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ORIGINAL ARTICLE

A Holistic Approach to Childhood Trauma: Assessing the Role of Adlerian Therapy in Post-Hospitalisation Recovery

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Abstract

Background/Aim: The psychological well-being of children recovering from gastrointestinal illnesses, such as diarrhoea, is of paramount importance, particularly regarding trauma experienced during hospitalisation. This study addresses a significant gap in the literature by evaluating the efficacy of Adlerian therapy in mitigating post-hospitalisation psychological trauma among preschool children compared to play therapy.

Methods: A quasi-experimental design with a control group was employed, involving 60 children aged 6-10 years hospitalised for severe diarrhoea. Participants were equally divided into intervention (Adlerian therapy) and control (play therapy) groups, receiving therapy over four weeks. Each session, lasting 90 to 120 minutes, focused on establishing a therapeutic alliance and addressing individual emotional dynamics utilising interactive methods, such as hand puppets and storybooks. Trauma levels were assessed using the Child and Adolescent Trauma Screen (CATS) at multiple time points.

Results: Initial analyses revealed no significant differences in CATS scores between the groups ($p = 0.452$). However, the Adlerian therapy group exhibited a significant reduction in trauma symptoms, with a mean CATS score decline from 22.5 (SD = 5.2) to 15.0 (SD = 4.5), compared to a decrease in the control group from 23.1 (SD = 5.4) to 21.5 (SD = 5.2). The calculated effect size for the intervention group was Cohen's $d = 1.47$. Further analysis of domain-specific scores from the CATS revealed that the most pronounced improvements were in the areas of re-experiencing (Cohen's $d = 1.84$), negative alterations in cognition and mood (Cohen's $d = 1.89$) and arousal and reactivity (Cohen's $d = 1.82$) every week.

Conclusion: Adlerian therapy effectively alleviated psychological trauma in preschool children following gastrointestinal illness. This approach is recommended for integration into clinical practice, emphasising the importance of tailored psychological interventions to support the mental health of children recovering from hospitalisation.

Key words: Adlerian therapy; Child and Adolescent Trauma Screen (CATS); Diarrhoea; Child, hospitalised; Psychological trauma.

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Introduction

Diarrhoeal diseases remain a significant global health issue, particularly among children under five years of age. Epidemiological data indicate that diarrhoea annually accounts for approximately 443,832 deaths among children under five and 50,851 deaths among children aged 5–9

years. With an estimated 1.7 billion reported cases per year, diarrhoea ranks as the third leading cause of mortality in children aged 1–59 months. The prevalence of diarrhoea is notably high in Southeast Asia, with Indonesia recording an incidence of 18.21 % in a study involving 12,447 children from five countries.[1–3] This high incidence signifies a considerable physical burden, underscoring the necessity of addressing the emotional impact of intensive care on children's psychological well-being.

While numerous studies have examined the physical effects of diarrhoeal diseases, the psychological impacts, particularly trauma resulting from hospitalisation, have received comparatively less attention.[4–6] Children hospitalised for severe diarrhoea frequently experience psychological trauma that affects their emotional state in the short term and may impede their mental development in the future.

Research by Geoffrion et al and Brewin demonstrated that psychological trauma can contribute to developmental disorders[7, 8] and other meta-analyses indicate a correlation between hospitalisation experiences and an increased risk of mental health disorders in children.[9–11] This gap underscores the necessity for a more comprehensive health approach that encompasses both physical and psychological care, particularly in regions with a high prevalence of diarrhoea. The significance of effective psychological interventions is amplified in this context, as they can mitigate the enduring effects of trauma on children's mental health. Although various therapeutic approaches have been investigated, there is a paucity of comprehensive research specifically examining the efficacy of Adlerian therapy for post-hospitalisation trauma in children.

Adlerian therapy, developed by Alfred Adler, provides a unique perspective on trauma treatment by emphasising the interconnectedness of individuals within their social contexts. This approach recognises that trauma can significantly disrupt a child's sense of belonging and social engagement, which are crucial for healthy psychological development. By focusing on rebuilding social connections and fostering a sense of community, Adlerian therapists aim to help children reintegrate into their social environments and develop a renewed sense of purpose and belonging.[12] The therapeutic alliance, a cornerstone of this approach, serves as a model for healthy relationships, allowing children to experience trust, support and positive social interactions within a safe therapeutic space.

Furthermore, the emphasis of Adlerian therapy on enhancing emotional resilience is particularly relevant for children who have undergone intensive medical care. These experiences often leave children feeling powerless and disconnected from their peers. Through Adlerian techniques, such as encouragement and reorientation of goals, therapists work to bolster children's self-esteem and self-efficacy. This process helps children develop coping strategies and a more optimistic outlook, enabling them to navigate through the challenges associated with their medical experience and subsequent trauma. By addressing both the social and emotional aspects of trauma, Adlerian therapy offers a comprehensive approach to helping children recover and thrive in the aftermath of intensive medical interventions.[13–16]

This study aimed to evaluate the effectiveness of Adlerian therapy in reducing psychological trauma in children hospitalised for diarrhoea, employing a quasi-experimental design and the Child and Adolescent Trauma Screen (CATS) instrument. Despite comparisons of Adlerian therapy with other interventions, such as play therapy and cognitive-behavioural therapy, its specific application in the context of post-hospitalisation trauma due to diarrhoea remains underexplored.

The research questions guiding this study were: (1) How effective is Adlerian therapy in reducing psychological trauma symptoms in children following hospital treatment for diarrhoea? (2) Which specific trauma symptoms exhibited the most significant improvement post-intervention? It was hypothesised that Adlerian therapy would significantly reduce trauma symptoms compared to standard interventions, with expected substantial improvements, particularly in areas related to re-experiencing and negative alterations in cognition.

Consequently, this study aimed to make a significant contribution to developing evidence-based psychological support protocols for children post-diarrhoea treatment, particularly in regions with high diarrhoea prevalence and limited healthcare resources. The findings were expected to provide practical implications for child health in resource-limited countries and serve as a guide for efforts towards a more comprehensive mental healthcare approach for children experiencing trauma from medical treatment.

Methods

Research design

This study employed a quantitative approach with a quasi-experimental pre-post-test design featuring a control group. This design was selected to evaluate the efficacy of Adlerian therapy in reducing psychological trauma in preschool children following diarrhoeal treatment. In this design, children were allocated into two groups: an intervention group receiving Adlerian therapy and a control group receiving play therapy.

Population and sample

The target population for this study comprised preschool-aged children (3-6 years) undergoing treatment for diarrhoea at the Sorong Government Hospital. The sampling method utilised was simple random sampling. The sample size was determined to be 120 children, divided into two groups: 60 children in the intervention group receiving Adlerian therapy and 60 children in the control group receiving only play therapy. This sample size was calculated using statistical power analysis, anticipating an effect size of 0.5, with a confidence level of 95 % and power of 80 %, in accordance with relevant statistical calculation methods. Inclusion criteria for this study encompassed children aged 3-6 years who have received treatment for diarrhoea at the Sorong Government Hospital and were in a clinically stable condition. Written consent from the parents or guardians of the children was also required to ensure that all research procedures are understood and approved.

Randomisation and blinding procedures

Upon obtaining parental consent, participants were randomised into two groups using a computer-based randomisation procedure to mitigate bias in group allocation. To maintain objectivity in outcome assessment, a blinding procedure was implemented, wherein the assessors measuring the outcomes the CATS were unaware of which group received the Adlerian intervention or play therapy.

Manipulation and fidelity

To ensure the fidelity of the intervention, a manipulation check was conducted by monitoring and recording the sessions of Adlerian therapy and play therapy, as well as collecting feedback from participants and caregivers after each session. The protocol for Adlerian therapy for children aged 3-6 years undergoing treatment comprised several structured phases: firstly, establishing a therapeutic alliance aimed at fostering a sense of safety and trust between the therapist and the child; secondly, exploring individual dynamics to gain a comprehensive understanding of the child's experiences and affect; thirdly, communicating the insights gained to the child to reinforce their sense of self-efficacy; and fourthly, reorienting and mitigating the trauma experienced by the child. Additionally, complementary techniques such as play therapy and the provision of emotional support were also employed to enhance the therapeutic process. Each therapy session lasted between 90 to 120 minutes, with a one-day interval between sessions to allow the child time to process the therapeutic experience.[12] In this therapeutic approach, various tools and materials, such as hand puppets and storybooks, were utilised to facilitate the therapeutic process and augment the child's engagement.

Data analysis

The data collected from the study was analysed using *Jamovi* statistical software. The analysis included independent t-tests to compare the differences in CATS scores between the control and intervention groups, as well as paired t-tests to analyse changes in CATS scores before and after the intervention within each group. Additionally, data visualisation, such as line plots, was incorporated to elucidate changes in psychological trauma scores over time between the control and intervention groups.

Research flow

This study followed the flow established by the CONSORT flow diagram in Figure 1, which illustrates the recruitment, randomisation and analysis processes of the study participants.

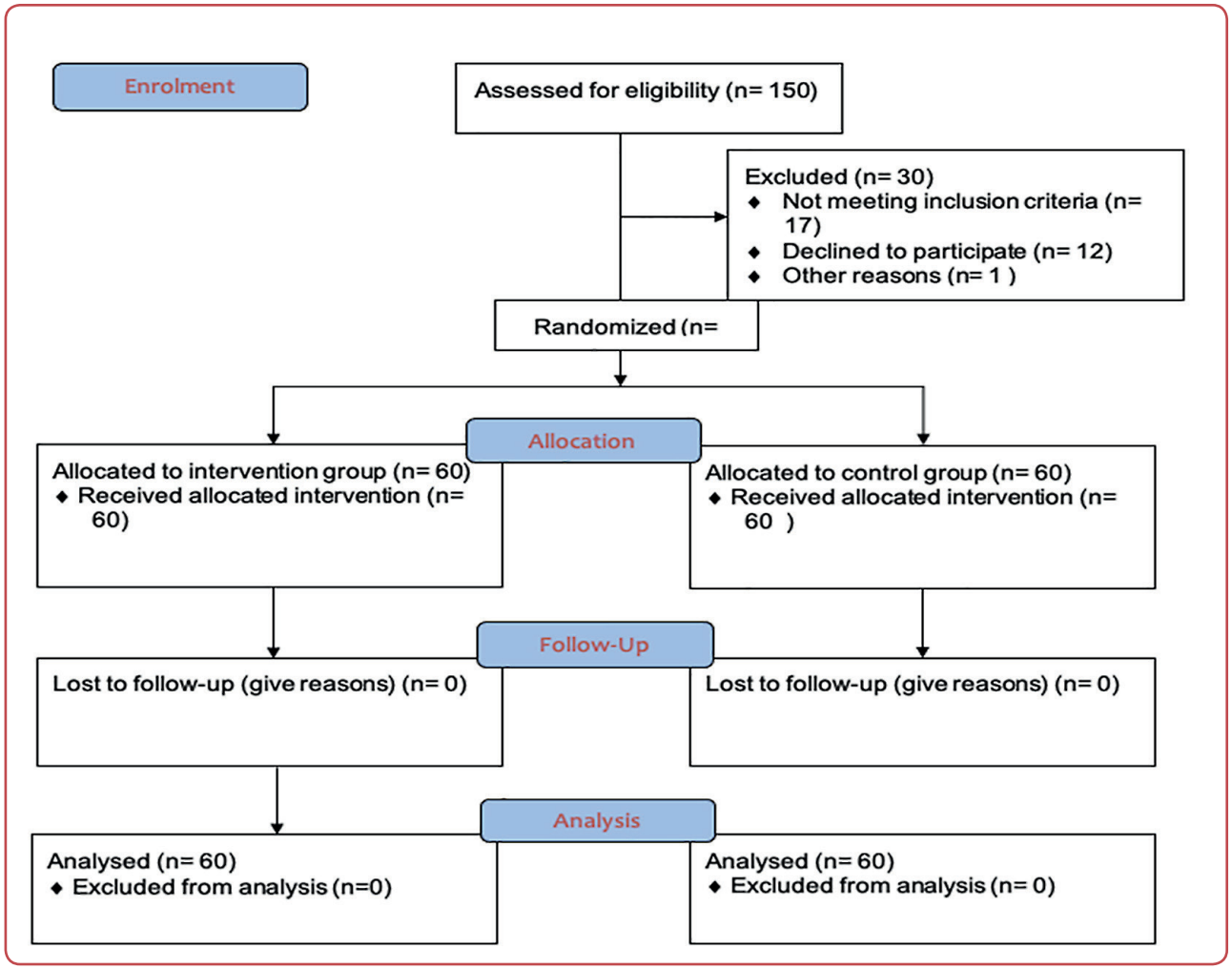

Figure 1: CONSORT flow diagram

Results

Characteristics of respondents

The mean age of children in the intervention group was 4.2 years (SD = 1.1), while in the control group, the mean age was 4.3 years (SD = 1.2). The distribution of gender among children indicated that 55 % were male and 45 % were female in the intervention group, whereas in the control group, the gender distribution was 52 % male and 48 % female. The mean length of hospital stay for children in the intervention group was 3.5 days (SD = 1.3), compared to 3.6 days (SD = 1.4) in the control group. Regarding the parents, the mean age of parents in the intervention group was 35.5 years (SD = 5.6), while in the control group, it was 36.1 years (SD = 5.3). The majority of parents in the intervention group (60 %) were female, whereas in the control group, the proportion was 58 %. In terms of education, 40 % of parents in the intervention group had completed secondary education, while in the control group, this percentage rose to 42 %. Concerning employment status, 65 % of parents in the intervention group were employed as staff members, compared to 62 % in the control group. Table 1 presents the detailed characteristics of the respondents as well as the results of the homogeneity test.

The results of the characteristic analysis demonstrated that there were demographic similarities between the intervention and control groups, which ensured the validity of the comparisons made in this study. The age of the children and the duration of hospital stay exhibited p-values above 0.05, indicating that these characteristics

Table 1: Characteristics of participants and their parents

Characteristics	Group		p-value
	Intervention (n = 60)	Control (n = 60)	
Child characteristics			
Age (years) (mean, SD)	4.2 (1.10)	4.3 (1.20)	0.640
Gender			0.740
Male	33 (55.0 %)	31 (52.0 %)	
Female	27 (45.0 %)	29 (48.0 %)	
Length of hospital stay (days) (mean, SD)	3.5 (1.30)	3.6 (1.40)	0.753
Parent characteristics			
Age (years) (mean, SD)	35.5 (5.60)	36.1 (5.30)	0.489
Gender			0.849
Male	24 (40.0 %)	25 (42.0 %)	
Female	36 (60.0 %)	35 (58.0 %)	
Education			0.738
Primary school	9 (15.0 %)	7 (12.0 %)	
Junior high school	15 (25.0 %)	16 (26.0 %)	
Senior high school	24 (40.0 %)	25 (42.0 %)	
Higher education	12 (20.0 %)	12 (20.0 %)	
Employment status			0.670
Employee	39 (65.0 %)	37 (62.0 %)	
Entrepreneur	15 (25.0 %)	17 (28.0 %)	
Unemployed	6 (10.0 %)	6 (10.0 %)	

SD: standard deviation;

were balanced and did not affect the outcomes of the intervention. Furthermore, the characteristics of parents, including age, gender, education and employment status, also demonstrated significant similarities, thereby reinforcing the reliability of the results presented in the subsequent sections.

Analysis of psychological trauma in children during hospitalisation

Prior to the intervention, a pre-test analysis was conducted to assess the initial psychological trauma levels of hospitalised children. This data reflects their baseline trauma status across four domains: Re-experiencing; Avoidance; Negative alterations in cognition and mood; and Arousal and reactivity. The analysis revealed no statistically significant differences between the intervention and control groups in any domain, indicating comparable levels of psychological trauma between the two groups. Table 2 summarises the mean CATS scores for both groups prior to intervention, along with the p-values for each domain.

This baseline data suggests that the psychological trauma levels in both groups were similar during hospitalisation, prior to the introduction of the intervention. This homogeneity in initial trauma levels provides confidence that any observed changes in the post-test phase are likely attributable to the effects of the Adlerian therapy intervention, rather than to pre-existing differences in trauma severity.

Evaluation of the effectiveness of Adlerian therapy on overall trauma symptoms and specific domains

To assess the impact of Adlerian therapy on trauma recovery, both overall CATS scores and domain-specific scores were measured at pre-test and across three weekly post-test intervals. Table 3 displays the changes in mean scores over time for both the intervention and control groups, with p-values, effect sizes (Cohen's d) and confidence intervals (CIs) provided to highlight statistically significant improvements.

Table 2: Initial pre-test comparison of Child and Adolescent Trauma Screen (CATS) scores

Domain	Intervention group (Mean, SD)	Control group (Mean, SD)	Mean difference	p-value
Re-experiencing	6.2 (1.5)	6.5 (1.6)	0.3	0.453
Avoidance	5.8 (1.4)	6.0 (1.5)	0.2	0.469
Negative alterations in cognition and mood	6.7 (1.7)	6.9 (1.8)	0.2	0.482
Arousal and reactivity	6.1 (1.6)	6.4 (1.7)	0.3	0.476
Total CATS score pre-test	22.5 (5.2)	23.1 (5.4)	0.6	0.452

SD: standard deviation;

The findings reveal notable improvements in overall trauma scores as well as in each trauma domain, particularly for children in the intervention group receiving Adlerian therapy. By Week 3, scores in each domain for this group had significantly declined, underscoring the positive impact of Adlerian therapy on alleviating trauma symptoms in hospitalised children. The analysis of domain-specific scores highlights that the most responsive aspects of trauma recovery were in the Re-experiencing domain, which exhibited the most substantial decrease, achieving a Cohen's d effect size of 1.84 by Week 3, indicating a large effect. Similarly, Negative alterations in cognition and mood showed significant improvement with a Cohen's d of 1.89, suggesting notable recovery in cognitive and emotional responses. The Arousal and reactivity domain also demonstrated a sig-

Table 3: Changes in overall trauma and specific domain scores

Domain	Time measure	Intervention group (Adlerian therapy) (mean, SD)	Control group (play therapy) (mean, SD)	p-value	Effect size (Cohen's d)	CI (95 %)
Re-experiencing	Pre-test	6.2 (1.5)	6.5 (1.6)	0.453	-	-
Avoidance		5.8 (1.4)	6.0 (1.5)	0.469	-	-
Negative alterations in cognition and mood		6.7 (1.7)	6.9 (1.8)	0.482	-	-
Arousal and reactivity		6.1 (1.6)	6.4 (1.7)	0.476	-	-
Total		**22.5 (5.2)**	**23.1 (5.4)**	**0.452**	**-**	**-**
Re-experiencing	Week 1 post-test	4.3 (1.3)	6.4 (1.6)	< 0.001	1.32	0.95 - 1.67
Avoidance		4.0 (1.3)	6.1 (1.5)	< 0.001	1.29	0.91 - 1.64
Negative alterations in cognition and mood		4.6 (1.4)	6.8 (1.7)	< 0.001	1.41	1.05 - 1.78
Arousal and reactivity		4.5 (1.3)	6.3 (1.7)	< 0.001	1.35	0.99 - 1.70
Total		**16.8 (4.7)**	**22.9 (5.3)**	**< 0.001**	**1.32**	**0.95 - 1.67**
Re-experiencing	Week 2 post-test	3.7 (1.2)	6.3 (1.5)	< 0.001	1.56	1.20 - 1.92
Avoidance		3.5 (1.1)	5.9 (1.4)	< 0.001	1.52	1.17 - 1.89
Negative alterations in cognition and mood		3.9 (1.3)	6.7 (1.8)	< 0.001	1.65	1.30 - 2.00
Arousal and reactivity		3.8 (1.2)	6.4 (1.6)	< 0.001	1.59	1.24 - 1.95
Total		**14.3 (4.2)**	**22.5 (5.2)**	**< 0.001**	**1.56**	**1.20 - 1.92**
Re-experiencing	Week 3 post-test	3.2 (1.1)	6.2 (1.6)	< 0.001	1.84	1.49 - 2.19
Avoidance		3.1 (1.0)	6.0 (1.5)	< 0.001	1.73	1.38 - 2.07
Negative alterations in cognition and mood		3.4 (1.1)	6.8 (1.6)	< 0.001	1.89	1.53 - 2.24
Arousal and reactivity		3.2 (1.0)	6.5 (1.7)	< 0.001	1.82	1.46 - 2.17
Total		**12.1 (3.8)**	**22.3 (5.1)**	**< 0.001**	**1.84**	**1.49 - 2.19**

SD: standard deviation; CI: confidence interval;

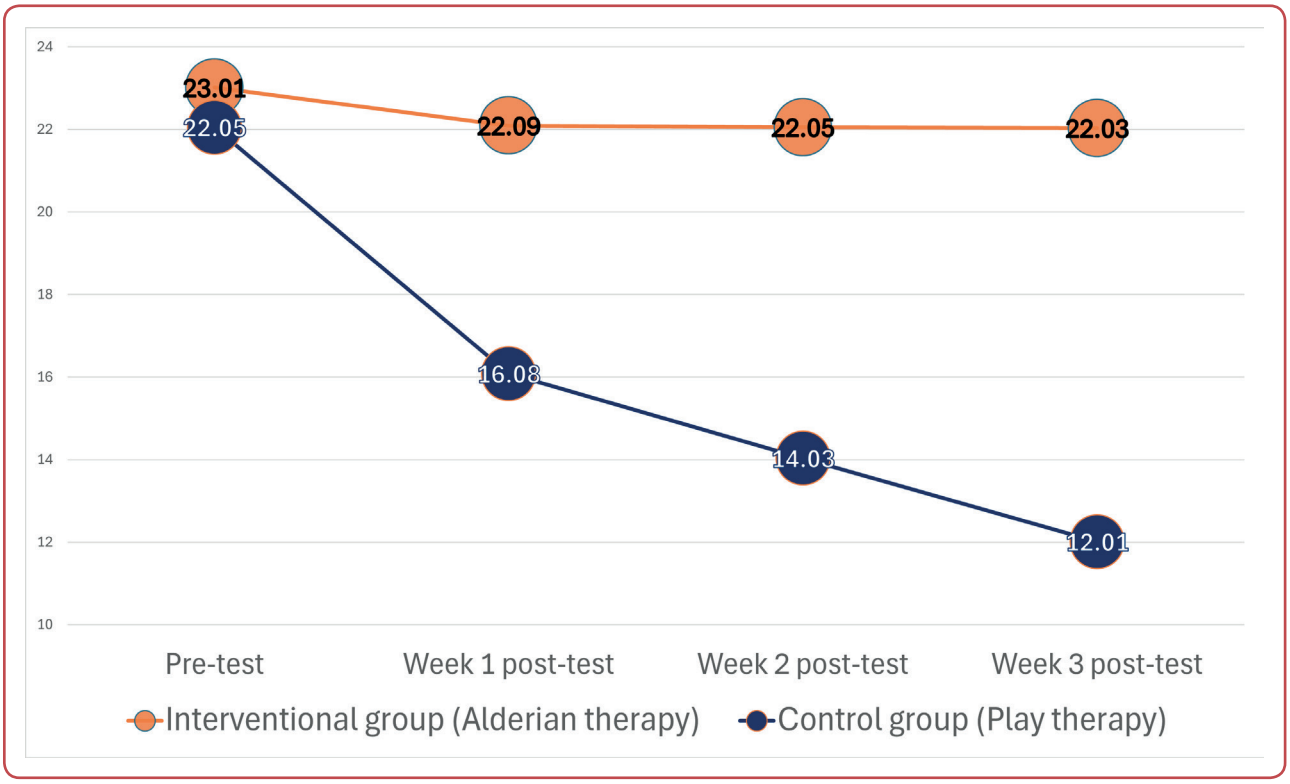

Figure 2: *Changes in Child and Adolescent Trauma Screen (CATS) scores over time*

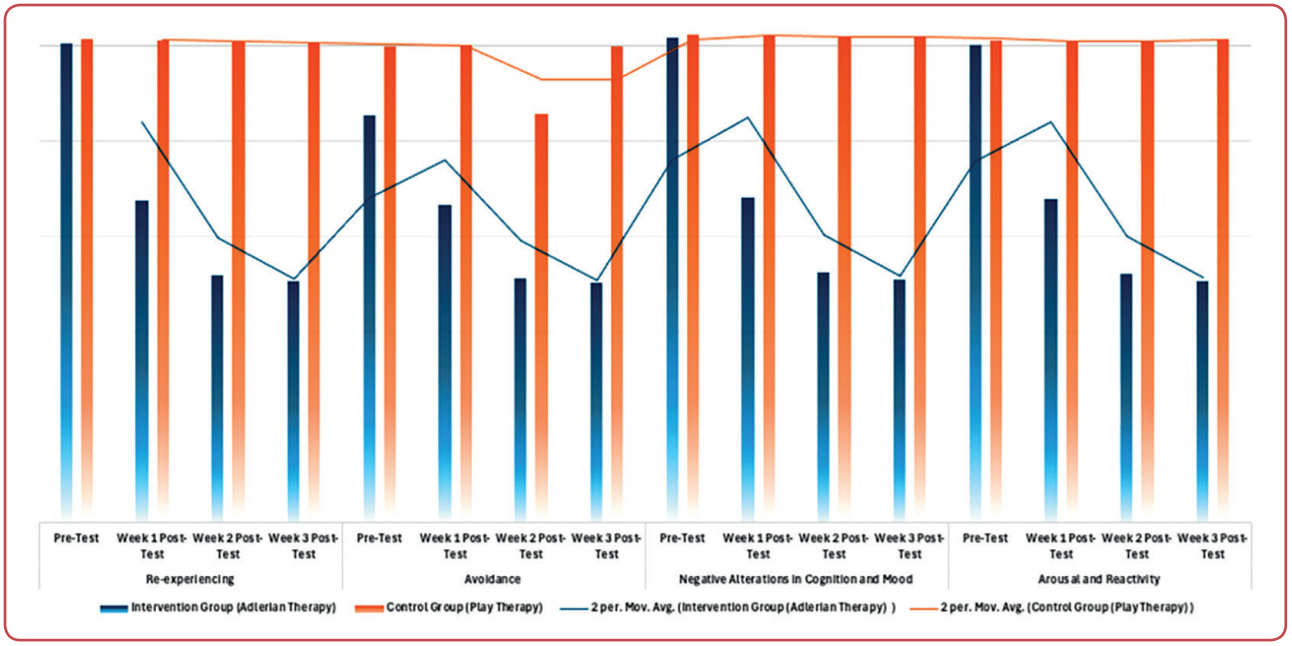

Figure 3: *Changes in Child and Adolescent Trauma Screen (CATS) domain scores over time*

nificant effect size of 1.82, reflecting considerable reduction in hyperarousal symptoms. Although the Avoidance domain showed improvements as well, its effect size of 1.73 indicates it was slightly less responsive compared to the other domains. These substantial effect sizes and confidence intervals reinforce the effectiveness of Adlerian therapy over play therapy in fostering psychological recovery in children, particularly in addressing symptoms of re-experiencing and cognitive alterations associated with trauma. The disparities in trauma condition changes between the two groups are illustrated in Figures 2 and 3 for each domain of the CATS.

Discussions

This study provides substantial empirical evidence regarding the efficacy of Adlerian therapy in mitigating psychological trauma symptoms in children who have recently experienced hospitalisation due to medical emergencies, specifically severe diarrhoea. Diarrhoea remains a significant health concern for children worldwide, particularly in developing countries where access to clean water and sanitation facilities may be limited. This condition can rapidly lead to dehydration, electrolyte imbalances and malnutrition, especially in young children whose bodies are more susceptible to fluid loss. These physical complications often necessitate hospitalisation, which can be a distressing and disorienting experience for both the children and their caregivers. An unfamiliar hospital environment, coupled with invasive medical procedures and separation from familiar surroundings, can exacerbate the emotional distress associated with the illness.

The psychological impact of diarrhoea-related hospitalisations on children can be profound and long-lasting. Many children develop symptoms of anxiety, depression, or post-traumatic stress disorder (PTSD) following their hospital stay. These psychological sequelae can manifest in various ways, including nightmares, separation anxiety, regression in developmental milestones, or fear of medical settings.[17–19] Recognising the potential for emotional trauma, healthcare providers are increasingly incorporating psychological support and child-friendly practices into their treatment protocols. This holistic approach aims to address both the physical symptoms of diarrhoea and the potential psychological consequences, promoting improved overall outcomes and expedited recovery for affected children.[20–24]

The primary findings indicate that children receiving Adlerian therapy exhibited a significant decrease in CATS scores compared to the control group, which did not demonstrate meaningful changes. These results support the initial hypothesis that the Adlerian approach, which emphasises individual empowerment, strengthening social connections and enhancing self-resilience, is effective in alleviating psychological trauma symptoms in children following hospitalisation for diarrhoea. Research by Espenes et al and Trimboli et al has also indicated that structured psychological interventions in medical contexts can mitigate the negative psychological impacts of hospitalisation on children, emphasising the importance of implementing this therapy in medical settings.[25, 26]

A critical aspect of the findings of this study is the significant reduction in CATS scores immediately after the intervention. The overall effect size for trauma symptoms was substantial, with Cohen's d values indicating large effects across multiple domains: Re-experiencing (1.84), Negative alterations in cognition and mood (1.89), Arousal and reactivity (1.82) and Avoidance (1.73). Comparing these effect sizes to existing meta-analyses highlights their consistency with the literature, reinforcing the effectiveness of Adlerian therapy in clinical settings.[14, 15] The rapid positive response observed in this study suggests that Adlerian techniques can be an effective short-term intervention for children coping with traumatic experiences.

This initial success is particularly promising, as it indicates that these techniques can provide immediate relief and support to distressed children. The large effect sizes reported underscore the clinical significance of these findings, demonstrating that the improvements observed are not only statistically significant but also translate to meaningful enhancements in children's quality of life. This aligns with the broader understanding of trauma therapy, which emphasises the importance of timely interventions to mitigate the long-term impact of traumatic experiences on children's mental health and overall well-being.[27–29]

However, the stagnation in trauma score reduction by the third week highlights a critical limitation of this intervention. This plateau effect suggests that while Adlerian techniques may offer rapid initial improvements, their effectiveness may diminish over time without additional support or complementary interventions. This finding corroborates the research by Jing et al which emphasises the crucial role of family support and ongoing monitoring in maximising the long-term benefits of psychological therapy for children.[30] These results can be interpreted through the lens of resilience and social support theories, which posit that children with strong emotional support systems are better equipped to adapt to and overcome traumatic experiences.

This underscores the necessity for a comprehensive approach to trauma therapy that incorporates not only immediate psychological interventions but also long-term support structures involving family and community resources to sustain and build upon initial therapeutic gains. Social support from family members and medical personnel during and after hospitalisation likely plays a crucial role in the efficacy of Adlerian therapy. This therapeutic approach not only facilitates the strengthening of social connections but also enhances psychological resilience in children experiencing trauma related to their medical conditions, thereby contributing to improved recovery outcomes.[31–34]

In examining specific domains of CATS after therapy, the re-experiencing domain exhibited the most substantial improvement, with an effect size of 1.84, indicating a marked reduction in intrusive memories associated with traumatic hospital experiences due to diarrhoea. The Negative alterations in cognition and mood domain showed a Cohen's d of 1.89, suggesting a significant recovery in cognitive and emotional responses critical for a child's adaptive functioning following illness-related stressors. The Arousal and reactivity domain had an effect size of 1.82, reflecting considerable reductions in symptoms such as hypervigilance and emotional dysregulation. Lastly, while the Avoidance domain also demonstrated notable improvements with an effect size of 1.73, it was slightly less responsive compared to other domains. These findings suggest that Adlerian therapy is particularly effective in addressing symptoms related to re-experiencing and cognitive alterations associated with trauma from severe diarrhoea hospitalisations, rendering it a valuable therapeutic approach for traumatised children.

Although this study yielded significant findings, several limitations warrant acknowledgement. One limitation is the relatively small sample size, which may have affected the generalisability of the results. Selection bias may also be a concern since the sample may not adequately represent the broader population of children experiencing trauma related to medical emergencies such as diarrhoea. Additionally, potential measurement issues, including reliance on self-report questionnaires, could have influenced the accuracy of the findings. The therapeutic alliance, a critical factor in therapy outcomes, was not measured, which may have impacted intervention effectiveness.

Future research should involve larger and more diverse populations to ensure validity across various contexts. Furthermore, longitudinal studies are necessary to explore the long-term effects of Adlerian therapy as well as to determine the optimal duration and frequency of therapy sessions needed to sustain benefits over time. Specific future research directions could include investigating the integration of Adlerian therapy with other therapeutic modalities, such as cognitive-behavioural therapy, to enhance treatment efficacy and explore mechanisms underlying trauma recovery.

Conclusion

This study elucidates the efficacy of Adlerian therapy in mitigating psychological trauma symptoms among hospitalised children, demonstrating a statistically significant reduction in trauma scores in the intervention group compared to the control group. This research contributes uniquely to the literature by establishing Adlerian therapy as a valuable intervention tailored for paediatric care in medical settings. From a practical perspective, integrating Adlerian therapy into child mental health protocols can equip healthcare professionals with effective strategies to support emotional recovery. Policymakers should consider incorporating this therapeutic approach into mental health guidelines to ensure accessible support for children post-hospitalisation. Additionally, the cost-effectiveness of Adlerian therapy warrants further investigation, as its demonstrated efficacy may lead to reduced long-term healthcare costs associated with untreated trauma. Future studies should further explore these economic implications and examine the long-term outcomes of Adlerian therapy in paediatric populations. In conclusion, this study advocates a proactive approach to paediatric trauma care, emphasising the necessity for early psychological interventions to foster resilience and improve health outcomes for children.

Ethics

This research has received ethical approval from the Research Ethics Committee of Health Polytechnic of the Ministry of Health Sorong (Decision No: DM.03.05/8/044/2024, dated 4 January 2024). The informed consent process was provided in easily understandable language to ensure participants and their parents comprehended the aims and procedures of the study. Written consent from parents was facilitated using child-friendly visual aids to ensure children's participation in the research was understood. Data confidentiality was strictly maintained through special coding, data encryption and restricted access limited to the research team. In the event of distress in children during therapy, researchers had prepared referrals to child psychologists for further management.

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Conflicts of interest

The authors declare that there is no conflict of interest.

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Data access

The data that support the findings of this study are available from the corresponding author upon reasonable individual request.

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