

Title: Exploring the Child and Adolescent Mindfulness Measure (CAMM) in Children and Adolescents with Autism

Authors: Flora Roudbarani¹, Julia Martini¹, Jonathan Weiss¹

Introduction: There is considerable evidence that youth with autism benefit from mindfulness-based programs by improving social communication skills (Ridderinkhof et al., 2018), quality of life (De Bruin et al., 2015) and emotion regulation (Salem-Guirgis et al., 2019). Several tools have been developed to measure mindfulness, although research has mainly focused on university student populations (Feldman et al., 2007; Van Dam et al., 2010). The Child and Adolescent Mindfulness Measure (CAMM) is a 10-item self-report tool designed to assess mindfulness skills such as present-centered awareness and non-judgmental acceptance (Greco et al., 2011). The CAMM has been investigated in a non-clinical adolescent sample (Kuby et al., 2015); however, more studies are needed to establish the use of this measure in clinical and treatment-seeking child and adolescent populations. This research aims to investigate associations between CAMM scores and child- and parent-reports of child emotion regulation and mental health in a treatment-seeking sample of children and youth with autism.

Method: Data were collected from 41 children with autism (85.4% male), who were seeking treatment in a randomized controlled trial of cognitive-behavioural therapy (CBT) targeting emotion regulation. Children were 8 to 13 years of age ($M = 9.86$, $SD = 1.53$) with at least average IQ ($M = 105.2$, $SD = 16.3$, Range: 79-147). Child mindfulness was assessed via the CAMM, with good internal consistency ($\alpha = .80$). Child and parent reports of child emotion regulation (CEM; Suveg & Zeman, 2004 & ERC; Shields & Cicchetti, 1997), and of emotional and behavioural problems (BASC3; Reynolds & Kamphaus, 2015; SDQ – child and parent versions; Goodman et al., 1998), along with parent reports of child executive function difficulties (BRIEF-2; Gioia et al., 2000). Additional child information collected included: autism symptom severity (SRS-2; Constantino, 2012), academic achievement (WRAT-4; Wilkinson & Robertson, 2006), and intellectual functioning (WASI-II; Wechsler, 2011).

Results: CAMM scores were negatively related to child-reported overall dysregulation scores (CEM; $r = -.41$, $p = .01$), child-reported emotional problems (SDQ – child version; $r = -.39$, $p = .01$), and child-reported conduct problems (SDQ – child version; $r = -.33$, $p = .03$). CAMM scores were negatively related to parent-report of child peer problems (SDQ – parent version; $r = -.42$, $p = .01$) and positively correlated with parent-report of externalizing behaviour (BASC3; $r = .31$, $p = .04$). CAMM scores were not associated with child age, autism symptoms, academic achievement, intellectual functioning or executive function difficulties.

Discussion: Mindfulness is associated with less emotional dysregulation, emotional problems and conduct problems, according to child reports of their own experience. Greater child mindfulness was also associated with fewer parent reports of child peer problems, but more externalizing difficulties. This poster suggests that there is use in inquiring about the mindfulness of children with autism, via their own self-perceptions. Future research is needed to validate the CAMM with more diverse populations and explore the directionality of the relationship between mindfulness and well-being.

References/Citations:

- Constantino, J., & Gruber, C. (2012). Social responsive scale-second edition (SRS-2). *Journal of Psychoeducational Assessment, 32*(4), 365-369.
- De Bruin, E., Blom, R., Smit, F., van Steensel, F., & Bögels, S. (2015). MYmind: Mindfulness training for Youngsters with autism spectrum disorder and their parents. *Autism, 19*(8), 906-914.
- Feldman, G., Hayes, A., Kumar, S., Greeson, J., & Laurenceau, J. (2007). Mindfulness and emotion regulation: The development and initial validation of the cognitive and affective mindfulness scale-revised (CAMS-R). *Journal of Psychopathology and Behavioral Assessment, 29*(1)- 177-190.
- Gioia, G. A., Isquith, P. K., Guy, S. C., & Kenworthy, L. (2000). Behavior rating inventory of executive function. Odessa, FL: Psychological Assessment Resources.
- Goodman, R., Meltzer, H., & Bailey, V. (1998). The strengths and difficulties questionnaire: A pilot study on the validity of the self-reported version. *European Child & Adolescent Psychiatry, 7*(3), 125-130.
- Greco, L., Baer, R., & Smith, G. (2011). Assessing mindfulness in children and adolescents: Development and validation of the child and adolescent mindfulness measure (CAMM). *Psychological Assessment, 23*(3), 606-614.
- Kuby, A., McLean, N., & Allen, K. (2015). Validation of the child and adolescent mindfulness measure (CAMM) with non-clinical adolescents. *Mindfulness, 6*(6), 1448-1455.
- Reynolds, C. R., Kamphaus, R. W. (2015). *BASC-3 Behavioral and Emotional Screening System Manual*. Circle Pines, MN: Pearson.
- Ridderinkhof, A., de Bruin, E., Blom, R., & Bögels, S. (2018). Mindfulness-based program for children with autism spectrum disorder and their parents: Direct and Long-term improvements. *Mindfulness, 9*(3), 773-791.
- Salem-Guirgis, S., Albaum, C., Tablon, P., Riosa, P.B., Nicholas, D.B, Drmic, I.E., & Weiss, J.A. (2019). MYmind: a Concurrent group-based mindfulness intervention for youth with autism and their parents. *Mindfulness 10*(9), 1730-1743.
- Shields, A., & Cicchetti, D. (1997). Emotion regulation among school-aged children: The development and validation of a new criterion Q-short scale. *Developmental Psychology, 33*(6), 906-916.
- Suveg, C., & Zeman, J. (2004). Emotion regulation in children with anxiety disorders. *Journal of Clinical and Child Adolescent Psychology, 33*(4), 750-759.
- Van Dam, N., Earleywine, M., & Borders, A. (2010). Measuring mindfulness? An item response theory analysis of the mindful attention awareness scale. *Personality and Individual Differences, 49*(7), 805-810.
- Wechsler, D. (2011). Wechsler Abbreviated Scale of Intelligence—Second Edition (WASI-II). San Antonio, TX: NCS Pearson.
- Wilkinson, S., & Robertson, G. (2006). Wide range achievement test – fourth edition. Lutz, FL: Psychological Assessment Resources.
- Zeman, J., Shipman K., & Penza-Clyve, S. (2001). Development and initial validation of the children’s sadness management scale. *Journal of Nonverbal Behaviour, 25*(3), 187-205.

¹ York University, Toronto, Canada