy for Adults. Retrieved from http://www.goodtherapy.org/blog/sand-tray-therapy-adults-benefits-0414134
17. Mohammad Ismail, A. (2005). *Play therapy theories, methods and clinical applications*. Tehran: Danzheh. (In Persian).
18. Ogden, T., & Hagen, K. A. (2008). Treatment effectiveness of Parent Management Training in Norway: A randomized controlled trial of children with conduct problems. *Journal of Consulting and Clinical Psychology*, *76*(4), 607–621. https://doi.org/10.1037/0022-006X.76.4.607
19. Ramsey, L. C. (2014). Windows and Bridges of Sand: Cross-cultural Counseling Using Sand Tray Methods. *Procedia - Social and Behavioral Sciences*, *159*, 541–545. https://doi.org/10.1016/j.sbspro.2014.12.421
20. Rescorla, L. A., Achenbach, T. M., Ivanova, M. Y., Harder, V. S., Otten, L., Bilenberg, N., & Verhulst, F. C. (2011). International comparisons of behavioral and emotional problems in preschool children: Parents' reports from 24 societies. *Journal of Clinical Child and Adolescent Psychology: the Official Journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53*, *40*(3), 456–467. https://doi.org/10.1080/15374416.2011.563472
21. Rutter, M., Bishop, D. V. M., Pine, D. S., Scott, S., Stevenson, J., Taylor, E., & Thapar, A. (2008). *Rutter's Child and Adolescent Psychiatry*. Oxford, UK: Blackwell Publishing Ltd.
22. Tornero, M. D. L. A., & Capella, C. (2017). Change during Psychotherapy through Sand Play Tray in Children That Have Been Sexually Abused. *Frontiers in Psychology*, *8*, 617. https://doi.org/10.3389/fpsyg.2017.00617
23. Webber, J. M., & Mascari, J. B. (2008). Sand tray therapy and the healing process in trauma and grief counseling. *Based on a Program Presented at the ACA Annual Conference & Exhibition,*

*Honolulu, HI. Retrieved June 27, 2008, from Http://counselingoutfitters.Com/vistas/vistas08/Webber.Htm*.

24. Yang, Y.-s. (2014). The Effects of Sandplay Therapy on the Behavioral Problems, Self-esteem, and Emotional Intelligence of Children in Grandparents-grandchildren Families in Rural Korean Areas. *Journal of Symbols & Sandplay Therapy*, *5*(1), 7–13. https://doi.org/10.12964/jsst.130012
25. Yoo, S.-y. (2015). The Effects of Sandplay Therapy on the Anxiety, Attachment Relations, and Interpersonal Stress of Children of Alcoholic Fathers. *Journal of Symbols & Sandplay Therapy*, *6*(1), 25–42. https://doi.org/10.12964/jsst.150002
26. Zarei, A. (2012). The impact of sand play therapy in reducing the anxiety of students with mental retardation. *Master's Thesis, School of Psychology and Social Sciences, Islamic Azad University of Tehran*. Retrieved from ganj.irandoc.ac.ir/articles/585647 (In Persian).

CONSORT

TRANSPARENT REPORTING of TRIALS

**CONSORT: Flow Diagram**

**Enrollment:**

Before the research was started, informed consent was obtained from parents for the participation of their children in the study.

1. Assessed for eligibility: all the parents of the pre-elementary (n=60) children completed the CBCL forms.

Based on the parents CBCL scoring, those children whose scores placed between the boundary range of $65<T<69$ and clinical condition of $T>69$ were determined.

**Randomized allocation (n= 24)**

12 participants were assigned to the experimental group and received sand tray therapy in ten session (2 times a week), individually

12 participants were assigned to the control group and did not receive intervention.

**Follow-Up**

Unfortunately, due to executive problems, we were not able to conduct a follow-up study.

Unfortunately, due to executive problems, we were not able to conduct a follow-up study.

**Analysis**

ANCOVA statistical test was used for data analysis by SPSS software version 22.

**Results**

Sand play therapy has been able to reduce the anxiety / depression ($P<0.01$), social problems ($P<0.01$) and aggression in preschool children

Figure 2: CONSORT Flow Diagram