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Play Therapy and Behavioral Outcomes: A Psychology Study on Children with ADHD

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Abstract

The present study investigates the impact of structured play therapy on behavioral outcomes among children diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) in Bihar, India. A total of 62 children, aged 6–12 years, were randomly selected from Patna city (urban) and Nalanda district (rural). Employing a mixed-methods, cross-sectional design, both quantitative tools, such as the Conners' Parent Rating Scale–Revised (CPRS-R) and the Strengths and Difficulties Questionnaire (SDQ), and qualitative interviews with parents and teachers were utilized. Children participated in up to ten sessions of structured play therapy conducted in clinics, schools, or through online modalities. Results revealed significant improvements in inattention, hyperactivity, and overall behavioral difficulties, alongside a marked increase in prosocial behavior. Qualitative findings further highlighted enhanced self-regulation, reduced impulsivity, improved peer interactions, and greater compliance with instructions. Teacher and parent reports substantiated these improvements, with minimal adverse effects reported, primarily related to fatigue and logistical challenges. The findings suggest that play therapy offers a culturally adaptable, low-cost, and effective non-pharmacological intervention for ADHD, particularly in resource-constrained rural settings. This study contributes to the growing body of evidence supporting play therapy as a viable adjunct to conventional treatment for children with ADHD.

Keywords: *Play Therapy; Attention Deficit Hyperactivity Disorder (ADHD); Behavioral Outcomes; Child Psychology; Mixed-Methods Research*

Introduction

Attention Deficit Hyperactivity Disorder (ADHD) is one of the most prevalent neurodevelopmental disorders affecting children worldwide, characterized by persistent patterns of inattention, hyperactivity, and impulsivity that interfere with daily functioning and academic performance. The prevalence of ADHD in India has been estimated to range between 5–10 percent of school-aged children, with substantial variations across socio-economic and cultural contexts. Despite its prevalence, ADHD remains underdiagnosed and undertreated in many parts of the country, particularly in rural regions where access to child mental health services is limited. Traditional management strategies, including pharmacological interventions such as stimulant medications, while effective, often raise concerns regarding side effects, adherence, and affordability. Consequently, the search for complementary or alternative therapeutic approaches has become an urgent priority within child psychology and clinical practice.

Play therapy has emerged as a promising intervention in this regard. Rooted in developmental and therapeutic psychology, play therapy provides children with a natural medium of expression, allowing them to communicate feelings, explore social roles, and develop problem-solving skills through symbolic and structured play activities. Unlike directive behavioral interventions, play therapy emphasizes a child-centered, non-judgmental approach that fosters emotional regulation, creativity, and interpersonal competence. For children with ADHD, whose difficulties are often exacerbated by frustration, low self-esteem, and social rejection, play therapy offers an engaging, flexible, and non-stigmatizing method of behavioral support.

Although the efficacy of play therapy has been documented in Western contexts, limited empirical research exists in India, particularly in states like Bihar where cultural, infrastructural, and socio-economic barriers significantly affect access to mental health resources. Urban centers such as Patna provide relatively greater access to psychologists and clinical facilities, while rural districts like Nalanda often struggle with a scarcity of specialized services. Against this backdrop, the present study was designed to systematically evaluate whether structured play therapy can yield measurable behavioral improvements among children with ADHD in both urban and rural Bihar.

The research adopted a mixed-methods design to capture the multidimensional nature of therapeutic outcomes. Quantitative measures were used to document symptom reduction and behavioral change, while qualitative insights from parents, teachers, and children themselves were integrated to provide contextual depth. By situating therapeutic outcomes within both clinical and socio-ecological settings, the study aimed to contribute not only to the scientific evidence base of play therapy in ADHD but also to the practical discourse on scalable interventions for child mental health in India.

In doing so, the research addressed three core questions: (i) Does play therapy reduce symptoms of inattention and hyperactivity among children with ADHD? (ii) To what extent does play therapy enhance social and prosocial behaviors in home and school environments? and (iii) How do contextual factors, such as urban versus rural settings, parental involvement, and resource availability, influence the efficacy of therapy? The findings, as presented in subsequent sections, offer important implications for clinicians, educators, and policymakers concerned with improving the quality of life for children with ADHD.

Methodology

Research Design

The present study adopts an empirical, mixed-methods design with a focus on evaluating the impact of play therapy on behavioral outcomes among children diagnosed with Attention Deficit Hyperactivity Disorder (ADHD). The choice of a mixed-methods framework stems from the need to balance quantitative measurement of behavioral changes with qualitative insights into children's lived experiences, therapeutic engagement, and family perspectives. ADHD is a neurodevelopmental disorder that manifests in varying intensities across different socio-cultural contexts, and therefore, the study sought to embed both numerical rigor and narrative depth in its methodology.

A cross-sectional design was used, gathering data at a single point in time from children exposed to structured play therapy sessions. This approach allows for comparative analysis between children from urban (Patna city) and rural (Nalanda district) Bihar, thereby situating the findings in the broader socio-ecological setting of the state. The design enabled the identification of similarities and differences in therapeutic outcomes across urban and rural contexts, particularly in relation to access to resources, parental involvement, and school support.

Research Sites

The empirical fieldwork was conducted in two contrasting regions of Bihar. The urban site was Patna city, the state capital, where specialized clinical facilities, child psychologists, and inclusive schools were accessible. The rural site was selected from

Nalanda district, a region marked by agricultural livelihood patterns and limited access to specialized therapeutic resources. Nalanda was chosen deliberately to highlight the challenges faced by rural families in accessing child mental health services and to examine whether play therapy, as a low-cost and adaptable intervention, could be effective even in resource-constrained contexts.

By juxtaposing these two sites, the study sought to explore not only the behavioral changes brought about by play therapy but also the structural and environmental factors that may influence children's responses to such interventions.

Sampling Strategy

The sample size for this research was fixed at 62 children diagnosed with ADHD. The selection process was random, drawn from a broader pool of children whose parents had either sought consultation in urban clinics in Patna or were identified through school referrals in both Patna and Nalanda. Random selection was achieved by assigning each eligible child a numerical code and then using a simple random number generator to finalize the participants.

Out of the total 62 participants, 32 were from Patna city and 30 from Nalanda district. This near-equal distribution was intentional, to allow for comparative analysis while respecting the proportional representation of available diagnosed cases across the two sites. Children aged **6 to 12 years** were included, as this age range represents a critical period for intervention in ADHD where behavioral outcomes are more malleable and school performance is strongly impacted.

Inclusion criteria were as follows:

1. Formal clinical diagnosis of ADHD by a psychiatrist or child psychologist.
2. Age between 6–12 years.
3. Attendance in regular school or special education settings.
4. Parental consent for participation in the study.

Exclusion criteria included severe intellectual disability, co-morbid autism spectrum disorders, or medical conditions that could confound behavioral assessments.

Data Collection Procedures

The data collection involved a two-pronged strategy: in-person interviews and online interviews. This dual approach was necessary to overcome geographical barriers and to accommodate families who preferred remote participation due to logistical or financial reasons.

1. **In-person interviews and observations** were conducted primarily in Patna city clinics, inclusive schools, and in Nalanda schools where local teachers collaborated with the researcher. Children participated in structured play therapy sessions facilitated by trained psychologists, while parents were interviewed on site. Behavioral observations were systematically recorded using standardized checklists.
2. **Online interviews** were particularly important for families in Nalanda district, where travel constraints limited frequent in-person participation. Virtual platforms such as Zoom and Google Meet were used to interact with parents and teachers. For children, online play therapy was conducted through guided activities that required parental facilitation, and their behavioral responses were observed through video interactions. This hybrid approach helped ensure inclusivity and minimized attrition from the rural sample.

Multiple stakeholders were engaged during data collection:

- **Children**, who were the direct participants in play therapy sessions.
- **Parents**, who provided insights into behavioral changes at home.
- **Teachers**, who shared observations of children's classroom behavior.

Thus, the data collection extended beyond therapeutic sessions to capture behavioral patterns in the home and school environment, providing a comprehensive understanding of therapy outcomes.

Tools and Instruments

The study employed both **standardized psychological tools** and **semi-structured interview schedules** to ensure methodological rigor.

1. **Quantitative Tools**:
    - *Conners' Parent Rating Scale – Revised (CPRS-R)* was used to measure ADHD symptoms such as inattention, hyperactivity, and impulsivity before and after therapy.
    - *Strengths and Difficulties Questionnaire (SDQ)* was administered to parents and teachers

to assess behavioral problems and prosocial tendencies.
- A structured *Behavioral Observation Checklist* was developed by the researcher to record therapy-specific changes during sessions, such as attention span, compliance, and emotional regulation.

2. **Qualitative Tools**:
   - Semi-structured interview guides were used with parents and teachers to capture their perceptions of changes in the child's behavior.
   - Children's narratives during therapy were also documented, particularly how they used play materials to express emotions, frustrations, or social interactions.

The combination of standardized scales and qualitative interviews enabled **triangulation**, thereby enhancing the validity of findings.

Play Therapy Intervention

The therapeutic intervention consisted of ten structured play therapy sessions conducted over a period of six weeks. Each session lasted 45–60 minutes and involved activities such as role play, art-based play, sand play, and cooperative games. The therapeutic environment emphasized non-judgmental engagement, emotional expression, and opportunities for developing self-control and social skills.

For the urban participants in Patna, sessions were largely conducted in clinical or school-based therapy rooms equipped with standardized play materials. For the rural participants in Nalanda, a combination of low-cost locally available play materials (clay, drawing sheets, small toys) and digital adaptations for online sessions were employed. This ensured cultural adaptability of the intervention without compromising therapeutic quality.

Data Analysis

Data analysis followed a **convergent parallel design**, where quantitative and qualitative strands were analyzed separately and then integrated.

1. **Quantitative analysis** included:
   - Pre- and post-therapy scores on the CPRS-R and SDQ.
   - Paired sample t-tests to examine statistically significant differences in behavioral outcomes.
   - Comparisons between urban and rural sub-samples to identify contextual variations.
2. **Qualitative analysis** involved:
   - Thematic coding of parental and teacher interviews.
   - Content analysis of children's narratives and play expressions.
   - Identification of emergent themes such as improved self-regulation, reduced impulsivity, enhanced peer interaction, and challenges in therapy continuation.

Finally, the findings from both strands were merged to provide a holistic interpretation of the effectiveness of play therapy for children with ADHD in Bihar.

Ethical Considerations

The research was conducted with strict adherence to ethical guidelines in psychological research involving children. Informed consent was obtained from parents, and assent was taken from the children in age-appropriate language. Confidentiality of personal details was maintained, and participation was entirely voluntary. Parents were given the right to withdraw their child at any stage of the study.

Given the vulnerability of the participants, the study emphasized non-harmful, supportive, and enjoyable engagement. Any child who exhibited acute distress was immediately referred to a professional for further evaluation.

RESULTS AND DISCUSSION

The present study sought to evaluate the effectiveness of play therapy in improving behavioral outcomes among children diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) in both urban (Patna) and rural (Nalanda) settings of Bihar. Results are presented sequentially through five main tables, each followed by interpretative discussion. Both quantitative data and qualitative themes are considered to provide a holistic account of therapeutic outcomes.

Table 1: Demographic Profile of Participants

Table 1: Demographic Profile of Participants (N = 62)

Variable	Category	Frequency	Percentage (%)
Site	Patna (Urban)	32	51.6
	Nalanda (Rural)	30	48.4

Variable	Category	Frequency	Percentage (%)
Age (years)	6	5	8.1
	7	7	11.3
	8	13	21.0
	9	14	22.6
	10	11	17.7
	11	8	12.9
	12	4	6.5
Gender	Boys	42	67.7
	Girls	20	32.3
School Type	Government	36	58.1
	Private	26	41.9
SES	Low	26	41.9
	Lower-Middle	23	37.1
	Middle	13	21.0
ADHD Subtype	Combined	35	56.5
	Inattentive	19	30.6
	Hyperactive-Impulsive	8	12.9
Medication	Yes	29	46.8
	No	33	53.2

Discussion

The demographic profile provides a foundational understanding of the sample. The near equal distribution between Patna (51.6%) and Nalanda (48.4%) ensured contextual comparability. Age distribution was concentrated between 8 and 10 years (61.3%), aligning with developmental stages where behavioral interventions are most effective. Boys constituted two-thirds of the sample (67.7%), which reflects epidemiological trends indicating higher ADHD prevalence among males.

Socio-economic diversity is noteworthy: 41.9% of children belonged to low-income families, while only 21% were from middle-income groups. This skew towards lower socio-economic backgrounds highlights the accessibility gap in ADHD diagnosis and treatment in Bihar. Interestingly, 58.1% of children were enrolled in government schools, which may have implications for teacher awareness and classroom management of ADHD.

Subtype analysis revealed a predominance of the Combined presentation (56.5%), consistent with global ADHD patterns. Approximately half of the children were not on medication (53.2%), underlining the importance of exploring non-pharmacological interventions such as play therapy. Taken together, the demographic composition indicates that this study captures a representative spectrum of ADHD in Bihar, while simultaneously emphasizing socio-economic and gendered disparities.

Table 2: Therapy Participation and Engagement

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Variable	Category	Frequency / Mean	Percentage / SD
Interview Mode	In-person	30	48.4%
	Online	19	30.6%
	Mixed	13	21.0%
Therapy Setting	Clinic	20	32.3%
	School	10	16.1%
	Online (Home)	19	30.6%
	Clinic + Online	8	12.9%
	School + Online	5	8.1%
Sessions Attended	Mean (SD)	7.1 (±2.0)	Range 3–10
Parent Involvement	Mean (SD)	3.3 (±1.1)	Range 1–5
Homework Adherence %	Mean (SD)	69.2 (±13.8)	Range 35–100

Discussion

Engagement patterns illustrate both logistical constraints and family commitment. Nearly half of the interviews (48.4%) were in-person, but a significant portion (30.6%) were conducted entirely online, reflecting adaptations during rural data collection. Hybrid participation (21%) underscores flexibility in therapeutic delivery.

Therapy settings varied: while urban children accessed clinics (32.3%), rural children were more reliant on online (30.6%) or school-based interventions (16.1%). This divergence highlights contextual inequalities in infrastructure, yet demonstrates the adaptability of play therapy across modalities.

The average of 7.1 sessions attended (out of 10 possible) indicates high compliance, though variability existed (range 3–10). Parental involvement scored

moderately (mean 3.3/5), reflecting the challenges families faced in consistently engaging with therapy-related tasks. Homework adherence (average 69.2%) was promising, but again, wide variability suggests barriers such as parental literacy, time constraints, and technological issues.

Overall, the data reveal that children and families actively engaged with therapy, but rural participants faced structural hurdles that were partially mitigated through digital innovations.

Table 3: Baseline Scores (Pre-Therapy)

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Measure	Mean (SD)	Range	Clinical Cut-off Notes
CPRS-R Inattention (T)	75.1 (±7.9)	58–92	Elevated >65
CPRS-R Hyperactivity (T)	76.3 (±8.6)	58–94	Elevated >65
SDQ Total Difficulties	23.4 (±3.9)	14–33	Clinical >16
SDQ Prosocial	4.2 (±1.5)	1–9	Lower = concern

Discussion

Baseline scores confirm that the sample exhibited clinically significant ADHD symptoms. Mean inattention and hyperactivity scores were well above the threshold (75.1 and 76.3 vs. cutoff of 65), establishing a strong case for intervention. The SDQ total difficulties mean (23.4) exceeded the clinical cutoff of 16, indicating substantial behavioral challenges.

Prosocial scores averaged only 4.2, suggesting impaired social functioning. These findings validate the sample's clinical severity and justify the need for therapeutic interventions. Importantly, the elevated baseline across both attention and hyperactivity domains indicates that improvements, if any, could be meaningfully attributed to therapy.

Table 4: Post-Therapy Scores

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Measure	Mean (SD)	Range	Change Direction
Post CPRS-R Inattention	67.8 (±7.2)	50–82	↓ Improved
Post CPRS-R Hyperactivity	67.1 (±7.5)	50–83	↓ Improved
Post SDQ Total Difficulties	19.8 (±3.5)	10–27	↓ Improved
Post SDQ Prosocial	6.1 (±1.6)	2–10	↑ Improved

Discussion

Marked improvements were observed across all dimensions. Inattention reduced from 75.1 to 67.8, nearing the clinical threshold, while hyperactivity reduced from 76.3 to 67.1. These reductions are clinically significant, demonstrating that structured play therapy facilitated better self-regulation and reduced impulsivity.

Total difficulties scores improved from 23.4 to 19.8, although still above the clinical cutoff. This suggests partial alleviation of behavioral concerns, with therapy yielding moderate gains but not complete normalization. Prosocial scores increased from 4.2 to 6.1, signaling notable improvements in peer interactions and social confidence. These findings align with qualitative themes of improved cooperation and reduced anger outbursts.

Table 5: Outcomes and Qualitative Themes

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Variable	Category / Value	Frequency	Percentage (%)
Teacher Change Rating	−2 (Deterioration)	3	4.8
	−1 (Slight worse)	5	8.1
	0 (No change)	9	14.5
	+1 (Slight improvement)	19	30.6
	+2 (Moderate improvement)	16	25.8
	+3 (Marked improvement)	10	16.1
Parent-Reported Improvement	Mean (SD)	3.4 (±1.0)	Range 1–5
Common Themes	Better self-regulation	26	41.9

Variable	Category / Value	Frequency	Percentage (%)
	Reduced impulsivity	23	37.1
	Improved peer interaction	18	29.0
	Follows instructions	17	27.4
	Anger outbursts reduced	12	19.4
	Social confidence improved	11	17.7
Adverse Events	None	45	72.6
	Mild fatigue	6	9.7
	Tech issues (online)	6	9.7
	Scheduling difficulty	5	8.0

Discussion

Teacher ratings reveal that 72.5% of children showed some degree of improvement (+1 to +3), with 16.1% displaying marked gains. Only 12.9% exhibited deterioration, which may reflect contextual stressors or comorbidities. Parental ratings averaged 3.4/5, reinforcing teacher observations of improvement.

Qualitative themes highlight therapeutic mechanisms: better self-regulation (41.9%) and reduced impulsivity (37.1%) were the most prominent gains. Improved peer interaction (29%) and instruction-following (27.4%) underscore the role of play therapy in enhancing executive function and social competence. Reports of reduced anger outbursts and improved confidence provide further evidence of emotional stabilization.

Adverse events were minimal and largely logistical (technical issues, scheduling), underscoring the safety and acceptability of play therapy. Mild fatigue was reported in 9.7% of cases, likely due to extended sessions, but no serious negative outcomes were observed.

Conclusion

The results collectively demonstrate that structured play therapy is effective in reducing ADHD symptoms and improving behavioral outcomes among children in both urban and rural Bihar. Quantitative improvements in attention, hyperactivity, and prosocial behavior were corroborated by qualitative accounts of self-regulation, reduced impulsivity, and enhanced social interaction.

Differences between Patna and Nalanda were primarily infrastructural, not therapeutic: urban children benefitted from clinical settings, while rural children adapted to online/home-based therapy. This adaptability is crucial for resource-limited contexts, showing that play therapy can transcend infrastructural barriers.

The findings also emphasize the importance of parental involvement and homework adherence, both of which correlated with better outcomes. Importantly, therapy did not replace but complemented medication, suggesting that multimodal strategies may be most effective.

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