Research in Autism Spectrum Disorders 53 (2018) 31–40

Contents lists available at ScienceDirect

Research in Autism Spectrum Disorders

journal homepage: www.elsevier.com/locate/rasd

Brief Report

Emotion-recognition and theory of mind in high-functioning children with ASD: Relationships with attachment security and executive functioning

C. Sivaratnam[a,*], L. Newman[b,c], N. Rinehart[a]

[a] Deakin Child Study Centre, School of Psychology, Deakin University, Burwood, Victoria, Australia
[b] Centre for Womens' Mental Health, The Royal Women's Hospital, Melbourne, Victoria, Australia
[c] Department of Psychiatry, University of Melbourne, Parkville, Victoria, Australia

ARTICLE INFO

Number of reviews completed is 2

Keywords:
Autism spectrum disorders
Emotion-recognition
Theory of mind
Attachment security
Executive functioning

ABSTRACT

This study explored the relationships that attachment security and executive functioning (EF) (working memory and inhibition) had with emotion-recognition and theory of mind (ToM) in children with high-functioning Autism Spectrum Disorder (ASD) aged between 6 and 12 years (n = 26), while controlling for cognitive ability. Group differences in attachment security were also explored in this group, compared to a typically-developing group (n = 27) matched on age and cognitive ability. Attachment security was not found to be significantly different between groups, however studies employing larger sample sizes are needed to further clarify this finding. Cognitive processes and attachment insecurity appear to relate to performance on structured behavioural measures of emotion-recognition and ToM differentially in children with high-functioning ASD and typically-developing children. Implications for the mechanisms underlying socio-emotional processes in childhood are discussed.

Executive functioning (EF) deficits are prevalent in children with ASD (Wang et al., 2017; Corbett, Constantine, Hendren, Rocke, & Ozonoff, 2009), and have been found to relate to social cognition abilities in this population, including Theory of Mind (ToM) and emotion-recognition (Torske, Nærland, Merete, Stenberg & Andreassen, 2017; Pellicano, 2010). EF is an umbrella term which refers to physical, cognitive, and emotional control and regulatory processes necessary to plan and maintain effective goal-directed behavior (Pennington & Ozonoff, 1996; Corbett et al., 2009). Dorsolateral pre-frontal cortical regions have been found to underlie EF, which include faculties of inhibition, planning, working memory, behavioral monitoring, and cognitive flexibility (Chan, Shum, Toulopoulou, & Chen, 2008; Hill, 2004; Miyake et al., 2000). Empirically-based models such as the SOCIAL model (Beauchamp & Anderson, 2010) posit that neuro-cognitive processes such as EF underlie higher-order social cognition processes. There is currently growing evidence for a positive link between social-cognition ability, commonly encompassing emotion-recognition and ToM ability, and faculties such as inhibition and working memory in cognitively-able children with ASD in early and middle childhood (Oerlemans et al., 2013; Pellicano, 2010; Pellicano, Maybery, Durkin, & Maley, 2006), independent of the influence of cognitive ability. Inhibition refers to the ability to suppress a prepotent response in favour of a novel response (Fuster, 1989), while working memory refers to the ability to process information while temporarily holding it in mind (Baddeley, 1986).

In addition to individual factors such as EF ability, theories of differential susceptibility in the TD literature posit that the environment interacts with child factors to shape socio-emotional development (Belsky & Pluess, 2009; Belsky, 2005). While findings of structural and functional cortical abnormalities in regions underlying socio-emotional functioning in ASD populations have clearly

* Corresponding author.
E-mail address: carmel.sivaratnam@deakin.edu.au (C. Sivaratnam).

https://doi.org/10.1016/j.rasd.2018.05.005
Received 8 June 2016; Received in revised form 4 May 2018; Accepted 22 May 2018
Available online 15 June 2018
1750-9467/ © 2018 Elsevier Ltd. All rights reserved.

established the neural basis of such deficits in ASD (Di Martino et al., 2009; Dalton et al., 2005), the influence of environmental factors such as attachment security in shaping socio-emotional functioning alongside neurological deficits has largely been unexplored in ASD (Sivaratnam, Newman, Tonge & Rinehart, 2015). In the context of findings that attachment security can act as a protective factor against poor mental health outcomes and adjustment in typically-developing children and those with developmental disabilities (Al-Yagon, Forte, & Avrahami, 2017), together with high rates of emotional and behavioural difficulties in children with ASD, there is a need to examine the impact of attachment security on socio-emotional functioning alongside established explanations such as EF. This study provides a starting point for these explorations by examining the relationships that attachment security and EF have with ToM and emotion-recognition in ASD.

In typically-developing (TD) children, security of attachment has been positively linked to emotion-recognition ability (e.g. Steele, Steele, & Croft, 2008), which commonly encompasses the ability to identify, label, and be aware of the emotions of oneself and others (Heerey, Keltner, & Capps, 2003; Lipton & Nowicki, 2009). Secure attachments have also been positively linked to ToM ability across childhood, where ToM is conceptualised as the ability to understand and predict the beliefs, intentions, and emotional states of oneself and others (Baron-Cohen, 1989; Baron-Cohen, Leslie, & Frith, 1985). Despite the breadth of literature linking attachment security with ToM and emotion-recognition ability in TD children, little is known about the relationship that attachment security has with emotion-recognition and ToM in children with high-functioning Autism Spectrum Disorders (ASD).

Attachment refers to the relational system that infants develop with their primary caregiver, which results from the child's experiences in interacting with the caregiver across the first year of life, and drives the formation of mental representations of the self, the caregiver, and the relationship (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969, 1982). Bowlby (1987), cited in Ainsworth, 1990), suggested that representations of attachment in middle childhood tend to shift from depending on physical proximity of the caregiver for assistance as seen in infancy and early childhood, to representations and perceptions of the emotional availability of the caregiver. Some studies have purported that children with ASD are as securely attached to their caregivers as are matched TD children in middle childhood (Bauminger, Solomon, & Rogers, 2010; Chandler & Dissanayake, 2013; Sanini, Ferreira, Souza, & Bosa, 2008). Chandler and Dissanayake (2013) found that in a sample of 21 eight-to–12 year old children with Autistic Disorder and normative cognitive functioning (Full Scale IQ $\geq$70), attachment security did not differ from TD controls. Bauminger et al. (2010) investigated attachment security, social-cognitive capacities and friendships in 44 eight-to–12 year old children with ASD with normative cognitive functioning (VIQ $\geq$ 80) and also found no significant differences in attachment security between ASD and TD children in middle childhood.

With the exception of the above studies, the majority of studies exploring attachment in ASD have focused on children under the age of 6 and have relied largely on the measurement of attachment using the Strange Situation Procedure (Ainsworth et al., 1978). These studies suggest that although children with ASD are able to form secure attachment relationships, secure attachments may be underrepresented in this group (Capps, Sigman, & Mundy, 1994; Rogers, Ozonoff, & Maslin-Cole, 1993; Rutgers, Bakermans-Kranenburg, van Ijzendoorn, & van Berckelaer-Onnes, 2004).

Both verbal and non-verbal cognitive ability have also been found to positively relate to attachment security (Rutgers et al., 2004) as well as performance on structured measures of emotion-recognition and ToM in children with ASD (Buitelaar, van der Wees, Swaab-Barneveld, & van der Gaag, 1999; Grossman, Klin, Carter, & Volkmar, 2000). Thus, controlling for individual differences in cognitive ability when exploring the relationships that EF and attachment security have with emotion-recognition and ToM in children with ASD will enable the consolidation of relationships in this group without the confounding influence of individual differences in cognitive ability.

While some existing studies have explored the relationships that attachment and EF and have with emotional factors in ASD (Oerlemans et al., 2013; Pellicano, 2010; Bauminger et al., 2010), there has been a large focus on the early childhood focus, and no studies to date have examined and compared the influence of both factors on emotion-recognition and ToM outcomes in children with high-functioning ASD while controlling for cognitive ability within the same sample and study. Thus, the aims of this study were twofold; firstly, to assess whether there were differences between levels of attachment security, avoidance and ambivalence in children with high-functioning ASD and TD children across the middle-childhood period, spanning from 6 to 12 years of age, where the two groups were matched on overall cognitive ability. Based on previous findings by Chandler and Dissanayake (2013) and Bauminger et al. (2010), it was hypothesized that the ASD and TD groups would not differ significantly on levels of attachment security, as measured by the Kerns Security Scale (Kerns, Aspelmeier, Gentzler, & Grabill, 2001), as well as on levels of attachment avoidance and ambivalence as measured by the Attachment Style Classification Questionnaire (Finzi, Har-Even, Weizman, Tyano, & Shnit, 1996).

Secondly, this study aimed to examine the relationships that attachment security and EF have with emotion-recognition and ToM ability in ASD and TD groups, while controlling for the influence of cognitive ability on these relationships. It was hypothesized that in both ASD and TD groups, attachment security would positively correlate with emotion-recognition and ToM performance, and attachment avoidance and ambivalence would correlate negatively with emotion-recognition and ToM performance, both before and after controlling for cognitive ability. It was predicted that EF (inhibition and working memory) would positively correlate with emotion-recognition and ToM performance in both groups, before and after controlling for cognitive ability.

1. Method

1.1. Participants

53 children between 6 and 12 years of age participated in this study. The ASD group comprised 26 participants (four females and

Download English Version:

https://daneshyari.com/en/article/6847885

Download Persian Version:

https://daneshyari.com/article/6847885

Daneshyari.com