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Case Report: Training Emotion Regulation and Behavioral Modification in Children with Intellectual Disability

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Abstract

Introduction: *Children with intellectual disabilities often exhibit challenging behaviors, including aggression, due to difficulties in emotional regulation and communication. These behaviors can significantly impair social functioning and require targeted interventions.* ***Objective:*** *This study aimed to reduce aggressive behaviors in a 7-year-old child with mild intellectual disability through a structured intervention combining emotion regulation training and behavior modification techniques.* ***Method:*** *The intervention included psychoeducation for the parent, emotion recognition and regulation sessions using visual aids and interactive videos, and a token economy system to reinforce positive behaviors. The child's progress was monitored through behavioral observations and parental reports over multiple sessions.* ***Result and Discussion:*** *The intervention resulted in a 93% reduction in aggressive behaviors, decreasing from seven incidents per day to fewer than one. Improvements were also noted in the child's ability to identify and express emotions appropriately. The parent successfully implemented the token economy system, contributing to sustained behavioral changes.* ***Conclusion:*** *The findings demonstrate integration of emotion regulation strategies, caregiver training, and token economy can effectively manage aggression in children with intellectual disabilities.*

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Introduction

Research indicates that 10–15% of individuals with intellectual disabilities exhibit challenging behaviors, such as aggression toward others, self-injury, destructive actions, or socially disruptive conduct (Holden & Gitlesen, 2006; Kim, 2023). Aggression is more prevalent among individuals with intellectual disabilities (ID) (Van Den Bogaard et al., 2018), compared to the general population. These challenging behaviors are most common in elementary school-aged children, males, and those with limited communication skills or severe intellectual impairment.

Intellectual disability is a condition characterized by limitations in mental functioning, typically marked by a low IQ score, generally below 70 on traditional intelligence tests (Lee et al., 2025), difficulties in adapting to everyday life demands, and the onset of these characteristics before the age of 18 (Santrock, 2014). Both low IQ and impaired adaptive functioning must be evident during developmental period, from infancy until adolescence (Patel et al., 2020). Some cases of intellectual disability have organic causes arises from genetic abnormalities or significantly impaired intellectual functioning due to brain damage. Other causes include Fragile X syndrome (a chromosomal disorder affecting the X chromosome), prenatal malformations, metabolic disorders, and other conditions impacting brain development (Shree & Shukla, 2016).

The intervention program employs psychoeducation and behavior modification techniques, specifically emotion regulation modeling and token economy, to address the participant's needs. The psychoeducation component provides comprehensive information about the participant's diagnosis, assessment results, risk factors, learning priorities, and appropriate parenting approaches. Given the participant's current permissive parenting environment that contributes to uncontrolled behavior, the program recommends adopting a democratic parenting style shows improves emotional regulation in children with special needs by supporting cognitive development and emotional management (Muna et al., 2022).

Emotional development in intellectually disabled individuals varies by cognitive level (Zulfah et al., 2020), often manifesting as unstable emotions and aggressive behaviors due to difficulties in expressing frustration(Jacob et al., 2021). This aggression, defined as harmful physical or psychological actions, frequently leads to social rejection. However, studies demonstrate that emotion regulation therapy can significantly improve behavioral control. Therefore, in this case, emotion regulation techniques and token economy are implemented to reduce aggressive behaviors in children with intellectual disabilities.

Participant

The participant is a 7-year-old, first-grade student in an inclusive elementary school program, who demonstrates below-average cognitive functioning consistent with an intellectual disability classification. This neurological impairment is clinically attributed to prematurity at birth (birth weight: 1.75 kg) and twin gestation, both known risk factors for developmental disorders. Diagnostic assessments confirmed the presence of organic brain damage that significantly impacts the participant's cognitive and adaptive functioning capacities.

The mother reported escalating behavioral concerns regarding her child, who has recently exhibited intense emotional outbursts characterized by screaming, throwing objects (including an incident where a sandal hit the grandmother's eye), and physical aggression toward family members. These aggressive episodes, occurring four or more

times daily with multiple consecutive strikes, primarily manifest when the child's immediate demands are not met. Notably, these behaviors emerged after elementary school enrollment, representing a significant change from the child's pre-school years when such aggression was absent. Concurrent developmental challenges include impaired fine motor skills (difficulty using scissors), academic struggles in classroom settings, and unclear verbal communication. The behavioral pattern suggests maladaptive attempts at immediate gratification, with aggression serving as ineffective communication when needs are delayed.

Assessment

The assessment tools employed in this study included observation, interviews, and psychological testing. Researchers utilized the following instruments: the Vineland Social Maturity Scale (VSMS), Child Behavior Checklist (CBCL), Binet Intelligence Test, and Bender Visual-Motor Gestalt Test. Assessment results revealed the participant, on both the Binet and VSMS tests, classifying within the mild intellectual disability range. Academically, the participant performed below grade-level expectations compared to same-age peers. Particular attention is required regarding the participant's stress responses and emotional regulation, as these tend to manifest externally through behaviors directed toward others or the environment, potentially compromising interpersonal relationships.

Intervention Design

The program implements Romero's (2022) modeling method using interactive videos and emotions flash cards to teach emotional recognition and coping strategies, chosen for its simplicity and engaging format suitable for intellectually disabled participants. The interactive video were changed, due to English language usage, and replaced with Indonesian emotion introduction video “Lagu Anak Anak | Mengenal Emosi” accessed on BaLiTa-Baba Lili Tata’s YouTube channel (BaLiTa, 2022). The token economy system was based on Permatasari & Rifameutia's (2023) work and Skinner's operant conditioning theory (Tan et al., 2022), using immediate visual rewards, like stars on a board, to reinforce positive behaviors without punishment for failures, making it particularly effective for children with intellectual disability. By integrating these approaches, the program aims to reduce aggressive behaviors and enhance emotional regulation through structured yet flexible interventions tailored to the participant's cognitive and emotional capabilities.

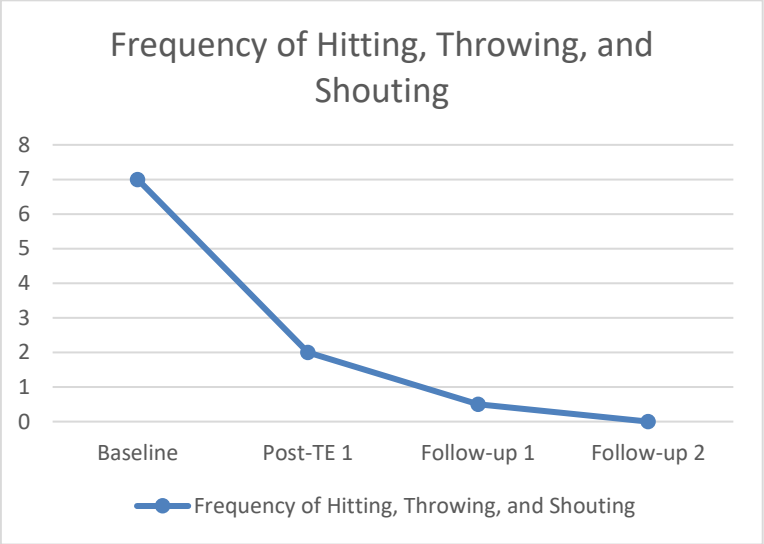
Tabel 1
Intervention Design Table

Session	Duration	Stages
Psychoeducation	120’	• Explained participant's cognitive, emotional, and behavioural conditions • Discussed intellectual disability challenges and parenting strategies • Identified causes of aggressive behaviours (hitting, throwing objects) • Taught appropriate parenting approaches for intellectual disability
Emotion Recognition	30’	• Introduced basic emotions through BaLiTa’S: *“Lagu Anak Anak | Mengenal Emosi”* video • Used emotion flashcards with facial expression practice • Participant imitated demonstrated emotional expressions
Emotion Naming	30’	• Reinforced emotion recognition through video review • Practiced emotional expression imitation • Participant answered "How do you feel today?" using prompts
Emotion Regulation	30’	• Taught specific regulation techniques: o Anger: Deep breathing o Happiness: Clapping o Sadness: Hugging mother o Fear: Asking for help • Participant practiced pairing emotions with appropriate techniques
Token Economy	120’	• Explained behaviour modification system to mother • Set target behaviours and reward structure • Participant chose preferred rewards • Mother administered token system independently • Immediate rewards given for behaviour improvement
Monitoring, Follow Up, Termination	60’	• Reviewed program effectiveness • Maintained behavioural gains • Assessed long-term program success and ongoing difficulties • Confirmed sustained behaviour improvement • Documented significant behavioural changes • Planned future strategies for similar challenges • Celebrated therapeutic achievements • Mother demonstrated independent emotion validation skills

The implemented intervention comprised: (1) one psychoeducation session, (2) three emotion regulation sessions, (3) one token economy training session, and (4) monitoring/follow-up/termination phases. The psychoeducation component educated the mother about the client's clinical condition and appropriate parenting strategies for intellectual disability. During emotion regulation training, a modeling technique was systematically applied through three developmental stages: (a) basic emotion recognition using visual aids such as video and flash cards, (b) emotion naming (labeling emotions), and (c) practical emotion regulation skill acquisition. For the token economy implementation, the therapist trained the mother to independently administer the system at home while maintaining behavioral frequency records. The final phase involved progress monitoring of the token economy's efficacy, follow-up evaluations, and formal program termination.

Result and Discussion

This psychological intervention focused on addressing aggressive behaviors (hitting, throwing objects, shouting) in a participant with intellectual disability through emotion education, self-regulation techniques, and a token economy based on Permatasari & Rifameutia's (2023) work and Skinner's operant conditioning theory (Tan et al., 2022). During the initial phase, therapy successfully enhanced the participant's understanding of basic emotions (happiness, anger, sadness, fear) using visual aids and expression exercises deigned by Romero's (2022). The participant showed significant progress in identifying and expressing emotions, though initial difficulties were noted with recognizing "sadness" and "fear." The token economy intervention, implemented with the mother as co-therapist, effectively reduced aggressive behaviors from a baseline frequency of 7 times per day to 0-1 times daily (Diagrams 1). Notably, the participant began adopting self-regulation strategies such as deep breathing when angry



Diagrams 1. Behavior Changes Diagram

The mother's role as primary support proved crucial to the intervention's success. Through psychoeducation, she came to understand that the participant's aggressive behaviors represented unskilled communication resulting from cognitive limitations. She consistently applied the token economy system, providing positive reinforcement while avoiding negative reinforcement (such as yielding to the participant's demands during aggressive episodes). Although Phase II faced some implementation challenges due to occasional lapses in record-keeping and the participant's illness, the behavioral improvements were maintained. The mother reported enhanced communication with the participant and began incorporating him into routine activities like swimming.

Final outcomes demonstrated reduction in aggressive behaviors and marked improvement in the participant's emotion regulation skills. This finding aligns with Romero (2022), which demonstrated that this structured intervention sequence effectively enhances emotion regulation skills in children with intellectual disabilities (ID). Emotion regulation training program also effective improving children with ID emotion regulation, resulting in more expressive individual (Fiona & Indianti, 2019). This intervention resulted in reduced maternal distress regarding the participant's behavior, with the mother

developing independent emotion validation skills. The therapist recommended periodic follow-up sessions to monitor the participant's developing autonomy, along with optional psychological support for the mother as needed. This comprehensive approach combining behavioral modification with family involvement proved effective in managing challenging behaviors associated with intellectual disability.

Conclusion

This case study concludes that a combined intervention approach integrating emotion regulation training, token economy reinforcement, and caregiver psychoeducation proved highly effective in managing aggressive behaviors in a 7-year-old child with mild intellectual disability of organic origin. The intervention achieved a 93% reduction in daily aggressive incidents, alongside marked improvements in emotional literacy and self-regulation skills, particularly through the adoption of breathing techniques during anger episodes. The case underscores the importance of addressing emotional dysregulation as a core component of behavioral interventions in cognitively impaired populations, while highlighting the need for developmentally-appropriate adaptations to ensure comprehension and participation.

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