

Emotion Regulation in individuals on the Autism Spectrum

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Abstract

There is mounting evidence that individuals on the autism spectrum have difficulties regulating their emotions, which has significant negative impacts on their daily functioning, mental health, and well-being. However, the origins and underlying mechanisms of emotion regulation difficulties in autism remain under-researched and poorly understood. In this chapter, we aim to synthesize existing knowledge about emotion regulation in autism within the theoretical framework of the extended process model, which postulates different stages involved in emotion regulation (i.e., emotion identification, strategy selection, implementation, and monitoring). This will allow us to consolidate the current emotion regulation in autism literature as well as help to identify future steps for research that will influence the formulation of future interventions.

1 Autism Spectrum Disorder

Autism spectrum disorder (ASD) is a lifelong neurodevelopmental condition characterized by tremendous variability with respect to specific symptom presentation, severity, and course across the lifespan. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013), people on the autism spectrum often experience social and communication challenges, difficulties with developing and maintaining relationships, show restricted and repetitive patterns of behaviors and interests, and are hyper- or hypo-reactive to sensory stimuli. In addition to heterogeneity in the core diagnostic symptoms, individuals on the spectrum vary widely in terms of cognitive and adaptive functioning, academic and employment outcomes, as well as support requirements (e.g., Hedley et al., 2017). The reported prevalence of ASD has increased over time, with recent data indicating that an average of 1 in every 44 (2.3%) 8-year-old children in the United States have ASD (Maenner et al., 2021). While no definite cause of ASD has been identified, both genetic and environmental factors have been implicated in ASD etiology (Muhle et al., 2018).

It is not uncommon for people on the spectrum to be diagnosed with co-occurring mental illnesses such as anxiety and depression. The increased occurrence of mental health issues in individuals on the spectrum has been attributed to emotion regulation (ER) difficulties often observed in this population (Cai et al., 2018). This hypothesis has been further supported by recent empirical evidence demonstrating that ER is a transdiagnostic process that underlies poor mental health outcomes across various clinical and normative samples (Cai et al., 2021).

Although ER is not a core feature of ASD, different aspects of the autism phenotype are associated with ER difficulties (Berkovits et al., 2017), with restricted and repetitive behaviors, interests and activities domain showing the strongest links (Samson et al., 2014). Due to the

congruous finding of ER problems across the lifespan, researchers have gone as far as to suggest that poor ER may be inherent in people on the spectrum (Mazefsky & White, 2014).

2 Emotion regulation difficulties in ASD

Adaptive or skillful ER requires implicit and explicit knowledge about ER, for example, knowing which strategy is more efficacious and appropriate in relation to a specific context, understanding the type and intensity of an emotion or own resources available, as well as high flexibility. We can imagine that for individuals with ASD who experience socio-emotional and cognitive impairments and sensory sensitivities, potentially leading to increased negative emotions and high irritability, ER becomes a challenging task. Although emotional reactivity varies in people on the spectrum, a recent systematic review of temperament research in ASD found that children and adolescents with ASD have higher negative affectivity than those typically developing (Chetcuti et al., 2021). Studies on the relationship between physiological arousal and ER showed no group differences between people with and without ASD. Given that most studies had small samples, the evidence for emotional reactivity differences between those with and without ASD is currently inconclusive.

Nevertheless, there is evidence that individuals on the spectrum differ from those without in the ER profile. For example, young children on the spectrum tend to have poorer ER abilities and use simpler and less effective ER strategies such as venting during times of distress than typically developing children (Cibralic et al., 2019). Similarly, adults tend to report using more ER strategies traditionally considered maladaptive, such as expressive suppression, and less frequently strategies commonly considered adaptive, such as cognitive reappraisal (Samson et al., 2012, 2015abc).

In the following sections, we aim to link the existing autism literature to the extended model of ER (Gross, 2015; see chapter XX of this handbook), which postulates four phases of ER (identification, selection, implementation, and monitoring), to identify points in the ER process where issues may arise for those on the spectrum. We hope that this novel lens of reviewing the literature will allow us to better characterize ER in ASD and highlight gaps in existing research.

Identification stage

Some of the ER difficulties observed in people with ASD may be caused by breakdowns in the identification stage of the ER cycle. The first step in this stage is detecting one's own emotions. One way of researching people's ability to detect their own emotions is through alexithymia, i.e., people's difficulties with identifying, differentiating, and describing emotions (Taylor & Bagby, 2012). Researchers have suggested that alexithymia causes the emotional impairments observed in ASD and reduces people's ability to regulate difficult emotions (Bird & Cook, 2013). Indeed, a recent empirical study found a moderate association between alexithymia and ER in ASD (Gormley et al., 2022). However, most alexithymia studies in ASD have used the Toronto Alexithymia Scale (Cai et al., 2018), which has several conceptual and psychometric limitations (e.g., Lane et al., 1997). Although a much higher proportion of people with ASD have alexithymia than individuals without ASD (Kinnaird et al., 2019), it is worth noting that alexithymia is not universal in ASD, which suggests that other impairments within other ER processes may lead to ER difficulties.

Difficulties with ER in people with ASD may also arise at later processes of the identification stage. Our beliefs about emotions and the malleability of emotions impact ER

(Ford & Gross, 2019). People predominantly aim to down-regulate negative emotions and are more willing to accept positive emotions because people tend to place a positive value on pleasant emotions and believe positive emotions are better than negative ones. However, a higher proportion of people with ASD down-regulates the intensity of positive emotions compared with those without ASD (Cai et al., 2020), which suggests that positive emotions may be valued negatively, perhaps because some individuals with ASD find strong positive emotions too arousing and unpleasant.

Moreover, Gross (2015) suggested that one way that ER difficulties may occur at the identification stage is via psychological inertia - the tendency to continue acting as one has previously. Interestingly, people with ASD have begun to use the term “autistic inertia” to describe their difficulty in acting on their intentions, with potential causes being motor difficulties, poor mental health, and executive functioning impairments (Buckle et al., 2021). The executive functioning impairments coupled with high levels of insistence on sameness observed in people with ASD are likely to lead them to being stuck in psychological inertia and not activating goals to regulate emotions.

Selection stage

Once a person sets the goal to alter their current emotional state, they must first access their mental representation of ER strategies. Based on the developmental stage and previous experiences, one may have a more limited or broader mental representation. Research has shown that the ER strategy repertoire broadens from childhood to adolescence and adulthood, beginning with behavioral strategies to increasingly include cognitive strategies such as cognitive reappraisal (Riediger & Bellintier, 2022). The evidence that children with ASD employ less

sophisticated ER strategies than typically developing peers indicates a delay in ER development (Nuske et al., 2017). Similarly, a systematic review concluded individuals on the spectrum might have a different repertoire of ER strategies to choose from, including more maladaptive ones (Cibralic et al., 2019). Preliminary evidence indicates no difference between those with and without ASD in the number of strategies used for every regulation moment (Cai et al., 2020). Hence, it may not be the number of strategies that is the issue in ASD but rather the types of strategies selected.

After the representation of strategies is brought to mind, a person needs to evaluate them in relation to various contextual factors (e.g., Sheppes et al., 2011). A combination of high anxiety and executive functioning problems in many people with ASD may lead to reduced cognitive resources, which may be one of the reasons why individuals more frequently choose less cognitive taxing ER strategies such as avoidance or distraction. We also know that at high intensity levels, cognitive reappraisal is not as effective (Sheppes et al., 2011). Indeed, several studies have shown that people on the spectrum use cognitive reappraisal less frequently than those without ASD (Samson et al., 2015ab).

The adaptive value of specific strategies is often characterized based on their long-term effects. However, whether the appropriateness and efficacy of strategies may be the same across people with and without ASD is an open question. For instance, although avoidance is generally thought to be a maladaptive ER strategy, there is initial evidence to indicate it may not be maladaptive for children on the spectrum (Rieffe et al., 2014). ER strategies within the situation selection category (e.g., avoidance) are particularly effective for individuals who have difficulty using other types of strategies (Webb et al., 2017). Another example is restrictive and repetitive behaviors, particularly insistence on sameness subdomain. Although such behaviors are a

diagnostic criterion for ASD, they are common in most typically developing young children because they serve as strategies to manage fears and anxiety (Evans et al., 1997) and have been linked with poor self-regulation. However, adolescents and adults on the spectrum may also use repetitive behaviors to regulate their emotions (Samson et al., 2015b). We suggest that these strategies may be essential and potentially adaptive for people on the spectrum, especially if other, more cognitively taxing strategies are less available.

Implementation stage

In addition to difficulties in the identification and selection stages proposed above, the use of fewer adaptive ER strategies by people on the spectrum may be due to problems with implementing strategies. However, given the paucity of research on ER tactics in both general and autism populations, it is not yet possible to determine if people on the spectrum have difficulties with the implementation stage. We know that individuals use less cognitive reappraisal spontaneously, but even after only a brief introduction with practice opportunities, they are able to significantly increase the use of cognitive reappraisal in the laboratory (Samson et al., 2015a), suggesting that intervention programs targeting the selection and implementation of adaptive strategies may be beneficial for individuals on the spectrum.

Interestingly, some studies suggest that individuals on the spectrum may implement cognitive reappraisal differently (possibly using different tactics). Richey et al. (2015) investigated the neural correlates of instructed cognitive reappraisal. While they did not find differences between ASD and typically developing groups in subjective ratings after implementing reappraisal, suggesting that individuals with ASD can learn to implement reappraisal, the authors found differences in brain correlates during regulation, including a

blunted dorsolateral prefrontal cortex activation in the ASD group. This suggests that autistic individuals may achieve effective ER (for example, through extrinsic ER or after-intervention programs), despite using alternative functional brain mechanisms. Furthermore, Pitskel et al. (2014) demonstrated decreased functional connectivity between the prefrontal cortex and the amygdala, which corroborates with findings of reduced structural prefrontal-amygdala connectivity linked to difficulties with ER in individuals with ASD (Samson et al., 2016).

Monitoring stage

One needs to adequately monitor ER efficacy to maintain, change, or stop regulation efforts (Gross, 2015). We propose two mechanisms through which individuals with ASD may experience difficulties with monitoring: alexithymia and psychological inflexibility/rigidity. The monitoring stage requires people to determine the efficacy of their chosen ER strategies by gauging changes in their emotions. For people with ASD who have emotional awareness difficulties, it would be difficult to identify subtle changes in their emotions. In addition, researchers have speculated that psychological inflexibility resulting from poor executive functioning, rigidity, and insistence on sameness may play a role in ER difficulties in autism (Cai et al., 2018; Costescu et al., 2016). We hypothesize that this may strongly impact the monitoring stage of ER.

3 Future Directions

The literature on ER in ASD is nascent; therefore, we turn to some of the open questions that remain to be fully resolved. First, although ER difficulties in ASD and associated adverse outcomes are well researched and known, our summary above demonstrates that more work is

needed to pinpoint the stages of the ER process that may play a role in the ER difficulties observed in those on the spectrum. Therefore, it is crucial and timely to disentangle the ER difficulties that emerge from breakdowns in early vs. late stages of the ER cycle in ASD, identify mechanisms that impact one or more stages of the ER process, as well as understand how difficulties in early stages affect later stages. For instance, alexithymia may not only impact the selection of ER strategies (early stage of ER process) but also the monitoring of strategies (late stage). More sophisticated paradigms may be required to achieve this goal. Gaining these insights may help to optimize individualized interventions for people with ASD, i.e., target a specific stage of ER process or mechanism.

Second, as mentioned earlier in this chapter, specific strategies traditionally seen as maladaptive may be useful for autistic individuals, particularly in the context of lower accessibility to other strategies, at least in the short term. Future studies may want to examine in more detail to what extent and under which circumstances strategies such as avoidance, certain motor stereotypies (pacing, stimming, body rocking, etc.), as well as insistence on sameness (such as keeping a routine), may be beneficial for individuals with ASD.

Third, in the context of potentially limited self-regulation skills, low adaptive functioning, and oftentimes dependence on life-long assistance, co-regulation of emotions becomes key (Nozaki & Mikolajzak, 2019). However, current literature offers limited insight into the extent to which individuals with ASD can benefit from extrinsic ER – an external regulator’s attempt to modulate emotions in the autistic person. Surprisingly, only a few studies have explicitly examined social support seeking, caregiver co-regulation of emotions, and efficacy of extrinsic ER in individuals with ASD (e.g., Hirschler-Guttenberg et al., 2015; Samson et al., 2015b). Given that individuals with ASD have difficulties reading social cues, we can

hypothesize that extrinsic ER may not be effective or beneficial when the autistic individual is not adequately interpreting the regulator's attempts. Future contributions should, therefore, not only attempt to conceptualize extrinsic ER in ASD within the framework of the extended model of ER (see Nozaki & Mikolajzak, 2019), but also to further determine to which extent individuals with ASD are able to benefit from which type of extrinsic ER strategies, as well as to disentangle in which stages of the extrinsic ER process difficulties may emerge. Such studies may provide important insights into the design of efficacious intervention programs (see Cai et al., 2022 for a review on ER interventions in ASD).

4 Conclusion

In recent years, our knowledge about the importance of ER for a range of outcomes in ASD has increased significantly, bringing to the fore the importance of developing interventions that target ER difficulties. Given the far-reaching impact of ER, effective interventions and supports can ultimately improve the quality of life of people on the spectrum. Nevertheless, given that a mechanistic understanding of ER is critical for developing effective and individually tailored treatment options, it is crucial to continue to study ER to transition from group-based supports to providing more optimized individual interventions. More specifically, it is essential to determine which phases of self and extrinsic ER should ideally be focused on by considering individual differences and the high variability in autistic symptoms, emotional awareness, reactivity, and regulation.

References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, TX: American Psychiatric Publishing.
- Berkovits, L., Eisenhower, A., & Blacher, J. (2017). Emotion Regulation in Young Children with Autism Spectrum Disorders. *Journal of Autism and Developmental Disorders*, 47(1), 68-79. <https://doi.org/10.1007/s10803-016-2922-2>
- Bird, G., & Cook, R. (2013). Mixed emotions: The contribution of alexithymia to the emotional symptoms of autism. *Translational Psychiatry*, 3(7), e285. <https://doi.org/10.1038/tp.2013.61>
- Buckle, K. L., Leadbitter, K., Poliakoff, E., & Gowen, E. (2021). “No Way Out Except From External Intervention”: First-Hand Accounts of Autistic Inertia. *Frontiers in Psychology*, 12, 631596. <https://doi.org/10.3389/fpsyg.2021.631596>
- Cai, R. Y., Chetcuti, L., Frazier, T. W., Hardan, A. Y., Samson, A. C., Whitehouse, A. J. O., Alvares, G., & Uljarević, M. (2022). *A systematic review of emotion regulation interventions in autism*. [Manuscript in preparation]. Autism Spectrum Australia.
- Cai, R. Y., Hardan, A. Y., Phillips, J. M., Frazier, T. W., & Uljarević, M. (2021). Brief Report: Emotion Regulation Influences on Internalizing and Externalizing Symptoms Across the Normative-Clinical Continuum. *Frontiers in Psychiatry*, 12, 693570. <https://doi.org/10.3389/fpsyg.2021.693570>
- Cai, R. Y., Richdale, A. L., Uljarević, M., Dissanayake, C., & Samson, A. C. (2018). Emotion regulation in autism spectrum disorder: Where we are and where we need to go. *Autism Research*, 11(7), 962-978. <https://doi.org/10.1002/aur.1968>

- Cai, R. Y., Richdale, A. L., Dissanayake, C., & Uljarević, M. (2020). How Does Emotion Regulation Strategy Use and Psychological Wellbeing Predict Mood in Adults With and Without Autism Spectrum Disorder? A Naturalistic Assessment. *Journal of Autism and Developmental Disorders*, 50(5), 1786-1799. <https://doi.org/10.1007/s10803-019-03934-0>
- Chetcuti, L., Uljarević, M., Ellis-Davies, K., Hardan, A. Y., Whitehouse, A. J. O., Hedley, D., Putnam, S., Hudry, K., & Prior, M. R. (2021). Temperament in individuals with Autism Spectrum Disorder: A systematic review. *Clinical Psychology Review*, 85, 101984. <https://doi.org/10.1016/j.cpr.2021.101984>
- Cibralic, S., Kohlhoff, J., Wallace, N., McMahon, C., & Eapen, V. (2019). A systematic review of emotion regulation in children with Autism Spectrum Disorder. *Research in Autism Spectrum Disorders*, 68. <https://doi.org/10.1016/j.rasd.2019.101422>
- Costescu, C. A., Vanderborght, B., & David, D. O. (2016). Beliefs, emotions, and behaviors – Differences between children with ASD and TD children. A robot-enhanced task. *Journal of Evidence-Based Psychotherapies*, 16(2), 221–237.
- Evans, D. W., Leckman, J. F., Carter, A., Reznick, J. S., Henshaw, D., King, R. A., & Pauls, D. (1997). Ritual, habit and perfectionism: the prevalence and development of compulsive-like behavior in normal young children. *Child Development*, 68(1), 58-68. <https://doi.org/10.2307/1131925>
- Ford, B. Q., & Gross, J. J. (2019). Why Beliefs About Emotion Matter: An Emotion-Regulation Perspective. *Current Directions in Psychological Science*, 28(1), 74–81. <https://doi.org/10.1177/0963721418806697>

- Gormley, E., Ryan, C., & McCusker, C. (2022). Alexithymia is Associated with Emotion Dysregulation in Young People with Autism Spectrum Disorder. *Journal of Developmental and Physical Disabilities*, 34, 171-186. <https://doi.org/10.1007/s10882-021-09795-9>
- Gross, J. J. (2015). Emotion Regulation: Current Status and Future Prospects. *An International Journal for the Advancement of Psychological Theory*, 26(1), 1-26. <https://doi.org/10.1080/1047840X.2014.940781>
- Hedley, D., Uljarević, M., & Hedley, D. F. E. (2017). Employment and living with autism: Personal, social, and economic impact. In S. Halder & L. C. Assaf (Eds.), *Inclusion, disability and culture: An ethnographic perspective traversing abilities and challenges* (pp. 295-311). Cham, Switzerland: Springer International Publishing.
- Hirschler-Guttenberg, Y., Feldman, R., Ostfeld-Etzion, S., Laor, N., & Golan, O. (2015). Self- and co-regulation of anger and fear in preschoolers with autism spectrum disorders: The role of maternal parenting style and temperament. *Journal of Autism and Developmental Disorders*, 45(9), 3004-3014. <https://doi.org/10.1007/s10803-015-2464-z>
- Kinnaird, E., Stewart, C., & Tchanturia, K. (2019). Investigating alexithymia in autism: A systematic review and meta-analysis. *European Psychiatry*, 55, 80-89. <https://doi.org/10.1016/j.eurpsy.2018.09.004>
- Lane, R. D., Ahern, G. L., Schwartz, G. E., & Kaszniak, A. W. (1997). Is alexithymia the emotional equivalent of blindsight? *Biological Psychiatry*, 42(9), 834-844. [https://doi.org/10.1016/s0006-3223\(97\)00050-4](https://doi.org/10.1016/s0006-3223(97)00050-4)
- Maenner, M. J., Shaw, K. A., Bakian, A. V., Bilder, D. A., Durkin, M. S., Esler, A., Furnier, S. M., Hallas, L., Hall-Lande, J., Hudson, A., Hughes, M. M., Patrick, M., Pierce, K., Poynter, J. N., Salinas, A., Shenouda, J., Vehorn, A., Warren, Z., Constantino, J. N., ...

- Cogswell, M. E. (2021). Prevalence and Characteristics of Autism Spectrum Disorder Among Children Aged 8 Years — Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2018. *MMWR Surveillance Summaries*, 70(11), 1-16. <https://doi.org/10.15585/mmwr.ss7011a1>
- Mazefsky, C.A., & White, S.W. (2014). Emotion regulation: Concepts and practice in autism spectrum disorder. *Child and Adolescent Psychiatric Clinics of North America*, 23(1), 15–24. <https://doi.org/10.1016/j.chc.2013.07.002>
- Muhle, R. A., Reed, H. E., Stratigos, K. A., & Veenstra-VanderWeele, J. (2018). The Emerging Clinical Neuroscience of Autism Spectrum Disorder: A Review. *JAMA Psychiatry*, 75(5), 514-523. <https://doi.org/10.1001/jamapsychiatry.2017.4685>
- Nozaki, Y., & Mikolajczak, M. (2020). Extrinsic emotion regulation. *Emotion*, 20(1), 10-15. <https://doi.org/10.1037/emo0000636>
- Nuske, H. J., Hedley, D., Woollacott, A., Thomson, P., Macari, S., & Dissanayake, C. (2017). Developmental delays in emotion regulation strategies in preschoolers with autism. *Autism Research*, 10(11), 1808-1822. <https://doi.org/10.1002/aur.1827>
- Richey, J. A., Damiano, C. R., Sabatino, A., Rittenberg, A., Petty, C., Bizzell, J., Voyvodic, J., Heller, A. S., Coffman, M. C., Smoski, M., Davidson, R. J., & Dichter, G. S. (2015). Neural mechanisms of emotion regulation in autism spectrum disorder. *Journal of autism and developmental disorders*, 45(11), 3409-3423. <https://doi.org/10.1007/s10803-015-2359-z>
- Riediger, M. & Bellintier, J. (2022). Emotion regulation across the lifespan. In D. Dukes, A. C. Samson, & E. Walle (Eds.), *The Oxford Handbook of emotional development* (pp. 93-109). Oxford, United Kingdom: Oxford University Press.

- Rieffe, C., De Bruine, M., De Rooij, M., & Stockmann, L. (2014). Approach and avoidant emotion regulation prevent depressive symptoms in children with an Autism Spectrum Disorder. *International Journal of Developmental Neuroscience*, 39, 37-43.
<https://doi.org/10.1016/j.ijdevneu.2014.06.003>
- Pitskel, N. B., Bolling, D. Z., Kaiser, M. D., Pelphrey, K. A., & Crowley, M. J. (2014). Neural systems for cognitive reappraisal in children and adolescents with autism spectrum disorder. *Developmental cognitive neuroscience*, 10, 117-128
<https://doi.org/10.1016/j.dcn.2014.08.007>
- Samson, A. C., Dougherty, R. F., Lee, I. A., Phillips, J. M., Gross, J. J., & Hardan, A. Y. (2016). White matter structure in the uncinate fasciculus: Implications for socio-affective deficits in autism spectrum disorder. *Psychiatry Research: Neuroimaging*, 255, 66–74.
<http://dx.doi.org/10.1016/j.psychresns.2016.08.004>
- Samson, A. C., Hardan, A. Y., Podell, R. W., Phillips, J. M., & Gross, J. J. (2015a). Emotion regulation in children and adolescents with Autism Spectrum Disorder. *Autism Research*, 8(1), 9-18. <https://doi.org/10.1002/aur.1387>
- Samson, A. C., Phillips, J. M., Parker, K. J., Shah, S., Gross, J. J., & Hardan, A. Y. (2014). Emotion dysregulation and the core features of autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 44(7), 1766–1772. <https://doi.org/10.1007/s10803-013-2022-5>
- Samson, A. C., Wells, W. M., Phillips, J. M., Hardan, A. Y., & Gross, J. J. (2015b). Emotion regulation in Autism Spectrum Disorder: Evidence from parent interviews and children's daily diaries. *Journal of Child Psychology and Psychiatry*, 56(8), 908-913.
<https://doi.org/10.1111/jcpp.12370>

Sheppes, G., Scheibe, S., Suri, G., & Gross, J. J. (2011). Emotion regulation choice.

Psychological Science, 22(11), 1391–1396. <https://doi.org/10.1177/0956797611418350>

Taylor, G. J., & Bagby, R. M. (2012). The alexithymia personality dimension. In T. A. Widiger

(Ed.), *The Oxford handbook of personality disorders* (pp. 648–673). Oxford University

Press. <https://doi.org/10.1093/oxfordhb/9780199735013.013.0030>

Webb, T. L., Lindquist, K. A., Jones, K., Avishai, A., & Sheeran, P. (2018). Situation selection is

a particularly effective emotion regulation strategy for people who need help regulating

their emotions. *Cognition and Emotion*, 32(2), 231-248.

<https://doi.org/10.1080/02699931.2017.1295922>