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Eye Movement Desensitization and Reprocessing (EMDR) Therapy in Children and Adults with Autism

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Definition

Eye movement desensitization and reprocessing (EMDR) therapy is a first-choice psychological treatment for posttraumatic stress disorder (PTSD) in the general population (World Health Organization 2013; ISTSS 2019). Although there is growing evidence that the scope of EMDR therapy is broader than treatment of full blown PTSD, little is known about the feasibility and potential effectiveness of EMDR in children and adults with autism spectrum disorder (ASD) who suffer from the consequences of exposure to adverse events and trauma. There are indications that these consequences often are overlooked and misinterpreted as autistic features and therefore remain untreated. This entry provides an overview of the current knowledge about the feasibility and effectiveness of EMDR therapy in individuals with ASD and trauma-related symptoms and its clinical and scientific implications.

EMDR therapy is a protocolized treatment, aimed to resolve symptoms resulting from disturbing and unprocessed life experiences. EMDR therapy is an evidence-based treatment for PTSD and may be supportive in the treatment of a wide variety of other mental health problems like anxiety disorders, depressive disorders, and obsessive-compulsive disorders (Shapiro 2018; Valiente-Gómez et al. 2017). EMDR therapy starts with history taking and a case conceptualization. Therapy continues with a short introduction about how EMDR therapy works, shortly after which the client focusses on the traumatic memory. The therapist then asks the client to bring up the memory and to focus on the most distressing image, eliciting the dysfunctional negative cognition (NC) of oneself in relation to the image, as well as the accompanying emotions and the body disturbance that go along with it. Next,

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the therapist moves his or her fingers back and forth in front of the client's eyes as fast as the client can follow. Repeatedly, the client is asked to report about emotional, cognitive, somatic, and/or imagistic experiences that arise. A new set of eye movements follows, and this procedure is repeated until the disturbance related to the memory reaches a SUD (Subjective Unit of Disturbances scale) of zero out of ten and an adaptive and positive statement about oneself (PC, Positive Cognition) is rated as fully believable on a VoC (Validity of Cognition) scale. The end of the session is dedicated to closing down the session positively and preparing the client for the interim in between sessions. A core feature of the procedure is carrying out a sufficient demanding bilateral working-memory-task which is accomplished by the rapid eye movements (De Jongh et al. 2013).

Historical Background

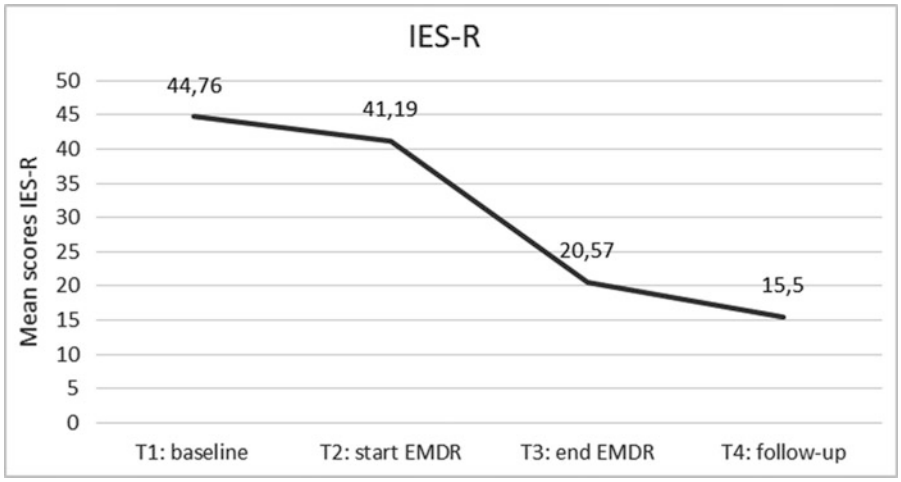
Children and adults with ASD are at *elevated risk* of experiencing a history of adverse events and revictimization (Hoover 2015; Kildahl et al. 2019). It has been argued that exposure to adverse events inhibits the ability to detect violations and exacerbates already impaired emotion regulation problems in youth with ASD (Kerns et al. 2015). These factors may negatively influence the ability to cope with future stressors and elevate the risk of revictimization. PTSD in children and adolescents with ASD co-occurs at a similar or greater rate compared to general population estimates (Rumball 2019).

Individuals with ASD are known to have specific difficulties in resolving unprocessed life experiences, making them *susceptible to psychosocial consequences of exposure* to adverse events (e.g., Roberts et al. 2015). ASD can be characterized as a different way of sense-making and as a problem with self-regulation, which is reflected in problems in social communication and interaction and restricted and repetitive patterns of behavior or interests. Adverse events that are considered to be mildly annoying for individuals without ASD may be perceived as distressing or even traumatic by individuals with ASD and vice versa (Taylor and Gotham 2016). Wood and Gadow (2010) hypothesized that ASD-related sensory hyperreactivity to daily stimuli, social confusion, incomprehension, and rejection by others may lead to clinically significant anxiety, which affects resilience to cope with stressors.

Several authors reported a risk of *overlooking* a history of exposure to adverse events and symptoms of PTSD in persons with ASD. There may be several reasons for this phenomenon. First, the different sense-making may prevent them from recognizing risky circumstances and communicating about their experiences (Kerns et al. 2015). The risk of overlooking is even stronger in case of persons with ASD and an intellectual disability (Kildahl et al. 2019). Second, symptoms attributed to ASD might in fact be stress reactions to adverse events or trauma, a phenomenon termed *diagnostic overshadowing*. For example, hyperarousal and numbing (symptoms of PTSD) overlap with ASD related hyper- and hypo-reactivity to sensory stimuli. Feelings of detachment of others – a symptom of PTSD – partly overlap with deficits in social-emotional reciprocity. A reduced ability to mentalize and recognize emotions is seen in both people with PTSD and in people with ASD. Also, there is an overlap between the ASD-related symptoms of perseveration and rumination and the criterion *negative cognitions and mood* due to PTSD (*DSM-5* 2013). Especially people with severe PTSD symptoms not fulfilling PTSD *DSM-5* criteria (e.g., because they do not meet *DSM-5* criterion A for PTSD) are at risk to be excluded for trauma treatment. Hence, both trauma and trauma-related symptoms can be overlooked or overshadowed by autistic features and therefore remain untreated.

Current Knowledge

Little is known about the feasibility and potential effectiveness of EMDR therapy in individuals with ASD and trauma-related symptoms. This may partly be caused by the problem of overlooking and overshadowing as mentioned above. Another impeding factor may be that individuals



Eye Movement Desensitization and Reprocessing (EMDR) Therapy in Children and Adults with Autism, Fig. 1 Mean scores IES-R at four moments in time

with ASD are often excluded from participating in research (Spinazzola et al. 2005). This entry gives a short overview of what is known about EMDR in autistic children and adults with and without intellectual disabilities.

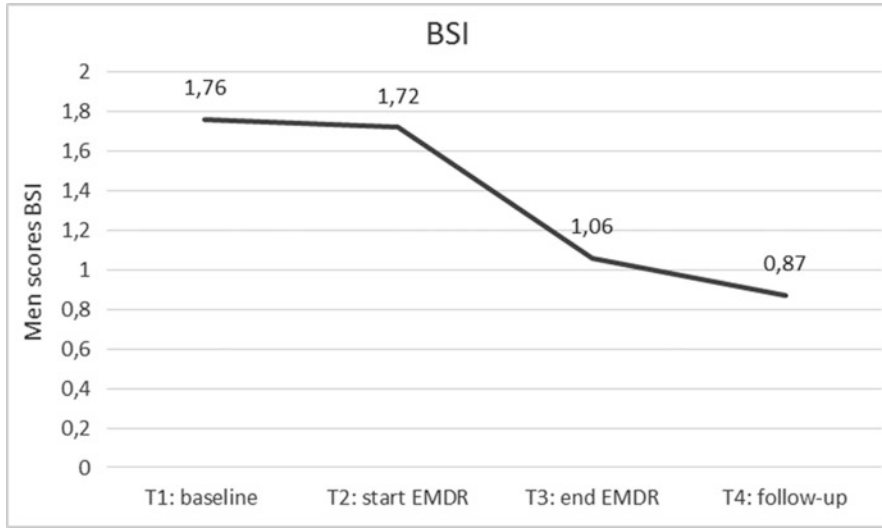
EMDR Therapy in Children with ASD

Preliminary findings from a few case reports suggest EMDR therapy for PTSD to be feasible and potentially effective for children with ASD (e.g., Ipci et al. 2017) also in case of comorbid intellectual disabilities (Mevissen et al. 2011). Controlled studies are lacking.

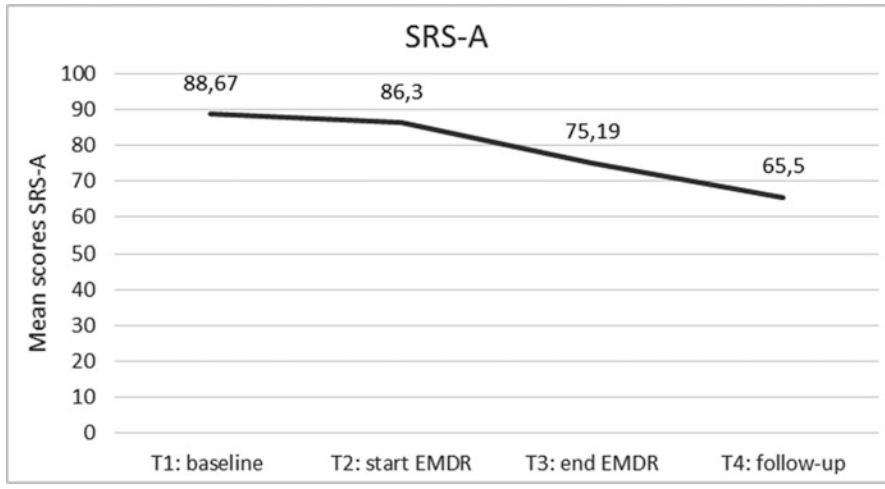
EMDR Therapy in Adults with ASD

Several case reports have been published describing the treatment of trauma with EMDR therapy in adults with ASD (Kosatka and Ona 2014) and in adults with ASD and intellectual disabilities (Barol and Seubert 2010; Mevissen et al. 2011), with promising results.

Until now, one controlled study has been published describing the feasibility and effectiveness of EMDR therapy for PTSD symptoms in adults with ASD (Lobregt-van Buuren et al. 2019). The study investigated whether EMDR is a feasible therapy for adults with ASD and a history of adverse events and whether it is associated with reductions in symptoms of PTSD, psychological distress, and autism. The study had a non-randomized add-on design consisting of three phases, in which participants were their own controls. In the first phase participants received treatment as usual (TAU) during 6–8 weeks while on the waiting list for EMDR therapy. The second phase consisted of up to 8 sessions EMDR in addition to TAU. The third phase comprised of a follow-up period with the TAU only condition. TAU consisted of the most common treatments for adults with ASD aimed at coping with ASD, psychological distress, and comorbid problems. TAU included pharmacotherapy, psychoeducation, supportive counseling, job coaching, support with housekeeping, and so-called case management. Results showed a significant reduction of symptoms of post-traumatic stress (measured with the Impact of Event Scale-Revised: d=1.16; see Fig. 1), psychological distress (measured with the Brief Symptom Inventory: d=0.93; see Fig. 2), and autistic features (Social Responsiveness Scale-Adult version: d=0.39; see Fig. 3). Moreover, the participants experienced a significantly lower level of daily life impairment related to the traumatic events following EMDR therapy (thermometer card of the Adapted Anxiety Disorders Inventory Scale for children (ADIS-C) section PTSD: d=1.81; see Fig. 4). The positive results were maintained at follow-up. The results suggest EMDR therapy added to TAU to be a



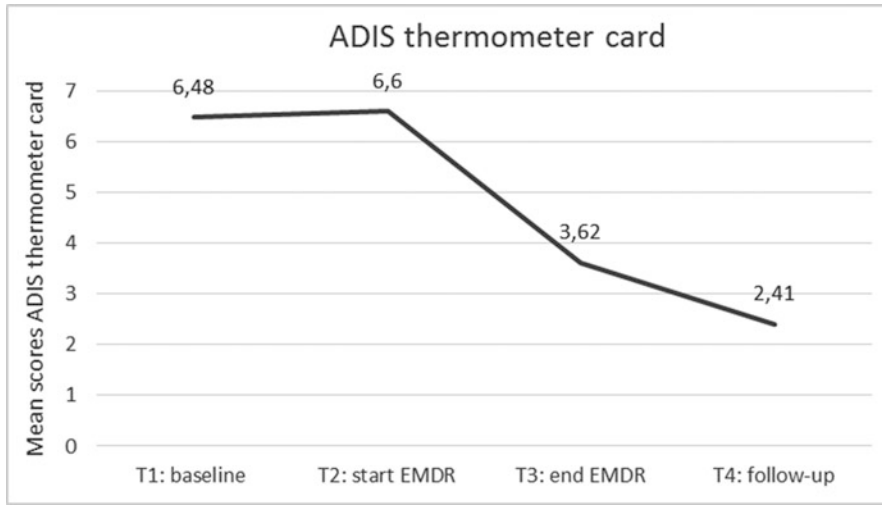
Eye Movement Desensitization and Reprocessing (EMDR) Therapy in Children and Adults with Autism, Fig. 2 Mean scores BSI at four moments in time



Eye Movement Desensitization and Reprocessing (EMDR) Therapy in Children and Adults with Autism, Fig. 3 Mean scores SRS-A at four moments in time

feasible and potentially effective treatment for individuals with ASD who suffer from the consequences of exposure to distressing events. It should be noted that the study was based upon a small sample of participants (n=21).

The significant reduction of autistic features concerning social motivation and communication following EMDR therapy, and at follow-up, albeit with a small effect size, is remarkable. A possible explanation for this finding might be that the clinical manifestation of autistic symptoms decreases when individuals with ASD experience less trauma-related stress and psychological distress, such as somatization, depression, and obsessive-compulsive symptoms. Hence, it is conceivable that trauma-related symptoms are a moderator for the severity of ASD symptoms, such that exposure to trauma and other adverse



Eye Movement Desensitization and Reprocessing (EMDR) Therapy in Children and Adults with Autism, Fig. 4 Mean scores ADIS thermometer card at four moments in time

events exacerbate autistic core features like deficits in social-emotional reciprocity (e.g., reduced sharing of interests, emotions, or affect; Wood and Gadow 2010). Another possible explanation for the observed reduction of autistic features in the study is that symptoms ascribed to phenotypic features of ASD may in fact be symptoms of PTSD, the phenomenon termed *diagnostic overshadowing*. For example, hyperarousal as a consequence of exposure to trauma may be interpreted as an autistic feature similar to hyperreactivity to sensory stimuli. Also, trauma-related avoidance of social situations can be confused with autistic features similar to problems in social communication. In other words, symptoms of PTSD can be masked by symptoms of autism, therefore symptoms of PTSD, previously seen as features of ASD, might have declined as a result of EMDR therapy.

Future Directions

Clinical Implications

The following practical recommendations based on current knowledge can be made for future clinical practice.

- Awareness of the impact of adverse events and trauma in individuals with ASD is important to prevent undertreatment.
- There is a high prevalence of being bullied in individuals with ASD (Hoover 2015; Maïano et al. 2016). Exposure to bullying is associated with severe psychiatric outcomes in adulthood. Bullying does not comply with the (i.e., A-criterion) definition of trauma in the PTSD section of *DSM-5*. When there is no formal PTSD-classification, there is an extra risk of undertreatment of the trauma-related symptoms. Disturbing memories of being bullied (e.g., social situations where participants felt excluded and intimidated) can be reprocessed with EMDR therapy.
- Trauma history and associated trauma-related symptoms should be routinely assessed in individuals with ASD who present to clinical services, taking into account the social communication impairments. What is not explicitly asked for often remains undisclosed, because of inability to spontaneously share relevant information. This issue can be addressed by making use of the concrete, visualized, and structured way in which potentially traumatic events and trauma-related symptoms are probed by the Diagnostic Interview Trauma and Stressors-Intellectual Disability (DITS-ID;

Mevissen et al. 2016, 2017, 2018, in press), such that also in children and adults with ASD unprocessed memories can be identified. The DITS-ID is the latest DSM-5 based version of the Adapted Anxiety Disorders Inventory Scale for children (ADIS-C) section PTSD. All documents (only in Dutch language) belonging to the DITS are available and can be downloaded for free. See https://www.accare.nl/childstudycenter/opleidingen/bijscholing/dits-lvb/aanvragen-documenten-dits-lvb.

- Trauma-related symptoms and PTSD in individuals with ASD can be treated successfully with EMDR therapy, taking into account aspects of their specific information processing. The EMDR procedure for children can be used, when the language of the EMDR protocol for adults is too abstract for people with ASD (Dutch version, De Roos et al. 2014). Individuals with ASD seem to need more time to become familiar with the therapist and the procedures and to fill out questionnaires. In case of obstacles when administering EMDR therapy to individuals with ASD, see the link to the following document: *Guidelines and tips for EMDR treatment for Autism Spectrum Disorders* (Special Interest Group EMDR – ASD November 2013, https://psycho-trauma.nl/wp-content/uploads/2014/01/GuidelinesEMDRASD-1.pdf). These preliminary recommendations are based on well-established and evidence-based practices for working with this population.
- Based on clinical observations, EMDR therapy seems difficult to perform in individuals with ASD who have problems with activating the traumatic memories because of fear of affects, in combination with severe problems in self- and emotional regulation, a cognitive, rigid, and extremely negative mindset. These individuals are often exposed to prolonged and repeated trauma such as childhood sexual abuse and domestic violence (complex PTSD) and/or are exposed to prolonged and repeated overload and relational mismatches between the needs of the individual and the possibilities of the environment. The iatrogenic effects of inadequate treatments due to delayed diagnostics or inadequate facilities should not be underestimated in these subgroups.
- EMDR embedded in treatment as usual seems appropriate and necessary given the comorbid psychiatric conditions and/or structural problems at home, school, or work in individuals with ASD.

Scientific Implications

Controlled trials with sufficient power to detect differences are greatly needed to confirm the present findings and to test the hypothesis that EMDR therapy is more effective than treatment as usual in reducing trauma- and stressor-related symptoms. Investigation and experimentation into other evidence-based trauma treatments like cognitive behavioral therapy with a trauma focus (CBT-T), narrative exposure therapy for individuals with ASD, and trauma-related symptoms are strongly recommended. More generally, the issue as to how PTSD and other trauma-related disorders manifest or may be masked by symptoms of ASD is an intriguing one which should be explored in further research.

See Also

- ▶ Diagnostic Overshadowing
- ▶ Emotional Regulation
- ▶ Posttraumatic Stress Disorder (PTSD)

References and Reading

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders, DSM-5* (5th ed.). Washington, DC: American Psychiatric Association.

Barol, B. I., & Seubert, A. (2010). *Journal of EMDR Practice and Research, 4*(4), 156–169. https://doi.org/10.1891/1933-3196.4.4.156.

De Jongh, A., Ernst, R., Marques, L., & Hornsveld, H. (2013). The impact of eye movements and tones on disturbing memories involving PTSD and other mental disorders. *Journal of Behavior Therapy and Experimental Psychiatry, 44*, 477–483.

De Roos, C., Beer, R., De Jongh, A., & Ten Broeke, E. (2014). EMDR-protocol voor kinderen tot 18 jaar. In E. Ten Broeke, A. De Jongh, & H. J. Oppenheim (Eds.), *Praktijkboek EMDR: Casusconceptualisatie en*

specifieke patiëntengroepen [bijlage V]. Amsterdam: Harcourt.

Hoover, D. W. (2015). The effects of psychological trauma on children with autism spectrum disorders: A research review. *Review Journal of Autism and Developmental Disorders, 2*, 287–299. https://doi.org/10.1007/s40489-015-0052-y.

International Society for Traumatic Stress Studies. (2019). Posttraumatic stress disorder prevention and treatment guidelines. Methodology and recommendations. Retrieved from: http://www.istss.org/treating-trauma/new-istss-prevention-and-treatment-guidelines.aspx

Ipci, M., Inci, S. B., Ardic, U. A., & Ercan, E. S. (2017). A case of Asperger syndrome with comorbidity of posttraumatic stress disorder and selective mutism: Significant remission with the combination of aripiprazole and eye movement desensitization and reprocessing. *Journal of Clinical Psychopharmacology, 37*(1), 109–110.

Kerns, C. M., Newschaffer, C. J., & Berkowitz, S. J. (2015). Traumatic childhood events and autism spectrum disorder. *Journal of Autism and Developmental Disorders, 45*, 3475–3486. https://doi.org/10.1007/s10803-015-2392-y.

Kildahl, A. N., Bakken, T. L., Iversen, T. E., & Helverschou, S. B. (2019). Identification of posttraumatic stress disorder in individuals with autism spectrum disorder and intellectual disability: A systematic review. *Journal of Mental Health Research in Intellectual Disabilities, 12*, 1–2. https://doi.org/10.1080/19315864.2019.1595233.

Kosatka, D., & Ona, C. (2014). Eye movement desensitization and reprocessing in a patient with Asperger's Disorder: case report. *Journal of EMDR Practice and Research, 8*(1), 13–18.

Lobregt-van Buuren, E., Sizoo, B., Mevissen, L., & De Jongh, A. (2019). Eye movement desensitization and reprocessing (EMDR) therapy as a feasible and potential effective treatment for adults with Autism Spectrum Disorder (ASD) and a history of adverse events. *Journal of Autism and Developmental Disorders, 49*(1), 51–164. https://doi.org/10.1007/s10803-018-3687-6.

Maïano, C., Normand, C. L., Salvas, M. C., Moullec, G., & Aimé, A. (2016). Prevalence of school bullying among youth with autism spectrum disorders: a systematic review and meta-analysis. *Autism Research, 9*, 601–615.

Mevissen, L., Lievegoed, R., & De Jongh, A. (2011). EMDR treatment in people with mild ID and PTSD: 4 cases. *Psychiatric Quarterly, 82*, 43–57.

Mevissen, L., Didden, R., Korzilius, H., & De Jongh, A. (2016). Assessment of PTSD in children with mild to borderline intellectual disabilities. *European Journal of Psychotraumatology, 7*, 29786. https://doi.org/10.3402/ejpt.v7.29786.

Mevissen, L., Didden, R., Korzilius, H., & De Jongh, A. (2017). Eye movement desensitisation and reprocessing therapy for posttraumatic stress disorder in a child and an adolescent with mild to borderline intellectual disability: A multiple baseline across subjects study. *Journal of applied research in intellectual disabilities, 00*, 1–8. https://doi.org/10.1111/jar.12335.

Mevissen, L., Didden, R., & De Jongh, A. (2018). *DITS-LVB Handleiding. Diagnostisch Interview Trauma en Stressoren – Licht Verstandelijke Beperking [DITS-MID Manual. Diagnostic interview trauma and stressors – Mild intellectual disability]*. Accare Child Study Center. https://www.accare.nl/childstudycenter/opleidingen/bijscholing/dits-lvb/aanvragen-documenten-dits-lvb

Mevissen, L., Didden, R., de Jongh, A., & Korzilius, H. (in press). Assessing posttraumatic stress disorder in adults with mild intellectual disabilities or borderline intellectual functioning. *Journal of Mental Health Research in Intellectual Disabilities*.

Roberts, L. A., Koenen, K. C., Lyall, K., Robinson, E. B., & Weisskopf, M. G. (2015). Association of autistic traits in adulthood with childhood abuse, interpersonal victimization and posttraumatic stress. *Child abuse & neglect, 45*, 135–142.

Rumball, F. (2019). A systematic review of the assessment and treatment of posttraumatic stress disorder in individuals with autism spectrum disorders. *Journal of Autism and Developmental Disorders, 6*, 294–324. https://doi.org/10.1007/s40489-018-0133-9.

Shapiro, F. (2018). *Eye movement desensitization and reprocessing (EMDR) therapy: Basic principles protocols, and procedures*. New York: Guilford Press.

Spinazzola, J., Blaustein, M., & Van der Kolk, B. A. (2005). Posttraumatic stress disorder treatment outcome research: the study of unrepresentative samples? *Journal of Traumatic Stress, 18*(5), 425–436.

Taylor, J. L., & Gotham, K. O. (2016). Cumulative life events, traumatic experiences, and psychiatric symptomatology in transition-aged youth with autism spectrum disorder. *Journal of Neurodevelopmental Disorders, 8*, 28. https://doi.org/10.1186/s11689-016-9160-y.

Valiente-Gómez, A., Moreno-Alcázar, A., Treen, D., Cedrón, C., Colom, F., Pérez, V., & Amann, B. L. (2017). EMDR beyond PTSD: A systematic literature review. *Frontiers in Psychology, 8*, 1668. https://doi.org/10.3389/fpsyg.2017.01668.

Wood, J. J., & Gadow, K. D. (2010). Exploring the nature and function of anxiety in youth with autism spectrum disorders. *Clinical Psychology. Science and Practice, 17*(4), 281–292.

World Health Organization. (2013). *Guidelines for the management of conditions specifically related to stress*. Geneva: WHO. Retrieved from http://www.who.int/mental_health/emergencies/stress_guidelines/en/.