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Behavioral Adaptation For Autism Tantrums: A Family-Based Intervention Model

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ABSTRACT
Tantrums in adult autism are a problem that often poses a significant challenge for parents, families, and health workers. Continuous tantrums can hurt the child's social, emotional, and interpersonal development. In addition, in adult autistic individuals, emotional management problems can also reduce their social adjustment and quality of life. Although various interventions have been implemented, there are still shortcomings in a holistic and sustainable approach, especially those involving the family's active role in managing tantrum behavior. This study aims to determine how family-based intervention programs adapt to adult autistic tantrum behavior. The research method uses Research and Development (R&D) with the ADDIE approach. Participants are families who have the danger of adult autistic tantrums. The results of the study indicate that the family-powered intervention program in adapting adult autistic tantrum behavior is effective in reducing adult autistic tantrum behavior. Development of a family-based intervention program that combines adaptations to the types of sounds heard by autistic adults and is a novelty in providing optimal learning experiences for autistic adults with tantrum behavior problems.

Keywords: adaptation, adult autism, intervention, tantrum

INTRODUCTION

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by significant impairments in social interaction, communication, and restricted/repetitive patterns of behavior, interests, and activities (American Psychiatric Association, 2013). Beyond the core symptoms, maladaptive behaviors such as aggression are associated with ASD and can further disrupt functioning and quality of life. Most individuals with ASD will spend their lives as adults with ASD, highlighting the urgent need for effective treatments for maladaptive behaviors in autistic adults. In cases of aggression, such behaviors can result in harm to others or the individuals themselves (Murrie, 2002). According to the Centers for Disease Control and Prevention (CDC), the prevalence of ASD among eight-year-olds in the United States was 1.85% in 2016, a 27% increase from 1.45% in 2012 (Meaner et al., 2016). The rising prevalence underscores the need to identify effective interventions for aggression in autistic adults.

Efforts to address this issue have been ongoing for over two decades, employing various research approaches. However, current clinical research on managing aggression in adults with ASD reflects the limited literature in this field. High rates of depression and anxiety are also common in individuals with ASD, particularly during adolescence and early adulthood, which are often accompanied by worsening behaviors (Dicekik et al., 2012).

A 2011 survey conducted in Pennsylvania on 3,500 children, adolescents, and adults with ASD revealed that 28% required hospitalization due to behavioral, psychiatric, or medical issues often caused by negative experiences and undesirable outcomes (Johnson et al., 2012). Acute management efforts in children, adolescents, and adults with ASD have shown limited success and frequently result in adverse impacts.

Adults with ASD often exhibit abnormal sensory responses to environmental stimuli, which can make adapting to new places or situations difficult. Many individuals with ASD experience sensory sensitivities, now included as a diagnostic criterion for ASD in DSM-5 (APA, 2013). While not all individuals with ASD display sensory sensitivities, their prevalence is significant (60–96%; Schauder & Bennetto, 2016). These sensitivities are also linked to other ASD characteristics, such as social difficulties and repetitive behaviors.

One frequently reported sensory sensitivity in ASD is sound sensitivity (Baranek et al., 2006; Haesen et al., 2011; Jones et al., 2009). For instance, certain sound frequencies may be particularly distressing, loud noises may be painful, and mixed sounds, such as multiple people talking simultaneously, can be overwhelming (Kuiper, Verhoeven & Geurts, 2019). These challenges often lead to tantrums, self-injury, or aggression.

Because of their sensitivities and uncertainties, individuals with ASD tend to rely on routines and stability. They respond better when given opportunities to retreat or isolate rather than facing further distress. Unfamiliar changes to procedures or environments can trigger anxiety and disruptive behaviors. Agitation, marked by chronic anxiety and excessive psychomotor activity, often manifests as an emotional expression in autistic adults (Dorland's, 2007). Physical violence, including actions such as hitting, kicking, or self-injury, poses short- and long-term consequences, including injury, disability, and even death (Child Welfare Information Gateway, 2016).

Parents of children with disabilities often experience caregiver stress, which is associated with physical violence toward the child (Aini, Susanto & Rasni, 2020). Families caring for individuals with ASD face numerous challenges, including financial strain, disruptions in planned activities, and a focus on short-term rather than long-term goals. Social support and resilience within the family system are critical for effective adaptation to these challenges.

With the growing prevalence of autism among adults, it is crucial to address their unmet needs, barriers to accessing services, and the importance of public policies to support aging caregivers (Dudley et al., 2019). Parents, despite often feeling overwhelmed, hope their children can grow and adapt normally. Interdisciplinary approaches involving specialists and counselors as coordinators have proven effective in reducing caregiver stress (Sunardi, 2017).

The family plays a pivotal role in behavioral interventions, particularly in managing tantrums through appropriate strategies. Family-centered intervention programs are essential to help individuals with ASD better process, regulate, and respond to environmental stimuli (Ermanto, 2020). Examples of effective family-based interventions include the development of video-guided social skills training tailored to real-life contexts, enhancing the relevance of these skills (Herrema et al., 2017; Bartley, 2007).

Research conducted in Iran highlighted parents' concerns about their children's futures, particularly in communication skills, emphasizing the importance of policies supporting social communication development in autistic adults (Ghanadzade, Waltz & Ragi, 2018). Studies on tantrums and emotional outbursts have also underscored the need for parental education and training in recognizing and constructively responding to signs of frustration or anger (Van den Akker, Hoffenaar & Overbeek, 2022; Potegal & Davidson, 2003).

These findings demonstrate the importance of family involvement in creating stable, supportive environments for autistic adults, enabling them to manage behaviors more effectively and improving their quality of life.

RESEARCH METHODS

Research Method

This study employs a research and development (R&D) method. The objective is to develop a product in the form of a family resource-based intervention program for adapting tantrum behaviors in adults with autism.

Study Design

The purpose of this study is to formulate a family resource-based intervention program for adapting tantrum behaviors in adults with autism. Following the background and problem formulation, the next step is designing the research framework.

Four key questions guide the study:

1. What are the needs for a family resource-based intervention program to adapt tantrum behaviors in adults with autism?
2. What are the profiles of children with tantrum behaviors and their families?
3. How can an intervention program draft be developed?
4. Is the intervention program effective in adapting tantrum behaviors?

The effectiveness of the intervention is evaluated using the Wilcoxon test. The selected research methodology is Research and Development (R&D) with the ADDIE approach: Analyze, Design, Develop, Implement, and Evaluate. ADDIE is a product development paradigm for designing educational systems that emphasizes being family-centered, innovative, authentic, and inspirational.

Analyze (Analysis)

The needs analysis phase identifies problems and solutions through three areas:

1. **Theoretical Analysis:** Reviewing ecological, andragogical, constructivist, and behavioral theories, particularly systematic desensitization.
2. **Draft Analysis:** Creating initial program drafts in stages, including preparation, implementation, real-life exposure at home, and positive reinforcement.
3. **Empirical Analysis:** Gathering data on families' initial ability to understand and adapt to tantrum behaviors. Data collection includes interviews, observations, and documentation from a case in Jakarta.

Research Procedures

The research comprises five stages: Analyze, Design, Develop, Implement, and Evaluate.

1. Design (Planning)

This stage involves designing performance assessments and appropriate tests. It includes objectives, procedures, content, methods, and evaluations for the intervention program. Instruments are also prepared to evaluate the intervention program's implementation by families.

2. Develop (Development)

In this phase, the intervention program is realized based on the planned design. Validation tests are conducted to assess the program's design. Outputs include validated drafts and program guidelines.

3. Implement (Implementation)

Implementation is conducted in a designated research location, involving families. This phase includes limited field trials and training sessions, with training components comprising materials and practical exercises. Effectiveness testing is performed during field trials.

4. Evaluate (Evaluation)

The final stage involves revising the family resource-based intervention program for adapting tantrum behaviors in adults with autism.

Research Variables and Data Collection Instruments

1. Research Variables

Independent Variable: Family resource-based intervention program, involving systematic exposure to sound adaptations over five treatments.

Dependent Variable: Adaptation of tantrum behaviors in adults with autism, focusing on sound adaptation and sound intensity.

2. Data Collection Techniques

Observation: Direct observation of family activities and tantrum behaviors in the subject's home.

Interviews: Conducted with parents of adults with autism and tantrum behaviors to explore their

understanding and application of the intervention program.

Documentation: Collecting data on preparatory activities by parents for adapting tantrum behaviors.

3. Research Instruments

Research instruments include tools designed to collect data effectively, aligned with the research objectives.

Data Analysis

The analysis involves qualitative descriptive techniques for initial assessments and quantitative analyses using the Wilcoxon test to evaluate program effectiveness. Comparative statistical methods, including paired t-tests, are used to assess differences in tantrum behaviors before and after the intervention. Normality tests, such as the Shapiro-Wilk test, ensure data distribution suitability for parametric analysis.

RESULT

Initial Draft of the Program

The initial draft was developed based on the forms of tantrum behavior,

frequency of tantrum occurrences, triggering factors, and the time and duration of tantrums.

Table 4.1 Triggers of Tantrum

Tantrum Behavior	Frequency	Triggering Factors	Time/Duration
Screaming, attacking, biting	4-6 times/week	Hearing loud noises, vehicle sounds, or disliked songs	5-10 minutes
Kicking	2-4 times/week	Hearing a child crying	1-2 minutes
Biting others	2 times/week	-	1-2 minutes
Pulling hair	2-3 times/week	Hunger	1-3 minutes
Pushing	2-3 times/week	Unmet desires	1-2 minutes
Anger	3-5 times/week	-	3-5 minutes
Scratching hands	2 times/week	Not getting what was requested	1-2 minutes
Screaming	3-4 times/week	Feeling hot	1-2 minutes

From the table above, it can be concluded that the dominant trigger for tantrum behavior in adults with autism is auditory disturbances, with the longest tantrum duration being 5-10 minutes. The types of sound disturbances that trigger tantrums include 19 different sounds listed in Table 4.2 Table 4.2 Types of Sound Disturbances

No.	Sound
1	Child crying
2	Television broadcast
3	Certain music
4	Family members' conversations

5	Dog barking
6	Water pump noise
7	Grinding noise
8	Welding sound
9	Wood-cutting machine noise
10	Wood planer machine noise
11	Hammering nails sound
12	Drilling machine noise
13	Mixer noise
14	Vehicle engine noise
15	Modified exhaust sounds
16	Road noise
17	Crowd noise from visitors
18	Promotional noise from stores
19	Arcade machine sounds

arent Profile Development

The parent profile was developed based on their understanding of the child, tantrum-related triggering factors, frequency and duration of tantrums, efforts to calm tantrums, and obstacles factors.

Table 4.3 Family Response to Tantrum Behavior

Indicator	**Parent Profile**
Understanding the child	Nearly giving up, unsure how to manage the child. Psychological stress due to long-term management of tantrums.
Understanding tantrum triggers	Lack of knowledge about tantrum behavior, triggers, or early warning signs. Sudden attacks by the child.
Frequency and duration	3-15 minutes.
Efforts to calm tantrums	Parents let the child calm down independently, sometimes getting angry themselves. In extreme cases, they restrain the child using pillows.
Obstacles faced	Physically larger and stronger child, sudden and unexplained outbursts, lone caregiver situations.

Formulating Appropriate Programs

Table 4.4 Formulating Appropriate Programs

No.	Cause of Tantrum	Family's Alternative Actions	Reaction	Theory	Proposed Program
1	Sound	Avoiding or reducing noise exposure.	Aggression, anxiety, self-injury	Sensory desensitization can help reduce the intensity and frequency of harmful behaviors.	Environmental adaptation with physiological habituation program.
2	"Requesting something"	Redirecting the child with alternative options and diet modifications.	Muttering, screaming, attacking	ASD adults may benefit from sugar- and carb-controlled diets to address metabolic disturbances.	Dietary discipline focusing on low sugar and low carb foods.

Implementation of the Initial Draft of Family-Resource-Based Intervention Program Based on Sound Decibels

Theoretical Analysis on Setting Decibel Intervals

The determination of decibel noise intervals was based on:

1. **Indonesian Ministry of Health Regulation No. 718/Menkes/Per/XI/1987 (1987)** concerning Noise and Health.
2. **Minister of Environment Decree No. 48 (1996)** on Noise Level Standards.
3. **World Health Organization (WHO)** data cited by Hamzah, Agriawan, and Kadir (2022), which states that safe noise levels are set at 75 decibels (dB).
4. **Patrick Dwyer et al. (2024)** explained physiologically that noise levels below 50–60 dB may trigger discomfort in individuals with Autism Spectrum Disorder (ASD).

Based on these findings, the decibel intervals in this study were categorized into five levels:

- 35 dB: Very Low
- 45 dB: Low
- 55 dB: Moderate
- 65 dB: High
- 75 dB: Very High

Intervention Learning Program

Sound adaptation training was conducted using an initial program draft. Parents were given simulations before and after the training program. Adult autistic subjects with tantrum behavior participated in a sound adaptation program over five sessions.

Steps in Sound Adaptation:

1. **Noise Sources**: Pre-recorded continuous noises that were identified during parent interviews as potential triggers for tantrums.
2. **Controlled Environment**: Subjects were placed in an ideal setting to eliminate confounding variables.
3. **Exposure Duration**: Noises were presented for 1–5 minutes starting from 35 dB, gradually increasing until a tantrum response or related symptoms emerged.

Phased Approach for Adults with Autism

Stage 1: Initial Preparation

- **Understand Child's Response to Sound**: Identify sounds that trigger discomfort, such as crying or household appliances.
- **Set Target Sounds**: Focus on 1–2 daily encountered sounds, listing them from least to most uncomfortable.
- **Create a Controlled Environment**: Use sound players and prepare rewards for progress.

Stage 2: Desensitization Program Implementation

- **Introduce Low-Volume Sounds**: Gradually increase duration and intensity based on the subject's tolerance.
- **Provide Positive Reinforcement**: Reward successful exposure to noises.

Stage 3: Real-World Exposure at Home

- **Introduce Varied Sounds**: After adapting to recorded noises, transition to real-life sound sources like kitchen appliances or public areas.

Stage 4: Positive Reinforcement and Evaluation

- **Track Progress**: Record responses before and after exposure to identify improvements.

Table 4.5 Average Noise Levels Triggering Tantrums in Adults with Autism

No	Noise Type	Pre-Test Average (dB)	Post-Test Average (dB)

1	Crying child	41	61
2	TV broadcast	51	61
3	Certain music	53	63
4	Family conversations	53	75
5	Dog barking	49	69
6	Water pump machine	49	57
7	Grinder noise	39	47
8	Welding sound	55	73
9	Woodcutting machine	37	55
10	Planer machine	39	53
11	Hammering nails	53	75
12	Drill machine	37	59
13	Mixer machine	37	63
14	Motor/car engine	51	71
15	Modified exhaust sound	53	61
16	Tire-road interaction	53	75
17	Crowd noise	51	71
18	Store promotions	51	69
19	Game machine noise	49	69

Findings:

- Pre-test results showed higher tolerance for welding noise (55 dB) and lower tolerance for woodcutting, drilling, and mixer sounds (37 dB).
- Post-test results indicated improved tolerance for hammering nails and tire-road interaction sounds (75 dB), while the lowest tolerance was for grinder noise (47 dB).

Tantrum Behavior Coding and Categorization

Table 4.6 Tantrum Behaviors and Codes

Behavior	**Code**
Withdrawal/Isolation	Very Mild (1)
Repetitive or Intense Stimming	Mild (2)
Crying or Whining	Moderate (3)
Verbal Tantrum	Severe (4)
Aggressive Behavior	Very Severe (5)

Table 4.7 Tantrum Categorization Based on Scores

Behavior	**Category**
Withdrawal/Isolation	1.0–1.8
Repetitive or Intense Stimming	1.9–2.6
Crying or Whining	2.7–3.4
Verbal Tantrum	3.5–4.2
Aggressive Behavior	4.3–5.0

Table 4.8: Average Tantrum Behavior Scores in Adults with Autism

No	**Noise Type**	**Pre-Test Average**	**Post-Test Average**
1	Crying child	3.4	3.2

No	Noise Type	Pre-Test Average	Post-Test Average
2	TV broadcast	3.2	2.8
3	Certain music	3.6	3.4
4	Family conversations	3.6	3.4
5	Dog barking	3.4	3.4
6	Water pump machine	4.6	4.4
7	Grinder noise	4.4	4.4
8	Welding sound	4.4	4.2
9	Woodcutting machine	4.4	4.4
10	Planer machine	4.2	4.2
11	Hammering nails	3.2	2.8
12	Drill machine	3.4	3.2
13	Mixer machine	3.6	3.4
14	Motor/car engine	3.8	3.4
15	Modified exhaust sound	3.6	3.4
16	Tire-road interaction	3.4	3.0
17	Crowd noise	3.4	3.2
18	Store promotions	3.6	3.4
19	Game machine noise	4.2	4.0

Findings:

- Pre-test tantrum behaviors ranged from crying to aggressive.
- Post-test results indicated a shift towards less severe tantrum behaviors, predominantly crying or whining.

Data collection for the pre-test phase occurred five times in March 2024, while the post-test data was collected in June 2024, following sound adaptation interventions.

DISCUSSION

The study results are focused on the findings: (1) the profile of tantrum behavior in adults with autism, (2) family profiles, (3) the formulated and agreed intervention program, and (4) the effectiveness of family-based intervention programs in adapting tantrum behavior in adults with autism.

The family-based intervention program is designed around sound adaptation strategies to reduce tantrum behavior in adults with autism. The program includes understanding tantrum behavior, family profiles, and the formulation of agreed-upon interventions. The intervention program is intended as a reference or guideline to teach sound adaptation to adults with autism experiencing tantrums.

The Essence of Program Development

a. Foundation for Developing Programs for Adult Autism Tantrum Behavior

Before discussing the family-based intervention program, this section begins with a review of adult autism tantrum behavior as part of the research and development process.

An appropriate intervention program is crucial for creating meaningful learning experiences. A well-designed program helps parents learn and facilitates problem-solving (Fakhrurazi, 2018). The program selection involves various methods, approaches, and techniques that parents can use to enhance the understanding and development of

adults with autism (Asrori, 2016). The program centers on sound decibel tools designed to improve auditory accuracy and memory, with sound adaptation considered an effective auditory rehabilitation method that can be implemented at home (Miranda et al., 2010).

The sound adaptation method in the family-based intervention program focuses on reducing tantrum behavior. The program teaches about sounds through simple experiments integrated into the types of sounds that trigger tantrums. The development of this program is based on Von Glasersfeld's constructivism theory, which emphasizes learning to discover talents, add knowledge, and develop skills (Mowrer et al., 2002). Constructivist learning allows participants to gain new insights through active engagement. This theory is applied in two stages: sound implementation and behavior adaptation to tantrums. The draft intervention program was developed based on theoretical analysis of sound-triggered tantrums and adjusted through initial implementation and refinement.

Initial assessments identified tantrum behaviors such as hair-pulling, biting, screaming, kicking, and pushing. Parents' lack of understanding of sound adaptation concepts was identified as a contributing factor. This program integrates sound adaptation steps to achieve learning goals, emphasizing both sound types and related tantrum behaviors.

b. Principles of Program Development

The sound adaptation learning program for reducing tantrum behavior is based on these principles:

1. **Sound Noise Levels**: Pre-recorded noises identified during interviews with parents as potential tantrum triggers.
2. **Controlled Conditions**: Subjects were placed in controlled environments to eliminate confounding variables.
3. **Exposure Duration**: Noise was presented for 1–5 minutes, starting at 35 decibels and gradually increasing up to 75 decibels or until tantrum symptoms emerged.
4. **Noise Level Standards**: Based on regulations such as Indonesia's Ministry of Health Decree No. 718/1987, the Environmental Ministerial Decree No. 48/1996, and WHO guidelines, with safe noise levels below 75 decibels (Hamzah et al., 2022). Noise intensities below 50–60 decibels may cause discomfort for individuals with ASD (Dwyer et al., 2024).

Program Implementation Results

a. Results of Family-Based Intervention Implementation

After undergoing training, parents showed improved understanding of tantrum behavior and sound adaptation concepts. This aligns with research indicating that intervention programs can facilitate meaningful learning and problem-solving (Majid, 2017). Enhanced parental knowledge enabled effective tantrum behavior management in adults with autism.

b. Effectiveness of Family-Based Intervention

Data analysis using the non-parametric Wilcoxon Signed-Rank test revealed significant improvements:

1. **Sound Thresholds**: A P-value < 0.05 confirmed a reduction in tantrum behavior following sound exposure training.
2. **Tantrum Behaviors**: Similar results indicated significant behavioral improvements post-intervention.

The intervention facilitated physiological habituation to sounds, reducing tantrum-triggering sensitivity. This finding supports earlier studies on sensory processing adaptations in individuals with autism (Kuiper et al., 2019).

c. Tantrum Duration

- **Overall**: Average tantrum duration decreased from 8.6 to 7 minutes post-intervention.
- **Longest Duration**: Reduced from 9.6 to 8.2 minutes.
- **Shortest Duration**: Reduced from 7.4 to 5.8 minutes.

d. Tantrum Types

Pre-intervention assessments showed dominant verbal tantrum behaviors, while post-intervention results shifted to crying behaviors.

This family-based intervention demonstrates significant potential for addressing sound-triggered tantrum behaviors in adults with autism, creating meaningful improvements in their daily lives.

Analysis in Conditions

- **Condition Length**

From the figure above, the pre-test condition length is 5, and the post-test condition length is also 5.

- **Directional Trend**

The directional trend is determined using the split-middle method. The results are displayed in the figure below, indicating an upward trend in the pre-test and a downward trend in the post-test.

Differences in Tantrum Behavior in Adults with Autism Before and After Intervention

- **Figure 4.11**

The graph above illustrates the differences in tantrum behavior in adults with autism before and after the intervention.

  - **Pre-intervention**: The average level of tantrum behavior is categorized as high.
  - **Post-intervention**: The average level of tantrum behavior decreases to a low category.

Stability Trend

- Stability criteria use a threshold of 15% in the pre-test and 10% in the post-test. These thresholds determine the stability range, upper limit, and lower limit for each phase:

Comparison of Pre-test and Post-test Conditions

Parameter	Pre-test	Post-test
Condition Length	5	5
Directional Trend	Increasing	Decreasing
Stability Trend	Unstable (20%)	Unstable (60%)
Stability Range	3.67–3.85	3.52–3.59
Level Change	+0.09	+0.04

Intervention Effect

The implementation of systematic desensitization, based on behavioral principles by Wolpe (1958), demonstrated:

1. **Improved Emotional Regulation**: Gradual exposure reduced anxiety triggers for tantrum behaviors.
2. **Increased Adaptive Responses**: Participants exhibited fewer and less severe tantrum behaviors post-intervention.
3. **Behavioral Modifications**: Reinforcement and controlled exposure facilitated behavior adjustments in adults with autism.

This analysis validates behaviorism theories emphasizing environment-driven behavior changes, particularly through systematic desensitization to address maladaptive tantrum responses effectively.

CONCLUSION

Based on observations, interviews, and documentation studies, the condition of tantrum behaviors in adults with autism and the family profile were identified, leading to the formulation of a family-based intervention program for adapting tantrum behaviors in adults with autism. The program's integration and implementation have been shown to align with the conditions of individuals with tantrum behaviors. Test results indicate that tantrum behaviors in adults with autism are predominantly triggered by auditory stimuli.

Data from family profiles serve as the basis for developing the family-based intervention program to adapt to tantrum behaviors in adults with autism. The intervention program design was developed using empirical field studies. The program formulation process began with drafting the program, validating it with subjects displaying tantrum behaviors in adults with autism, and testing its effectiveness in the field.

The family-based intervention program includes a philosophical foundation and conceptual framework, program substance, objectives, principles, analysis of program development conditions, implementation steps, and activities to address tantrum behaviors in adults with autism. Testing results show that systematic desensitization for adults with autism experiencing tantrums can effectively reduce anxiety, improve emotional regulation, and help them adapt better to challenging social or sensory situations.

Implications

Implications for Adaptation Learning

The family-based intervention program for adapting tantrum behaviors in adults with autism is designed for parents to apply daily, particularly in situations involving auditory stimuli. Learning adaptation to sounds should be emphasized to minimize or reduce tantrum behavior. Parents are required to understand the program and master its implementation steps to ensure learning objectives are achieved, and the individual shows improved adaptation to auditory stimuli.

Implications for Program Development

This research highlights the stages of mastering auditory stimuli using the family-based intervention program as an effective method to reduce tantrum behaviors in adults with autism. The program should be implemented accurately and sustainably, both at home and in external environments.

Recommendations

For Parents of Adults with Autism Displaying Tantrum Behaviors

1. The family-based intervention program for adapting tantrum behaviors can be implemented by parents under professional guidance to reduce tantrum behaviors in adults with autism.
2. The program aims to reduce tantrum behaviors, with research showing its effectiveness when applied by families with members who exhibit tantrum behaviors. Parents are encouraged to facilitate and implement the program for individuals with tantrum behaviors, using the guidebook as a reference for program execution.
3. Family N is encouraged to implement the family-based intervention program following the procedures formulated by the researcher and family. Consistency and patience are required for sustained implementation of auditory adaptations to improve the condition of individuals with autism, particularly in reducing tantrum behaviors.

For Future Researchers

The program was implemented for adults with autism displaying tantrum behaviors, focusing specifically on auditory adaptations. As such, the findings cannot yet be generalized to a broader scale with different materials or subject conditions. Future researchers are recommended to conduct extensive trials to test the effectiveness of the family-based intervention program for adapting tantrum behaviors in adults with autism.

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