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# The Effect of Choice Theory-Based Play Therapy on Aggression and Executive Functions in Single-Parent Children with Depression Symptoms

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A B S T R A C T

**Purpose:** This study aimed to investigate the effectiveness of choice theory-based play therapy in reducing aggression and improving executive functions in single-parent children exhibiting symptoms of depression.

**Methods and Materials:** Using a single-case experimental design, this applied research was conducted among children aged 6 to 8 from single-parent households in Birjand. After applying inclusion and exclusion criteria, three children were purposefully selected. Intervention was delivered over ten weekly 90-minute sessions using Nadery's choice theory-based play therapy protocol with mothers actively participating as co-therapists. Pre-test, four post-tests, and three follow-up assessments were administered. The data were collected using the Parent-Report BRIEF (executive functions), Vahedi et al.'s Aggression Questionnaire, and the Children's Depression Inventory (CDI), and analyzed using visual, graphical, and statistical techniques (effect size, stable change index).

**Findings:** The results showed a substantial reduction in aggression levels, with average improvement percentages of 66% post-intervention and 67% at two-month follow-up. All participants moved from above to below the clinical cut-off for aggression. Executive function improvements averaged 24% across participants, with notable gains in behavioral regulation, emotional control, and planning. Effect sizes ranged from 0.43 to 1.97. The intervention demonstrated consistent within-case and between-case effectiveness across all measures.

**Conclusion:** Choice theory-based play therapy significantly enhanced executive functioning and reduced aggressive behavior in single-parent children with depressive symptoms. Involving parents as co-therapists and targeting core psychological needs through structured play proved to be a promising therapeutic approach.

***Keywords:*** *Choice theory, play therapy, executive functions, aggression, single-parent children, depression symptoms.*

## 1. Introduction

Childhood marks a foundational stage in human development, encompassing crucial emotional, social, and cognitive transformations that significantly shape future well-being. Within this developmental trajectory, the quality of interpersonal relationships, particularly within the family unit, plays a determining role in a child's psychological health. However, the rising incidence of single-parent families, often stemming from divorce, death, or separation, introduces a heightened risk for developmental challenges such as emotional dysregulation, aggression, and executive function impairments in children (Ahmadi Tabar et al., 2021; Hossein Panahi & Goodarzi, 2018). The absence of one parental figure can result in disruptions in attachment security, affective communication, and behavioral regulation, especially when maternal psychological resources are strained. In such contexts, therapeutic interventions that engage both the child and the caregiving parent have gained prominence as targeted strategies to address these complex emotional and behavioral disturbances.

Among various psychological interventions, play therapy has emerged as an effective and developmentally sensitive modality for addressing emotional and behavioral difficulties in children. Play, as a natural language of children, facilitates emotional expression and the integration of cognitive processes in a non-threatening manner. More specifically, cognitive-behavioral play therapy (CBPT) and reality therapy approaches have shown substantial efficacy in managing aggression and enhancing executive functions among various pediatric populations (Aminian & Asli Azad, 2024; Dado & Emadian, 2024; Taghizadeh et al., 2024; Zolrahim & Azmoudeh, 2020). CBPT blends behavioral techniques with structured play to improve goal-setting, impulse control, and emotional regulation. When applied within the framework of Choice Theory—an approach emphasizing internal control, personal responsibility, and need-fulfillment—play therapy gains an additional therapeutic depth. Choice Theory posits that all human behavior is purposeful and rooted in the attempt to meet five genetically encoded needs: love and belonging, power, freedom, fun, and survival (Davis, 2011; Sori & Robey, 2013). By aligning play therapy with these principles, children are offered an experiential platform to safely rehearse adaptive behaviors and internalize more effective coping strategies.

In populations of children from single-parent families, where instability, emotional deprivation, and behavioral outbursts are more likely to emerge, the significance of interventions grounded in Choice Theory becomes even more pronounced. Research has underscored the relationship between emotional dysregulation and executive function deficits in such children, with impairments manifesting in working memory, cognitive flexibility, and impulse control—areas critical for academic and social competence (Farid et al., 2021; Roghani et al., 2022; Wong et al., 2022; Wong et al., 2023). Dysfunctional executive processes have also been linked to elevated aggression levels, particularly in children who struggle to anticipate consequences or regulate emotional impulses (Khandani et al., 2023). Executive function development is not only neurocognitive in nature but also deeply influenced by environmental and relational factors, especially during early and middle childhood. This developmental plasticity makes executive functions an optimal target for early interventions like play therapy, which are embedded in relational and emotionally secure contexts.

A growing body of evidence supports the utility of play-based approaches in improving behavioral regulation and executive control, particularly when therapy is tailored to children's specific psychopathological profiles. For example, Shiroodaghaei et al. (2020) found that cognitive-behavioral and parent-child interaction therapies significantly improved executive functioning and reduced oppositional behaviors in children with Oppositional Defiant Disorder (Shiroodaghaei et al., 2020). Similarly, Esmailzadeh (2019) demonstrated that parenting education rooted in Choice Theory principles led to meaningful improvements in parent-child relationships and a reduction in defiant behaviors (Esmailzadeh, 2019). These findings suggest that the combined use of parental education and structured therapeutic play can produce synergistic outcomes in modifying child behavior and improving cognitive regulation capacities.

In a similar vein, several studies have indicated the dual effectiveness of play therapy in addressing aggression and enhancing executive function among children with diverse developmental challenges. Mehrafza et al. (2022) reported that cognitive-behavioral play therapy significantly reduced aggression and anxiety in children with intellectual disabilities (Mehrafza et al., 2022). Likewise, Soltani and Farhadi (2021) found filial therapy—which actively involves parents in the therapeutic process—to be effective in decreasing computer game addiction and aggression


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among preschoolers (Soltani & Farhadi, 2021). This body of work reflects the therapeutic value of engaging caregivers, particularly mothers, as co-therapists, reinforcing the consistency and emotional resonance of the intervention.

Incorporating parent participation becomes even more vital when addressing children from single-parent households, who may lack sufficient emotional scaffolding due to familial disruptions. Parent-centered interventions based on Choice Theory provide not only behavioral tools but also conceptual frameworks for parents to understand and address their children's unmet needs. As Hosseini Dastjerdi et al. (2024) emphasized, integrating resilience training and cognitive-behavioral techniques within play therapy offers significant benefits in reducing anxiety and improving emotional expression and executive functioning in children undergoing stressful conditions, such as dental procedures or chronic illness (Hosseini Dastjerdi et al., 2024). These findings resonate with the therapeutic goals for children experiencing chronic emotional adversity in single-parent settings, where behavioral issues are frequently compounded by depression and internalizing disorders.

Other studies also demonstrate that play therapy grounded in Choice Theory offers a structure that fosters self-awareness, emotional control, and cognitive flexibility in young children. For instance, Ahmadi Tabar et al. (2021) found that group-based reality therapy was effective in reducing both aggression and anxiety in child laborers, highlighting its utility in vulnerable and high-risk populations (Ahmadi Tabar et al., 2021). Similarly, Abdollahi Boghratabadi (2023) confirmed the positive effects of Gestalt play therapy on reducing aggression and test anxiety in students with learning disorders (Abdollahi Boghratabadi, 2023). These studies underscore the relevance of emotion-oriented play interventions in improving maladaptive behaviors and psychological outcomes in disadvantaged youth.

The conceptual foundation of Choice Theory encourages children to transition from external control psychology—where behavior is shaped by punishment and reward—toward internal control, where behaviors are driven by self-awareness and purposeful need fulfillment. As Sori and Robey (2013) argue, the therapeutic integration of reality therapy and sandplay provides a unique developmental bridge that links symbolic expression with cognitive restructuring (Sori & Robey, 2013). Such integration becomes particularly impactful when dealing with depression-linked aggression in single-parent children, where cognitive and emotional domains often intersect. The therapeutic potential of such integrative approaches is well-documented in educational and clinical contexts, especially when interventions aim to reduce behavioral symptoms while simultaneously enhancing cognitive functioning (Dado & Emadian, 2024; Tavakoli et al., 2024).

Choice Theory-Based Play Therapy is further strengthened by its adaptability to a variety of psychological presentations. Riahi (2017) applied group counseling based on Choice Theory to successfully reduce internet addiction in adolescents, indicating its broader applicability beyond traditional behavioral issues (Riahi, 2017). Additionally, Yousefi Shahir et al. (2020) demonstrated that both narrative therapy and parent-child play therapy significantly reduced aggression and social fear in children with symptoms of oppositional defiant disorder (Yousefi Shahir et al., 2020). These findings support the relevance of combining Choice Theory's cognitive-behavioral roots with relationally rich modalities such as play, especially when targeting complex behavior-emotion syndromes in childhood.

In summary, the literature firmly establishes that cognitive-behavioral and Choice Theory-based play therapies are effective tools for addressing aggression and executive dysfunctions in children. These interventions are particularly valuable for single-parent children with depressive symptoms, a group uniquely vulnerable to emotional and behavioral dysregulation. The inclusion of parents as co-therapists enhances the intervention's consistency and emotional salience, thereby improving both therapeutic alliance and treatment outcomes. Given the evidence of its efficacy across various domains and populations, this study aims to investigate the specific effects of Choice Theory-Based Play Therapy on aggression and executive functions in single-parent children exhibiting symptoms of depression.

## 2. Methods and Materials

### *2.1. Study Design and Participants*

This study adopted a single-case quasi-experimental design with an applied orientation, targeting a specific population of single-parent children exhibiting symptoms of depression. The research was conducted in Birjand, Iran, and involved private elementary school students aged between 6 and 8 years who were living exclusively with their mothers. The selection process was based on purposeful sampling, with inclusion and exclusion criteria meticulously applied to ensure homogeneity and appropriateness of participants. Among the key inclusion criteria were: the child's age (6–8


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years), the presence of depressive symptoms as measured by Maria Kovacs' Children's Depression Inventory (CDI), normal cognitive function assessed through school admission evaluations, and the mother's educational background (minimum of a high school diploma and maximum of a master's degree in psychology or related fields). It was also required that neither the child nor the mother was undergoing psychiatric treatment or any concurrent psychological intervention. Based on school records and maternal interviews, nine children were initially screened, of which five met all conditions after the CDI assessment. Ultimately, three children who consistently met the requirements and completed all procedures were retained for the study. The therapy spanned ten weeks, during which mothers participated as active co-therapists, delivering interventions alongside the researcher.

### *2.2. Measures*

The first instrument used in this study was the Behavior Rating Inventory of Executive Function (BRIEF) – Parent Form. Developed by Guy et al. (2000), the BRIEF is a standardized questionnaire designed to assess executive functioning in children and adolescents aged 5 to 18 years. This parent-report tool consists of 86 items rated on a three-point Likert scale (Never = 1, Sometimes = 2, Always = 3) and evaluates behavioral regulation and metacognition through subscales such as inhibition, shifting, emotional control, initiation, working memory, planning, organization, and monitoring. The BRIEF has demonstrated high internal consistency with Cronbach's alpha values ranging from 0.87 to 0.94 across subscales. Its clinical utility in capturing deficits in executive function behaviors at home makes it especially suitable for research involving young children. In the current study, mothers were trained to accurately complete the BRIEF at baseline, across four intervention points, and during follow-up periods to gauge changes in executive functioning.

The second measurement tool was the Preschool Aggression Questionnaire developed by Vahedi et al. (2008), which is designed to assess the intensity and types of aggressive behaviors in children from the perspective of parents and teachers. This instrument contains 34 items, rated on a five-point Likert scale ranging from 0 (Never) to 4 (Almost daily). It measures four key dimensions of aggression: verbal-aggressive aggression, physical-aggressive aggression, relational aggression, and impulsive anger. The reliability of this questionnaire has been thoroughly validated, with Cronbach's alpha coefficients of 0.98 for the overall scale and between 0.88 to 0.94 for the subscales. The instrument's strong psychometric properties and parent-report format make it particularly relevant for the target population in this study. Mothers completed this questionnaire at multiple intervals during the baseline phase, throughout the ten sessions of intervention, and during two post-treatment follow-up stages.

The third tool utilized was the Children's Depression Inventory (CDI) developed by Maria Kovacs. This 27-item self-report scale is adapted from Beck's Depression Inventory and is designed to assess the presence and severity of depressive symptoms in children and adolescents. The CDI covers a range of symptom categories, including negative mood, interpersonal problems, anhedonia, low self-esteem, and functional difficulties. Each item provides three response choices, scored 0 (absence of symptoms), 1 (moderate symptoms), or 2 (severe symptoms), leading to a total score range of 0 to 54. Higher scores reflect more severe depressive symptoms. The CDI has demonstrated high validity and reliability, with a Cronbach's alpha of 0.86 in previous studies. In the present study, it served as the primary screening instrument to identify eligible participants, confirming the presence of depressive symptoms prior to initiating the therapeutic intervention.

### *2.3. Intervention*

The intervention protocol implemented in this study was based on Nadery's Choice Theory-Based Play Therapy and consisted of ten structured weekly sessions, each lasting 90 minutes, conducted with the active participation of the children's mothers as co-therapists. The sessions were designed to address five fundamental psychological needs—love and belonging, power, freedom, fun, and survival—through interactive play, structured exercises, and parent-child bonding activities. Initial sessions focused on introducing the principles of choice theory, educating parents on emotional responsiveness, and establishing therapeutic play routines. Subsequent sessions introduced specific behavioral techniques such as the Behavior Machine, Emotion Wheel, three-step behavioral interventions, and consequence-based discipline, emphasizing consistent limit setting and positive reinforcement. Activities included role-playing, storytelling, puppet shows, and toy selection to facilitate emotional expression and cognitive regulation in children. Throughout the program, parents were assigned weekly homework,


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required to complete self-assessment forms, and encouraged to record and review play sessions to reflect on their child's behavioral progress. The protocol concluded with a review of learned skills, strategies for long-term maintenance, and guidance on transitioning out of structured therapy while preserving therapeutic gains.

### *2.4. Data Analysis*

The data collected throughout the study were analyzed using both visual and graphical methods in line with single-case experimental design protocols. The primary analytical approach included visual inspection of the score trajectories across baseline, intervention, and follow-up phases for each participant. Graphical representations were constructed to illustrate the changes in aggression and executive function scores over time, providing a clear depiction of trends, level shifts, and consistency across measurement points. Quantitative metrics were also applied, such as calculating the percentage of improvement for each participant and the overall sample. The stability index was utilized to assess the degree of change consistency, while effect sizes were computed to determine the magnitude of intervention outcomes. Both within-case and between-case analyses were conducted to ensure the reliability and generalizability of the observed effects. This mixed approach allowed for a nuanced understanding of therapeutic impact, balancing statistical rigor with the depth of individual behavioral trajectories.

## 3. Findings and Results

The first hypothesis examined whether Choice Theory-Based Play Therapy would reduce aggression in single-parent children with depressive symptoms. Based on the scores obtained from the aggression questionnaire, the percentage of improvement by Session 10 was 64% for Participant 1, 68% for Participant 2, and 58% for Participant 3, resulting in an overall improvement rate of 66%. Moreover, the improvement percentages during the two-month follow-up phase were 66% for Participant 1, 70% for Participant 2, and 58% for Participant 3, with a combined follow-up improvement of 67%. Notably, all participants' scores prior to the intervention were above the clinical cut-off point, whereas after the intervention, their scores fell below this threshold. These results indicate that the therapeutic changes were not only significant during the course of the intervention but also sustained over time. A detailed comparison of participant scores and percentage improvements is presented in the following table.

**Table 1**

*Participant Scores and Improvement Percentages in the Aggression Questionnaire*

| SPIN | Participant 1 | Participant 2 | Participant 3 |
|---|---|---|---|
| Baseline 1 | 44 | 47 | 45 |
| Baseline 2 | 44 | 46 | 45 |
| Session 2 | 43 | 46 | 44 |
| Session 4 | 30 | 34 | 32 |
| Session 6 | 25 | 27 | 26 |
| Session 8 | 21 | 20 | 23 |
| Session 10 | 16 | 15 | 19 |
| Improvement % | 64% | 68% | 58% |
| 1-Month Follow-up | 16 | 14 | 19 |
| 2-Month Follow-up | 15 | 14 | 19 |
| Improvement % Follow-up | 66% | 70% | 58% |

Figure 1 illustrates the downward trend in aggression among all participants across three distinct assessment phases: pre-test (baseline), post-test (after intervention), and follow-up (two months after intervention). This visual representation reinforces the effectiveness of the intervention, showing consistent and maintained reductions in aggression throughout and beyond the treatment process.


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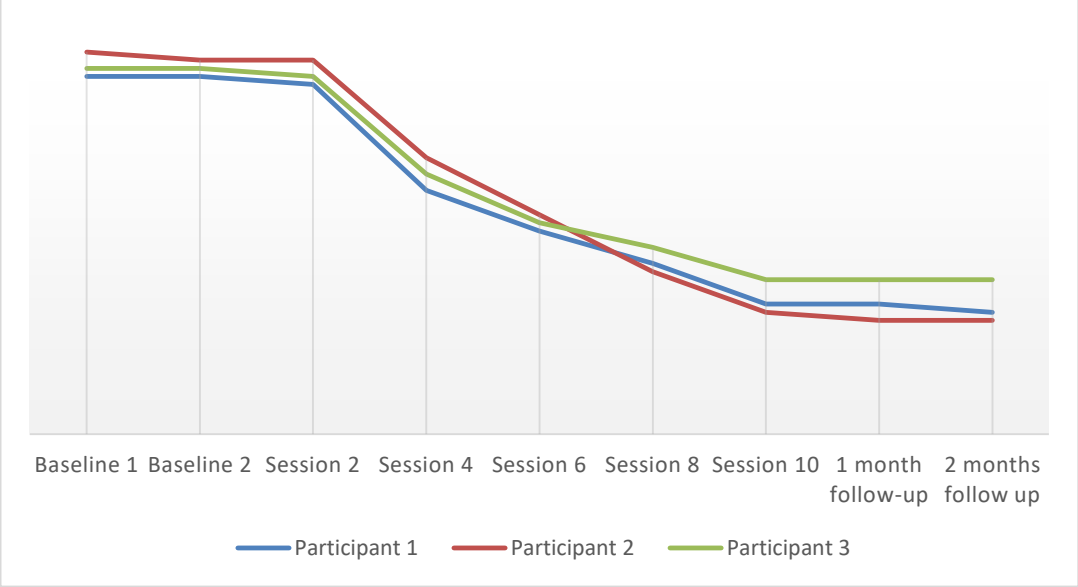
**Figure 1**

*Process of Score Changes in the Aggression Questionnaire*




The second hypothesis focused on whether Choice Theory-Based Play Therapy improves executive functions in single-parent children with depressive symptoms. Data were analyzed using the Behavior Rating Inventory of Executive Function (BRIEF) – Parent Form. The findings showed meaningful improvement across all three participants, with average improvement in executive functioning assessed at 24%. The scores for each participant across the assessment points are presented below.

**Table 2**

*Data from the Behavior Rating Inventory of Executive Function (Parent Form) (BRIEF)*

| Participant | Baseline 1 | Baseline 2 | Session 2 | Session 4 | Session 6 | Session 8 | Improvement % |
|---|---|---|---|---|---|---|---|
| Participant 1 | 86 | 84 | 75 | 78 | 70 | 64 | 25% |
| Participant 2 | 93 | 90 | 92 | 80 | 82 | 72 | 22% |
| Participant 3 | 83 | 79 | 70 | 73 | 69 | 62 | 25% |

To quantify the magnitude of change in executive function scores, the mean, standard deviation, and effect sizes were calculated. These are summarized in the table below.

**Table 3**

*Mean, Standard Deviation, and Effect Size Related to the BRIEF Questionnaire Data*

| Participant | Mean (Baseline) | Mean (Treatment) | SD | Effect Size |
|---|---|---|---|---|
| Participant 1 | 85 | 78 | 7.77 | 0.43 |
| Participant 2 | 91.5 | 81.5 | 7.07 | 0.71 |
| Participant 3 | 81 | 68.5 | 4.73 | 1.97 |



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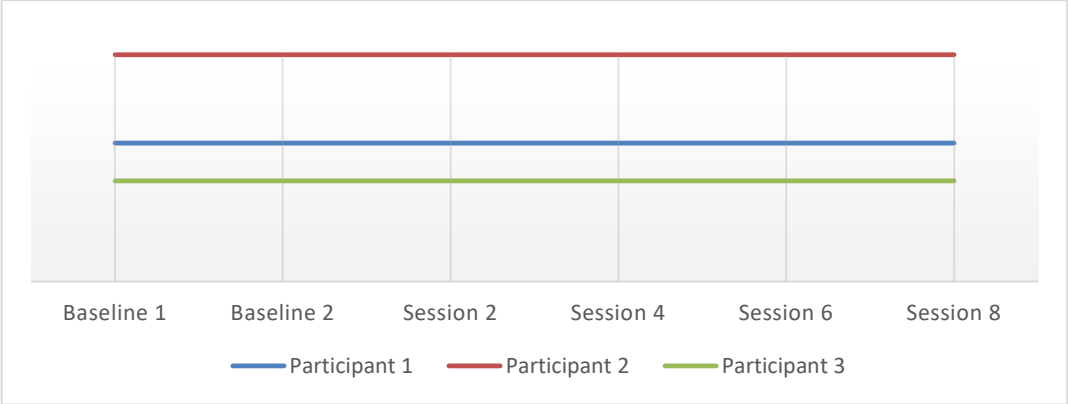
**Figure 2**

*Improvement of Executive Function Problems Using the BRIEF Questionnaire*




Visual analysis of Figure 2 shows a marked improvement in executive function scores across all participants. For Participant 1, a clear change in data level and downward trend is observed, with the average baseline score of 85 reducing to 78 during the intervention, resulting in a 25% reduction in executive dysfunction and an effect size of 0.43. Participant 2 also demonstrated meaningful improvement, with a baseline mean of 91.5 reduced to 81.5 during the intervention phase, indicating a 22% improvement and an effect size of 0.71. Participant 3 showed the most notable change, with a drop from a baseline average of 81 to 68.5, yielding a 25% improvement and an effect size of 1.97. In all three cases, although fluctuations were noted, the general trajectory of the scores reflected a consistent reduction in executive function deficits.

Further comparison of executive function subdomains revealed targeted areas of improvement following the intervention. These comparisons are outlined below.

**Table 4**

*Comparison of Mean Scores of Executive Function Dimensions*

| Variable Dimension | Mean Scores Before Intervention | Mean Scores After Intervention |
|---|---|---|
| Inhibition | 0.40 | 0.60 |
| Attention Shifting | 0.30 | 0.50 |
| Emotional Control | 0.30 | 0.70 |
| Initiation | 0.10 | 0.20 |
| Working Memory | 0.10 | 0.60 |
| Planning | 0.40 | 0.45 |
| Organization | 0.30 | 0.80 |
| Monitoring | 0.10 | 0.15 |

These findings indicate that prior to the intervention, participants demonstrated below-average performance in nearly all dimensions of executive functioning, particularly in working memory, initiation, and organization. Following the intervention, significant gains were observed in emotional control, working memory, and organization. While improvement was evident across all domains, the most pronounced changes occurred in areas directly related to behavioral regulation and planning. The results confirm that play therapy not only helped reduce aggression but also facilitated cognitive and emotional development by enhancing key components of executive functioning.

## 4. Discussion and Conclusion

The present study aimed to evaluate the effectiveness of Choice Theory-Based Play Therapy in reducing aggression and improving executive functions in single-parent children with symptoms of depression. The findings strongly confirmed both hypotheses. The intervention resulted in a considerable decrease in aggressive behaviors, with all three participants showing clinically significant reductions by the tenth session and further stability during the two-month follow-up. Likewise, executive functions—particularly in domains such as emotional control, planning, and working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memory—demonstrated marked improvements. These outcomes affirm the potential of play therapy grounded in Choice Theory to address both behavioral and cognitive-emotional dysregulation in vulnerable child populations.

The reduction in aggression observed in this study aligns with a growing body of literature confirming the effectiveness of play therapy in managing externalizing behaviors. Similar to the findings of Soltani and Farhadi (2021), who showed that filial therapy effectively reduced aggression and behavioral dependency in preschoolers, the current intervention demonstrated that engaging parents as co-therapists in structured, emotionally meaningful play fosters behavioral regulation (Soltani & Farhadi, 2021). In particular, the play activities used in this study—incorporating tools like emotion wheels, structured behavioral games, and symbolic storytelling—provided children with a safe medium to externalize and process aggressive impulses. This finding is further supported by the results of Mehrafza et al. (2022), who demonstrated that cognitive-behavioral play therapy significantly decreased aggression and anxiety in children with intellectual disabilities (Mehrafza et al., 2022). Additionally, the integration of Choice Theory, which emphasizes fulfilling unmet psychological needs through internal control and responsibility, likely played a pivotal role in facilitating this behavioral transformation (Davis, 2011; Sori & Robey, 2013).

The data from the aggression questionnaire across pre-test, post-test, and follow-up stages also reveal sustained changes, indicating that the intervention's effects were not merely temporary. This long-term impact is comparable to the findings of Ahmadi Tabar et al. (2021), who demonstrated the lasting effects of group-based reality therapy in reducing aggression in high-risk children such as child laborers (Ahmadi Tabar et al., 2021). The current study's design, which included ten weeks of intensive intervention and post-intervention follow-up, contributed to this sustained outcome by reinforcing learned behaviors over time. Moreover, the integration of daily structured play at home allowed for continuous reinforcement of therapeutic gains, in line with the conclusions of Esmailzadeh (2019), who emphasized the importance of parental involvement in Choice Theory-based parenting interventions (Esmailzadeh, 2019).

Regarding executive functions, the results showed substantial improvement in working memory, inhibition, and emotional regulation among participants. These outcomes align with findings from studies such as Farid et al. (2021) and Wong et al. (2022), who reported that both cognitive-behavioral and child-centered play therapies significantly enhanced executive functioning in children with learning and attentional difficulties (Farid et al., 2021; Wong et al., 2022). The observed improvements in the BRIEF scores in this study reflect enhanced cognitive flexibility and impulse control—two central domains of executive function that are commonly compromised in children with emotional and behavioral challenges. Importantly, these cognitive improvements also contributed indirectly to the reduction in aggressive behavior, supporting the theoretical linkage between executive control and behavioral regulation established in prior research (Roghani et al., 2022).

Moreover, the effect sizes calculated in this study (ranging from moderate to large) validate the clinical significance of the intervention. The visual analysis of the BRIEF questionnaire data showed both level and trend changes across all three participants, indicating true behavioral transformation rather than random fluctuation. These findings resonate with the conclusions of Khandani et al. (2023), who compared play therapy and executive function training, and found both approaches effective in enhancing mathematical learning through improved executive skills in students with learning disabilities (Khandani et al., 2023). The consistency across case results in this study strengthens the generalizability of these findings to similar populations, particularly children living in emotionally constrained, single-parent environments.

The role of parental involvement in the success of this intervention also warrants emphasis. Unlike traditional child-only therapy models, the approach used here was parent-centered and grounded in the co-therapist role of the mother. This approach aligns with findings by Hosseini Dastjerdi et al. (2024), who showed that resilience-based and cognitive-behavioral play therapies were more effective when parents were engaged as active participants (Hosseini Dastjerdi et al., 2024). Parent-led play therapy sessions create consistency in therapeutic messages and foster a secure attachment environment, both of which are essential for emotional and cognitive development in young children. Additionally, the mothers' education in the principles of Choice Theory enhanced their ability to understand their children's needs and apply more effective parenting strategies, consistent with the findings of Hossein Panahi and Goodarzi (2018) who reported a reduction in parent-child conflicts following Choice Theory-based parental training (Hossein Panahi & Goodarzi, 2018).


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The play-based structure of the sessions was particularly beneficial in targeting deficits in emotional regulation, as seen in the notable improvements in the executive subdomains of emotional control and inhibition. These findings correspond with those reported by Tavakoli et al. (2024), who observed that both cognitive-behavioral and Gestalt play therapies were effective in managing impulsivity and enhancing cognitive flexibility in aggressive male students (Tavakoli et al., 2024). Similarly, the current study demonstrated that the structured use of therapeutic play tools, such as storytelling and symbolic play, facilitated the internalization of self-regulatory strategies in children. The findings also echo the work of Yousefi Shahir et al. (2020), who found that play therapy reduced aggression and social fear in children with oppositional defiant tendencies, highlighting its role in addressing both internalizing and externalizing behaviors (Yousefi Shahir et al., 2020).

The use of Choice Theory as the philosophical backbone of the intervention also supports deeper behavioral change. According to Glasser's model, children engage in maladaptive behaviors when their basic psychological needs are unmet. The therapeutic process, therefore, sought to redirect children from ineffective need-fulfillment strategies, such as aggression, toward more constructive behaviors such as emotional expression, negotiation, and creative play. The successful implementation of this approach in the current study mirrors the findings of Faccily and Krash (2014), who noted that reality therapy interventions led to improved adaptive behavior in individuals with substance abuse issues—a population also characterized by impulsivity and poor self-regulation (Faccily & Krash, 2014).

Overall, the discussion of findings indicates a strong alignment between the outcomes of this study and existing literature, confirming the robustness of Choice Theory-Based Play Therapy in managing complex behavioral and cognitive-emotional difficulties in children, particularly those from single-parent families with depressive symptoms. The combination of therapeutic play, parental involvement, and a need-based psychological framework allowed for multidimensional improvements in child behavior and cognition.

Despite the promising findings, this study is not without limitations. The small sample size, characteristic of single-case experimental designs, limits the statistical generalizability of the results. Although rich in clinical insight, the study involved only three participants, which reduces the power to extrapolate findings to broader populations. Additionally, the reliance on parent-reported measures such as the BRIEF and aggression questionnaire introduces the possibility of subjective bias, especially as the mothers were also involved in the intervention. Furthermore, the study did not include a control group, which restricts the ability to attribute observed changes solely to the intervention. Another limitation lies in the short duration of follow-up; although the post-treatment effects were sustained for two months, longer-term impacts remain unknown.

Future studies should expand the sample size and adopt randomized controlled trial designs to increase both internal and external validity. Including a control or comparison group (e.g., no treatment, alternative therapy) would strengthen causal interpretations. Researchers should also consider incorporating objective performance-based measures of executive functioning alongside parent reports to reduce informant bias. Furthermore, future research could explore the differential effects of each component of the intervention—Choice Theory training for parents, structured play activities, and parental co-therapy involvement—to better isolate the most effective elements. Finally, longitudinal studies assessing outcomes six months or one year post-intervention would be invaluable in evaluating the durability of treatment gains over time.

In clinical settings, therapists working with emotionally vulnerable children—especially those in single-parent households—should consider adopting Choice Theory-Based Play Therapy as a comprehensive intervention model. Incorporating parents as active co-therapists not only empowers them but also reinforces therapeutic learning in naturalistic environments. Training workshops for parents and educators in the principles of Choice Theory could be integrated into psychoeducation programs to enhance their understanding of children's behavioral motivations. Moreover, school counselors and psychologists should collaborate with families to implement structured therapeutic play sessions as a supplement to traditional classroom behavior interventions. This integrative approach offers a promising avenue for early, sustainable, and holistic emotional and cognitive development in at-risk children.

## Authors' Contributions

All authors significantly contributed to this study.

## Declaration



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In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

## Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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## Declaration of Interest

The authors report no conflict of interest.

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## Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the interview and participated in the research with informed consent.

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