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Should emotional dysregulation influence treatment planning for patients with autism spectrum disorder? – a review

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Abstract

Background and objective: A number of studies have shown that patients diagnosed with autism spectrum disorder (ASD) struggle with emotional regulation disorders (ER) throughout their lives. The aim of the study was to discuss the relationship between autism spectrum disorder (ASD) and emotional regulation disorders, the difficulties they cause for patients, and to answer the question of whether emotion dysregulation should influence clinicians' treatment planning for patients with ASD.

Methods: A review of the literature on the connotations between emotional dysregulation and ASD, comorbid disorders, and therapeutic work techniques was conducted. Electronic databases were used: PubMed, Medline Ultimate, Scopus. Google Scholar, EBSCO. Priority was given to publications and studies in English.

Results and Conclusion: Current evidence supports incorporating emotion dysregulation into the treatment planning for individuals with ASD. Studies have established its association with various mental health conditions and social difficulties observed in this population. Importantly, some targeted interventions have demonstrated efficacy in addressing emotion regulation difficulties. Further research in this area appears essential to enhance emotional regulation and, in turn, overall functioning in individuals with ASD.

autism spectrum; emotional regulation; alexithymia

INTRODUCTION

Particular difficulties in communication and cognitive flexibility have made patients with autism spectrum disorder (ASD) the subject of interest of a number of researchers investigating emotional regulation and its deficits. Studies have repeatedly confirmed that emotional dysregulation is common among people with ASD. Patients with this diagnosis are particularly vulnerable to a number of mental disorders and problems. Problems with understanding, expressing and regulating emotions may in some cases be a moderator of this relationship. Considering the well-being of people diagnosed as being on the autism spectrum, it seems important to analyze the available empirical studies and the conclusions drawn from them.

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Autism spectrum

ASD is characterized by deficits in communication, narrow interests, and stereotyped behav-

iors. Eating and sleeping disorders and other accompanying psychiatric and neurodevelopmental disorders are also common [1]. ASD is also characterized by high heritability, with epidemiological studies confirming concordance rates for monozygotic twins of up to 98% and 40 to 60% for dizygotic twins [2]. The number of people diagnosed with ASD is still growing. It is currently estimated that the disorder affects about 1:60 children [3], with a male to female ratio of 4:1 [4]. Autism spectrum disorder is a heterogeneous condition, with symptoms often observable in early childhood; however, diagnosis is frequently delayed. Early identification necessitates a comprehensive, multidisciplinary evaluation and a holistic clinical approach [5]. Currently, there is a notable lack of reliable screening instruments for detecting ASD in very young children, despite the critical importance of early intervention targeting both core and associated symptoms, including those addressed in this manuscript [6,7].

Emotional regulation and its deficits

The development of emotional competence is a lifelong process closely intertwined with physical, cognitive, and social maturation, and plays a critical role in well-being across the lifespan [8]. From an evolutionary perspective, emotion regulation behaviors serve two primary functions: maintaining the individual's physiological stability and sustaining social bonds through influencing others' behavior and signaling internal states [9]. Beyond verbal language, emotions are also conveyed through nonverbal channels, including body posture, vocal tone and intonation, facial expressions, and gestures [10].

Given its relevance for both individual and interpersonal functioning, emotion regulation has become a rapidly evolving field within psychology. Nevertheless, despite growing scholarly attention, a universally accepted definition of "emotion regulation" remains elusive [11]. Among existing conceptualizations, the extended process model offers a comprehensive framework, comprising three sequential stages: (1) **identification**—recognizing the need for regulation; (2) **selection**—choosing an appropriate regulatory strategy; and (3) **implementation**—applying the selected strategy in contextually appropriate ways [12].

Deficits in this type of emotional processing are classified in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) as **alexithymia** [13]. This construct includes three core components: an externally oriented cognitive style (i.e., focus on superficial information and avoidance of introspection), difficulties in identifying one's emotions, and difficulties in articulating emotional experiences [14]. Notably, alexithymia has been associated with poorer mental health outcomes in the general population. Its prevalence is estimated at approximately 12% in the general population and up to 49.9% among individuals with ASD [15].

Research on emotional regulation among the ASD population

Individuals with ASD may be predisposed to impaired emotion regulation (ER) due to differences in cognitive functioning (executive functioning, abstraction, self-awareness), sensory sensitivity, and biological risk [16]. One possible reason may also be that ASD may increase susceptibility to negative stimuli, which then leads to emotion dysregulation. In the study by Mazefsky et al., the mechanisms of continuous processing of negative information in brain activity were examined using functional magnetic resonance imaging (fMRI). The brain regions identified as having greater processing of negative stimuli in the ASD group compared to the typically developing group have previously been associated with emotion dysregulation outside of ASD [17]. Key et al. argue that difficulties in social interactions resulting from ER problems may affect men more than women. Women on the autism spectrum are more effective than men in inhibiting behavioral responses in emotional contexts, whereas men are more likely to display them [18]. However, both sexes experience internal difficulties resulting from emotional dysregulation. For example, in a study by Ozsivadjian et al., 95 young people aged 5 to 18 years (71 boys, 24 girls) were examined who had a diagnosis of ASD. The results suggested that alexithymia in young people with autism spectrum disorder may play a role in internalizing symp-

toms, and difficulties in ER may contribute to greater intolerance of uncertainty [19]. These internal difficulties may negatively affect the mental state of people with ASD. In the study by Josyfon et al., 190 adult participants, aged 18 to 68 years, 153 of whom received a diagnosis of autism spectrum disorder, were examined. A total of 66.3% (N = 126) of the participants were classified as experiencing clinically significant alexithymia. Of this, 83.2% (N = 158) had at least one co-occurring disorder, most frequently anxiety disorders [15]. Morie et al. in a study involving 64 adults with reported ASD showed that alexithymia may relate to mental health in people with ASD, in particular through its association with emotional regulation. Alexithymia mediates the severity of anxiety and depression in these people [20]. In turn, a study by Martinez-Gonzalez et al. conducted on a sample of 239 people with autism spectrum disorder, recruited from 18 facilities in Spain, showed that poor emotion regulation has a unique relationship with self-harm [21]. Also, family life and loved ones of people with ASD suffer from their difficulties with ER. Cano-Villagrasa et al. conducted a study on a total of 170 participants. They suffered from neurodevelopmental disorders. The results revealed significant changes in emotional processes, and confirmed that this affects not only the lower standard of living of the patients themselves, but also the quality of life of their families [22]. The problems of family life are compounded by the fact that even the youngest children experience emotional difficulties,which confirms a number of studies. The study conducted by Day et al. confirms that young children with ASD use emotion regulation strategies, but ineffectively. It was conducted on a group of 37 children aged 22 to 28 months, of whom 17 had ASD. Toddlers with ASD also showed fewer positive facial expressions and fewer joyful body movements [23]. De Lucia et al. examined emotional and behavioral self-regulation in a sample of 45 preschoolers with and without ASD. Their findings indicate that emotional instability is associated with both emotional and behavioral problems. On the other hand, the ability to use emotion regulation may be protective against emotional problems for children with ASD [24]. Li et al. in their study examined boys with and without autism spectrum disorders. The study included 156 children aged 2-6 years. The boys were examined three times, over three consecutive years. ASD participants showed more behavioral problems than their peers, and lower levels of emotional functioning. Moreover, better emotional regulation was associated with a decrease in problem behaviors [25]. Tajik-Parvinchi et al. conducted a study that included 48 children aged 8 to 13 diagnosed with neurodevelopmental disorders, including ASD, and measured the relationship between working memory, inhibition, switching, and internalizing, and externalizing symptoms. They concluded that children with these disorders use persistent emotion regulation strategies when they go through a stressful event [26]. However, difficulties may persist into adulthood. Benete et al., examining a group of 33 adults with ASD and 35 typically developing individuals, found that there is a significant disproportion in the experience of alexithymia and dysfunctional emotional regulation, with a predominance in the group with ASD [27]. Anxiety and depression are not the only difficulties that are exacerbated by ER in people with ASD. Difficulties with emotional regulation may make it more difficult for people with ASD to cope with negative emotions such as the feeling of being ridiculed. This contributes to the occurrence of gelotophobia, i.e. the fear of feeling humiliated by being ridiculed. It has been proven that people with ASD experience gelotophobia much more often than neurotypical people [28]. This in turn may lead to withdrawal from social life and contribute to, for example, becoming addicted to video games and online games. This thesis seems to be confirmed by the study by Murray et al., in which gaming addiction, gelotophobia and problems with emotional regulation occurred in people with ASD [29]. The discussed studies unanimously indicate that dysfunctional emotional regulation and alexithymia constitute a significant problem among the population of people with ASD. This has significant implications for planning treatment and therapeutic interventions.

Therapy methods supporting the development of emotional regulation in people with ASD

It is important to use adequate and relevant methods of working with patients with ASD, which will allow them to develop the ability to regulate emotions. In the case of children, it may be important to influence through daily interactions, routines, and modeling. The SCERTS model, which supports emotional regulation and social communication and was created specifically for people with ASD [30], would be useful here. In order to enable children with autism spectrum disorder to develop through modeling, which is assumed by the above method, it is necessary to use inclusive education, allowing them to feel a sense of belonging to a peer group [31]. As indicated by Wright's study, conducted using the case study method, positive effects can be observed in adults thanks to art therapy. During the sessions conducted with the subject, activity with graphic representations presenting emotional expression gave him a resource in the form of a specific way of describing his feelings [32]. Benefits in working with people with ASD also bring the Emotional Awareness and Skills Enhancement program addressed to them, which was developed to reduce the impairment of emotion regulation. It consists of a 16-week individual therapeutic treatment. Its effectiveness was confirmed by a pilot study with 20 participants with autism spectrum disorders (12-17 years old). The study confirmed that the program resulted in significant improvement in emotion regulation defects [33]. In turn, a meta-analysis conducted by Iwakabe et al. showed that affect-focused skill training brings measurable improvement in emotional regulation. On average, the effect of these methods was large ($g > 0.8$). However, therapists must remember that when assessing affect, the cultural background of patients and how it conditions the expression of emotions should be taken into account [34]. Another beneficial category of therapeutic techniques is mindfulness-based treatment, which focuses on difficulties directly in the area of ER. They include deepening awareness of emotions, psychoeducation about them, and practical use of these skills in group trainings, including patients with ASD and sometimes also their caregivers. These interventions were conducted in accordance with the cognitive behavioral therapy (CBT) approach [35]. The pilot study by Kuroda et al. confirms the effectiveness of CBT in reducing emotional dysregulation in patients with ASD. During the study, the research group underwent an 8-week program of cognitive behavioral therapy sessions. The CBT group showed significantly greater improvement in emotion orientation and alexithymia. However, it should be noted that the study was conducted on a small sample size (29 participants) [36]. A treatment model utilizing transcranial direct current stimulation (tDCS) has also been investigated for its effects on emotion regulation (ER), theory of mind, and behavioral functioning. In a study by Zemestani et al., 32 children aged 7–12 years with a diagnosis of ASD were randomly assigned to either an active stimulation group or a sham (placebo) group. Significant improvements across all measured domains were observed in the active stimulation group at the end of the intervention, and these gains were maintained at a one-month follow-up [37].

When designing interventions for individuals with ASD—particularly those aimed at improving emotional regulation—physical activity should also be considered. In a study conducted by Tse et al., 27 children with ASD (aged 8–12 years) were randomly assigned to either a jogging intervention group ($n = 15$) or a control group ($n = 12$). The intervention lasted 12 weeks, during which parents completed the Emotion Regulation Checklist before and after the program. Children in the jogging group demonstrated significant improvements in emotional regulation and a reduction in behavioral problems [38].

Emerging evidence also suggests that, in the future, computer and video games may support emotional recognition and interpretation in children with developmental disorders, including ASD. However, current clinical evidence remains insufficient to support the widespread use of such interventions [39].

CONCLUSIONS

A meta-analysis of all the above sources undoubtedly confirms that the problem with emotional regulation is significant for the population

of people with ASD. Throughout their entire lives, even in early childhood, they experience difficulties related to it. Therefore, it should undoubtedly influence on the treatment and therapy plan for patients on the autism spectrum. Neglecting ER problems can have negative effects and be associated with the occurrence of a number of co-occurring mental disorders. Both individual and group therapies are used here. Further clinical research is necessary to expand the range of available interactions that can be proposed to patients and their families. Currently available studies of therapeutic methods give promising results, but have certain limitations, such as small research groups. It is worth it for researchers to attempt their replication in larger samples in the future, so as to verify the hypotheses and allow clinicians to plan therapies for patients with ASD taking into account work with emotional dysregulation as one of the key factors.

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