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Emotional, Social, and Recreational Intervention Approaches: An Intervention Study of Emotion Regulation in Adolescents with Autism

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Abstract: In recent years, emotion regulation and intervention within the autistic community have become highly significant areas of focus in autism research. While children with autism are often the primary focus of studies, research specifically targeting adolescents with autism is relatively scarce, and there is a lack of systematic integration of emotion regulation and intervention approaches for this group. This article aims to outline interventions for adolescents with autism across three domains: emotional, social, and recreational, and to describe various interventions within each domain. Emotional interventions include group intervention methods, Emotional Awareness and Skills Enhancement (EASE) techniques, and emotion regulation through humor. Social interventions encompass social skills group interventions and group cognitive behavioral therapy. Recreational interventions involve music therapy, therapeutic horseback riding, and drama-based interventions. A comprehensive review of these methods indicates that most interventions have demonstrated improvements in emotion regulation among adolescents with autism; however, individual approaches require further research and refinement. This paper contributes to the existing literature on emotion regulation and intervention for adolescents with autism and lays a foundation for future research directions.

Keywords: Adolescents with Autism, Emotion regulation, Social intervention, Recreational intervention, Autism interventions.

1. Introduction

Research has shown that autism is a neurodevelopmental disorder with a strong genetic basis and is classified as a Pervasive Developmental Disorder (PDD). The heritability of autism is as high as ninety percent, making it one of the most heritable psychiatric disorders of childhood. Consequently, autism also affects adolescents, with a prevalence rate of 0.1-0.2 percent [1]. Findings indicate that one in every 152 children is affected by autism [2]. Autism negatively impacts adolescents' lives and can even affect the overall quality of life for their families [3-5]. For adolescents, autism is not only a disorder affecting social and communication skills but also involves emotional and behavioral complexities. During adolescence, emotion regulation becomes a critical and challenging area. Emotion regulation is the ability to monitor, assess, and adjust one's emotional state to achieve goals [6-7]. Research on autism in adolescents often focuses on three main areas: emotion recognition,

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understanding, and regulation. Among these, emotion regulation has received considerable attention due to the challenges individuals with autism face in managing anxiety and stress, common issues in clinical cases of autism. During the teenage years, individuals with autism may experience heightened anxiety [8]. This increase in anxiety can stem from limitations in social interactions, language development, and behavior patterns [1]. Adolescents with autism may also become more aware of their differences from others during this period [8]. However, the state of emotion regulation in this group is concerning. For instance, a study involving 91 autistic adolescents found that over 25% exhibited severe emotion regulation difficulties [9]. They may overreact to external emotional stimuli and engage in behaviors such as aggression and self-harm [10]. Furthermore, previous studies indicate that individuals with autism are more dependent on others for emotion regulation, and that the severity of autism symptoms is correlated with emotional responsiveness [11]. In addition to this, Emotion regulation challenges significantly affect the social interaction skills of adolescents with autism [12]. Enhanced emotion regulation abilities in individuals with autism can improve their emotional functioning, enabling them to respond more appropriately in social situations and to develop coping skills for various situations and stimuli [6, 13-14]. Therefore, effective emotion regulation is crucial for adolescents with autism.

In previous studies, reviews of emotion regulation and intervention approaches for autism have primarily focused on groups of children, such as research on emotion regulation skills in young children (ages 12-72 months) with autism spectrum disorders [11]; combined different age groups, as seen in studies on interventions for mood disorders spanning preschool through adolescence [15]; or discussed individual intervention approaches, such as digital interventions or physical activity methods [16-17]. However, previous studies have lacked a systematic review and analysis of emotion regulation and intervention methods specifically for adolescents with autism. Therefore, this study will focus on the manifestations of emotion regulation difficulties in adolescents with autism and provide a comprehensive review of intervention methods aimed at managing emotions in this population.

For adolescents with autism, emotional difficulties can cause considerable distress, and emotions tend to be more complex in this age group. As a result, there has been substantial discussion and research on emotion regulation in adolescents with autism, as well as the interventions that can be used to address these emotional challenges. Through reviewing the literature, several broad categories of interventions for adolescents with autism have been identified, including emotion regulation and self-management, social skills and social integration, family engagement and support, positive thinking and creative arts, behavioral improvement and skill development, and technology and distance learning.

This article explores the various integrated approaches to intervention for adolescents with autism mentioned above. By analyzing and discussing the different components and methods within each category, this review aims to provide comprehensive support across multiple dimensions for adolescents with autism.

2. Emotional Regulation Interventions for Autistic Adolescents

2.1. Emotion Regulation and Self-management Interventions

The primary focus in emotion regulation and self-management interventions for adolescents with autism includes Group Therapy Sessions, Emotional Awareness and Skills Enhancement (EASE) programs, and exploring humor as an alternative approach to emotion regulation. Group therapy sessions are effective as an intervention strategy. In these sessions, researchers assess signs of social impairment and anxiety in adolescents with autism by organizing an emotional intervention group and conducting 12 weekly group sessions to observe participant behavior [18]. Each session primarily

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involves practicing emotion regulation and social interaction skills by imagining and simulating social scenarios. Simultaneously, each session includes peer interaction activities, supporting and encouraging participants to regulate their emotions within a group setting through peer interactions, providing adolescents with autism opportunities to better understand and manage their emotions [18]. Additionally, the Emotional Awareness and Skills Enhancement (EASE) program is another significant intervention. The goal of this program is to reduce emotion regulation disorders through positive thinking [19]. Positive thinking has been defined as "purposeful and non-critical attention to the present moment" an approach that fosters awareness of internal responses and an attitude of openness and acceptance through meditation practice [20-21]. This program consists of a 16-week individual therapy designed for autistic individuals with emotion regulation disorders. It was validated in a pilot trial involving 20 autistic individuals aged 12–17, aiming to develop and test a new intervention emphasizing emotion regulation through positive thinking exercises and building stress resilience [19]. The study results indicated that most participants showed clinically meaningful improvements in emotion regulation following the Positive Thinking approach, resulting in enhanced social adaptation and coping skills [19]. Finally, the use of humor for emotion regulation represents an intriguing intervention approach. This study explored how various autistic traits are positively or negatively impacted by using humor to regulate emotions. Findings indicated that individuals with high levels of autistic traits were likely to appreciate humor in response to negative events and use it to manage negative emotions [22]. Participants completed various questionnaires, and results showed that limited social communication skills, along with restricted interests and repetitive behaviors, facilitated the adaptive use of humor for emotion regulation [22]. This insight could inform the development of new emotional interventions and identify more suitable emotion regulation strategies for individuals with pronounced autistic traits.

2.2. Social Skills and Social Integration Interventions

A secondary focus in interventions for adolescents with autism is on social skills and social integration, which includes social skills group interventions and group cognitive behavioral therapy (GCBT). First, social skills group interventions address the socialization and communication barriers that adolescents with autism frequently encounter. Schall and McDonough noted that these adolescents face significant challenges in socializing and communicating [23]. They also experience higher rates of bullying compared to their peers without autism [24-26], making social skills interventions essential. In this type of intervention, adolescents with autism are typically placed in small groups, and the teaching strategies vary slightly between groups. Research shows that role-playing is the most frequently used strategy, with one researcher describing it as "the most important technique" in these interventions [27]. Meanwhile, peer-involved interventions are emerging as a promising trend [28-30], with some studies suggesting that such interventions may improve self-esteem among individuals with autism. Current literature supports the effectiveness of social skills group interventions. Additionally, Group Cognitive Behavioral Therapy (GCBT) is another intervention for addressing emotional issues in adolescents with autism. In a study by Blakeley-Smith et al., the primary goal was to partially adapt existing evidence-based, manualized approaches to GCBT to better address the cognitive, communicative, and behavioral needs of adolescents with both autism and anxiety disorders [31]. Preliminary results from the study indicate that GCBT can reduce emotional anxiety in adolescents; however, future studies with larger sample sizes and control groups are needed to obtain more precise results.

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2.3. Recreation and Creative Arts Interventions

Previous research has shown that entertainment and creative arts-based interventions can positively impact emotion regulation in adolescents with autism. These interventions include music therapy, recreational activities, and theatre-based methods.

First, music intervention therapy has shown promise, as studies indicate that both children and adults with autism spectrum disorders exhibit typical physiological responses to music and can assign linguistic labels to musical emotions [32]. The goal of music intervention therapy research is to develop a music-based approach to improve impairments in emotion recognition and the ability to describe emotions in adolescents with autism. Study results indicate that music intervention improves emotion recognition, particularly among older, verbal participants who showed the most significant gains. Second, the Recreational Intervention Method (RIM), specifically therapeutic horseback riding (THR), is an animal-assisted intervention used to manage stress and emotional challenges. Human-animal interactions have been proven to reduce arousal [33-34] and alleviate social stress through positive attentional focusing [35]. Evidence suggests that adolescents with autism perceive more rewards and fewer threats when interacting with animals [36-37]. THR, a specific model of animal-assisted therapy involving horses, has primarily been studied with children under 18 with autism [38-40]. Research with younger children (ages 2-16) indicates that therapeutic horseback riding can reduce irritability, hyperactivity, and improve self-regulation [38][41-43]. These findings suggest that THR can effectively reduce stress and may be considered a non-pharmacological intervention option for individuals with autism in the future. Lastly, theatre-based interventions have shown potential in enhancing emotional regulation in young people with autism. Specifically, the "Hunter Heartbeat Method," based on Shakespeare's play The Tempest, presents a game that allows participants to gradually understand the plot while focusing on the themes of eyes, mind, and heart. This method emphasizes eye contact, mimicry, and improvisation to enhance social interaction, pragmatic language, and facial expression recognition in children with autism spectrum disorders [44]. Test results revealed varying degrees of improvement in social skills, communication, and pragmatic language among participants, and the intervention was well-received by both participants and parents. These findings suggest that the Hunter Heartbeat Method holds promise for improving social and communication skills in children with autism.

3. Conclusion

This article examines various interventions developed in recent years for emotion regulation in adolescents with autism, outlining and summarizing a range of approaches. In the domain of emotion regulation and self-management, both group intervention and the Emotional Awareness and Skills Enhancement (EASE) program have shown significant improvements in mood for adolescents with autism, while humor-based approaches offer potential for developing new, possibly more suitable, strategies for emotion regulation. In terms of social skills and social integration, social skills group interventions and group cognitive behavioral therapy (GCBT) have also been shown to alleviate emotional anxiety in adolescents with autism. Peer-involved interventions may emerge as a promising trend, while GCBT methods will require further refinement in future studies to optimize experimental methods and increase precision in findings. Finally, among recreational and creative arts interventions, music therapy, therapeutic horseback riding, and theatre-based interventions have demonstrated positive effects, with significant improvements in emotional recognition, emotion regulation, and social skills among adolescents with autism. This article focuses specifically on an adolescent population, a group that has been relatively under-researched within the autism community, and provides a systematic review of multiple intervention approaches to avoid research homogeneity. However, expanded literature reviews and integrative analyses of additional interventions are still

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needed in future research. Further empirical studies could also help identify the most effective methods and interventions for moderating emotional challenges in adolescents with autism.

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