COHERENCE OF PARENTAL REPRESENTATIONS FOLLOWING THERAPY FOR AUTISTIC CHILDREN

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A THESIS SUBMITTED TO THE FACULTY OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS

GRADUATE PROGRAM IN PSYCHOLOGY

YORK UNIVERSITY

TORONTO, ONTARIO

August, 2022

Abstract

Autistic children and youth experience high rates of mental health challenges, and links have been demonstrated between child mental health and the parent-child relationship in this population. As parents of autistic children are often actively involved in their child's treatment, it is important to consider aspects of the parent-child relationship within this context. The present study investigated changes in a component of the parent-child relationship, the coherence of parental representations, following participation in a 10-week cognitive behavioural therapy intervention designed to address autistic children's mental health challenges. Relationships were examined between baseline levels of coherence and child characteristics (i.e., autism symptoms, mental health), and associations with child treatment outcomes (i.e., mental health). Participants included 81 children (89% boys) aged 8 to 13 years and their parents (85% mothers) aged 35 to 54 years. Results revealed that baseline levels of coherence were related to children's mental health symptoms, but not autism symptoms. Although there were no significant changes in overall coherence across therapy, subscale-level improvements (i.e., concern, acceptance) emerged. Pre-intervention levels of coherence were not associated with child treatment outcomes. Changes in coherence across therapy were linked with children's post-intervention behavioural symptoms and were approaching significance for internalizing problems, but were not associated with externalizing problems. It is critical to investigate factors that shape the coherence of parents' representations of their children, as this may provide insight into potential targets for intervention. Moreover, ascertaining whether participation in therapy improves parental coherence, and consequently child treatment outcomes, can advocate for parent-involved therapy, which will ultimately benefit the well-being of autistic children.

Acknowledgements

I would like to sincerely thank my supervisor, Dr. Jonathan Weiss, for his mentorship and guidance throughout my master's degree. It has been an invaluable experience learning from you, and I greatly appreciate your unwavering support during this process. I would also like to extend my gratitude to my committee members, Dr. Robert Muller, Dr. Sarah Flicker, and Dr. Rebecca Pillai Riddell for their thoughtful feedback and insight.

Thank you to the members of the Developmental Disabilities and Mental Health Lab, and especially to Ava Pouyandeh and Alaa Ibrahim for your assistance with coding; your time and effort is greatly appreciated. I would like to thank my cohort classmates, and especially Teresa Sellitto, for their friendship throughout our graduate journey thus far. I would also like to thank the families who participated in this research.

This research was supported by a Quebec Autism Research Training Program (QART) Fellowship, a Sammy Graduate Scholarship in Autism Research, and a Meighen Wright Maternal-Child Health Graduate Scholarship.

Lastly, I would like to thank my family, friends, and husband for standing by me through all my career endeavours, and for their unconditional support and love. Without them, this achievement would not have been possible.

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Coherence of Parental Representations Following Therapy for Autistic Children

Autistic children experience high rates of mental health challenges such as internalizing problems (e.g., anxiety, depression) and externalizing problems (e.g., conduct problems, hyperactivity/inattention). A review (Rosen et al., 2018) summarized population-based prevalence rates of common mental health problems in these individuals and found high rates of anxiety (~40%; van Steensel et al., 2011), depression (0.9-29%; Leyfer et al., 2006; Stewart et al., 2006), and behaviour disorders (21-30%; Levy et al., 2010; Simonoff et al., 2008). Links have been found between child mental health and the parent-child relationship, which is the enduring bond between a parent and their child (Troll & Fingerman, 1996). For example, in the general population, the parent-child relationship is thought to have a bidirectional association with children's depressive symptoms (Allen et al., 2006), anxiety (Hudson & Rapee, 2001), and conduct problems (Booker et al., 2016). In the autism population, emotional quality of the parent-child relationship is bidirectionally linked with children's emotional and behavioural problems (Hickey et al., 2020). As well, autism severity has been shown to be related to different aspects of the parent-child relationship, such as attachment level, communication, and emotional expression (Beurkens et al., 2013; Hoffman et al., 2009).

As parents of autistic children are often actively involved in their child's treatment (van Steensel & Bögels, 2015), it is important to consider aspects of the parent-child relationship within this context. One intervention that directly targeted parent-child relationship quality demonstrated reductions in autistic children's behaviour problems and increases in their adaptability (Solomon et al., 2008). Parent-child relationship quality assessed within the context of cognitive behavioural therapy (CBT) has also been shown to be associated with child treatment outcomes. CBT works by modifying thoughts and behaviours to foster coping and

improve mental health problems (Fenn & Byrne, 2013). In a study of 6- to 12-year-old children, both parents and children received CBT for anxiety (Creswell et al., 2008). Results demonstrated that negative aspects of the parent-child relationship (maternal overinvolvement and expression of fear) were associated with less favourable child treatment outcomes. Within the autism population, parent involvement in CBT interventions that are child-focused have shown indirect improvements in aspects of the parent-child relationship, such as an increase in parents' number of positive comments about their child (Maughan & Weiss, 2017).

Parental representations, which are a component of the parent-child relationship, are the information processing rules that guide parents' interpretations of their child's feelings and behaviours (Benoit et al., 1997; Main et al., 1985). Parents' representations shape their responsiveness towards their children, which is related to positive child outcomes in the general population (Davidov & Grusec, 2006) and in the autism population (Edmunds et al., 2019). Studies have emerged to examine the role of parental representations within the context of therapy for autistic children. One study found that a four-week intervention aimed at improving parents' ability to understand their autistic child's mental states resulted in improvements in children's behavioural and emotional symptoms (Enav et al., 2019). Parental participation in their child's therapy can also indirectly influence their representations, as supported by a qualitative study that revealed improvements in the way parents saw their autistic child (e.g., saw child rather than the autism, gained an understanding of their child's motivation, saw a potential for a happy future for their child, were able to focus on their child) following music therapy (Thompson & McFerran, 2015). Few studies have explored other aspects of parental representations within the context of therapy for autistic children. Studies that have examined links between parental representations and child characteristics have demonstrated mixed

findings. One study found that parents of children with greater autism severity used fewer mental state descriptors to describe the internal states of their children (Ansari et al., 2020). Another study revealed opposing findings, demonstrating that autism severity was not associated with parents' descriptions of their children (Kirk & Sharma, 2017). Research is needed to ascertain the relationship between child characteristics such as autism symptoms and mental health problems, and parental representations in this population.

Parental representations can be evaluated for their coherence, which is the clarity, consistency, multidimensionality, and authenticity of parents' verbal narratives about their child (Main et al., 1985; Oppenheim, 2006). Coherence involves recognizing both the content of parents' narratives as well as *how* parents speak about their children, and provides an indication of parents' perceptions of their children's thoughts, feelings, and behaviours. Parents with incoherent representations may process information regarding their child in a unidimensional or distorted way, overemphasizing their child's weaknesses, being overwhelmed with concern, exhibiting difficulties in perceiving their child as separate from themselves, or providing idealized or poorly integrated descriptions of their child. On the other hand, more coherent representations are undistorted, multifaceted, and well-integrated, including strengths as well as challenging aspects of their child's characteristics. Parents with high levels of coherence tend to: a) focus their narratives on their children, b) provide elaborate and complex descriptions of their children, c) see their children as unique and separate individuals, d) are accepting of their needs and abilities, and e) display appropriate levels of concern for their children (Koren-Karie & Oppenheim, 2001; Sher-Censor et al., 2013). Studies that have characterized coherence using various measures such as the Insightfulness Assessment (Oppenheim & Koren-Karie, 2013) and the Working Model of the Child Interview (Zeanah et al., 1994) have utilized interviewing to

determine the coherence of parents' thoughts and feelings regarding their children. However, these interviews are often lengthy and require extensive coding procedures. The present study assessed parents' coherence with the Five Minute Speech Sample procedure (FMSS; Magaña et al., 1986), which has been utilized in the general population (Sher-Censor et al., 2016) and in the autism population (Sher-Censor et al., 2017) to characterize coherence. Parents are required to provide a brief description of their child using an open-ended format with minimal prompts from the interviewer. Although brief, the FMSS enables parents to express their true internal emotions, thoughts, and attitudes about their child (Gottschalk & Gleser, 1969).

In the general population, coherence has been shown to be related to various aspects of child mental health such as self-regulation (Rosenblum et al., 2002; Sher-Censor et al., 2016) and behaviour problems (Sher-Censor & Yates, 2015), while in families of autistic children, coherence is linked with parent characteristics such as maternal emotional availability (Sher-Censor et al., 2017) and maternal sensitivity (Oppenheim et al., 2012). Within the context of treatment, a relationship-based intervention demonstrated gains in parents' insightfulness (ability to talk coherently about the motives underlying child's behaviour, accept these motives, and provide a multidimensional portrayal of the child), which was related to decreased child behaviour problems (Oppenheim et al., 2004). Ascertaining whether participation in therapy improves parental coherence can promote the use of parent-involved therapy, which has been shown to benefit both children (Sofronoff et al., 2005) and parents (Ollendick et al., 2015). Further, understanding how to improve ways that parents can identify children's feelings and behaviours can empower them to support them in the treatment context.

Present Study

To our knowledge, the present study was the first to examine whether there are changes in the coherence of parents' representations following participation in a 10-week CBT intervention for autistic children's mental health problems. Three primary research questions were addressed. First, how do baseline parental coherence ratings relate to children's mental health and autism symptoms? Second, is parental involvement in therapy associated with changes in the coherence of parents' representations of their children? Lastly, is parental coherence associated with more positive child treatment outcomes (i.e., mental health)? We hypothesized that children with greater mental health challenges and autism severity would have lower baseline parental coherence ratings. Parental involvement in therapy was expected to be associated with improvements in the coherence of parents' representations. Lastly, parental coherence was hypothesized to be associated with improved child treatment outcomes.

Method

Participants

Parent and child demographics are displayed in Table 1. The sample consisted of 81 children (89% boys) aged 8 to 13 years (M = 9.60 years, SD = 1.38), and their parents (85% mothers), aged 35 to 54 years (M = 43.84 years, SD = 4.41) who were a part of one of two randomized controlled trials involving a 10-week CBT intervention for child mental health problems. Participants were recruited from community advertisements, word of mouth, autism service newsletters, and website postings. Across the two larger trials, 217 participants were screened for eligibility, and 129 participants were included. Families were excluded if parents reported child aggressive or self-injurious behaviours that were a serious safety concern, they were currently receiving other CBT or behaviour therapy, or they were currently receiving any

other intervention to address emotion regulation difficulties. 93 participants completed the intervention, and reasons for not completing the intervention included a lack of motivation, withdrawing during the waiting period, and data collection challenges. The present study included 81 parents and children with a diagnosis of autism from a healthcare practitioner in Ontario (e.g., pediatrician, psychiatrist, registered psychologist) and clinical cut-offs on either the Social Responsiveness Scale, Second Edition (SRS-2 Total T-Score cut-off >59; Constantino & Gruber, 2012) or the Social Communication Questionnaire, Lifetime Version (SCQ-L cut-off >14; Rutter et al., 2003). In addition, children were required to be between 8 to 13 years of age and have Full-Scale IQ scores of 79 or higher on the Vocabulary and Matrix Reasoning subscales (M = 104.82, SD = 15.21) of the Weschler Abbreviated Scale of Intelligence, Second Edition (WASI-II; Wechsler, 2011), and parent reports of emotion regulation difficulties (e.g., anger, sadness, anxiety) or clinical problems associated with emotion regulation, as assessed with the Anxiety Disorders Interview Schedule for DSM-IV: Parent Version (ADIS-P; Silverman & Albano, 1996) or the Behaviour Assessment Scale for Children, Second Edition (BASC-2; Reynolds & Kamphaus, 2004) or Third Edition (BASC-3; Reynolds & Kamphaus, 2015). Families were required to be willing to attend all pre- and post-intervention research appointments and 10 therapy sessions.

Table 1

Parent and Child Demographics

	n (%)
Child ethnicity	
White	56 (69)
Visible minority	16 (20)
Prefer not to disclose	9 (11)
Parent ethnicity	
White	57 (70)
Visible minority	16 (20)

Prefer not to disclose	8 (10)
Parent education	
Less than a bachelor's degree	17 (21)
Bachelor's degree or more	56 (69)
Prefer not to disclose	8 (10)
Parent marital status	
Single/divorced	7 (9)
Married/common law	73 (90)
Prefer not to disclose	1 (1)
Annual family income	
< $49,999	3 (4)
$50,000 – $99,999	17 (21)
$100,000 – $149,999	10 (12)
> $150,000	30 (37)
Prefer not to disclose	21 (26)

Measures

Coherence

Coherence was evaluated using the Five Minute Speech Sample procedure (FMSS; Magaña et al., 1986), in which parents are asked to speak for five minutes about their child without them present. Researchers administered the following prompt to parents:

"I'd like to hear your thoughts about [child's name] in your own words and without my interrupting you with any questions or comments. When I ask you to begin, I'd like you to speak for 5 minutes, telling me what kind of person [child's name] is and how the two of you get along together. After you have begun to speak, I prefer not to answer your questions. Are there any questions you would like to ask me before we begin?"

Speech samples were audio-recorded and transcribed, and were evaluated for their coherence on various scales following a methodology developed by Sher-Censor and colleagues (2013). Based on scales adapted from the Insightfulness Assessment (Koren-Karie & Oppenheim, 2001), the six scales consisted of focus, elaboration, separateness, concern, acceptance, and complexity. Speech samples were rated on a continuous ordinal scale from 1 to

7 on each of the six aspects of coherence. An overall coherence score was independently coded, and higher scores reflected a more undistorted, multifaceted, and well-integrated portrayal of the child, while lower scores reflected a more distorted, one-sided, and poorly integrated portrayal of the child. This overall coherence score was dichotomized to maintain comparability with prior studies which have utilized the FMSS to characterize coherence (Sher-Censor et al., 2016, 2017). Overall coherence scores between 1 and 4 were coded as incoherent, and overall coherence scores between 5 and 7 were coded as coherent. The speech samples were coded by the first author (NV), a graduate student (AI), and a research assistant (AP), who underwent training administered by the author of the FMSS coding scheme (Sher-Censor et al., 2013). Coders were blind to participant IDs and whether transcripts were from pre- or post-intervention timepoints. However, 28% of the transcripts contained information indicating when the FMSS was administered (e.g., spoke about experience in program). Interrater reliability (i.e., *ICC*) was established by all three coders coding 20% of the transcripts, and was calculated based on a two-way random effects model (Shrout & Fleiss, 1979). Coders met regularly during the coding process to discuss and resolve any discrepancies through consensus. Across prior studies of families in the general population and in the autism population, interrater reliability has ranged from moderate (*ICC* = .53) to good (*ICC* = .86) for the individual subscales, from good (*ICC* = .82) to excellent (*ICC* = .95) for the continuous coherence score, and was strong to almost perfect (*Kappa* = .83 to 1.00) for the dichotomous coherence score (Foley et al., 2019; Sher-Censor et al., 2013, 2016, 2017, 2018; Sher-Censor & Yates, 2015). For the present study, pre-intervention interrater reliability was excellent (*ICC* = .92 to .97) for the individual subscales, excellent (*ICC* = .98) for the continuous coherence score, and strong (*Kappa* = .88) for the dichotomous coherence score. This coding system has been validated in prior studies in which

the coherence of mothers' FMSS was associated with fewer behavior problems in preschoolers (Sher-Censor & Yates, 2015), was related to more positive depictions of the parent-child relationship in preschoolers' narratives (Sher-Censor et al., 2013), and predicted changes in adaptation from preschool to first grade among children with self-regulation difficulties (Sher-Censor et al., 2016).

Child Characteristics

Autism symptoms were assessed at baseline with the parent-report Social Responsiveness Scale, Second Edition (SRS-2; Constantino & Gruber, 2012). This 65-item measure assesses social functioning in five domains: Social Awareness, Social Cognition, Social Communication, Social Motivation, and Restricted Interests and Repetitive Behaviour (RRB). Items are rated on a Likert scale from 1 'not true' to 4 'almost always true', and higher scores indicate higher levels of social impairments. In the present study, the Social Communication and Interaction (SCI; M = 72.65, SD = 8.57), comprised of the Social Awareness, Social Cognition, Social Communication, and Social Motivation subscales, and RRB (M = 74.05, SD = 9.68) T-Scores were analyzed. Within a normative sample, internal consistency ranged from α = .94 to .96, test-retest reliability of the original version of the measure (Social Responsiveness Scale; Constantino & Gruber, 2005) ranged from r = .88 to .95 and interrater reliability between parents and teachers on the school-age form was ICC = .77 (Bruni, 2014). Validity of the SRS-2 has also been established, with a study demonstrating that autistic children obtained higher scores than a control group (Bruni, 2014).

Child mental health was assessed pre- and post-intervention using the Internalizing Problems (i.e., anxiety, depression, somatization), Externalizing Problems (i.e., hyperactivity, aggression, conduct problems), and Behavioural Symptoms Index (i.e., hyperactivity, aggression,

depression, atypicality, withdrawal, attention problems) T-Scores from the parent-report Behavior Assessment Scale for Children, Second Edition (BASC-2; Reynolds & Kamphaus, 2004) in the first intervention trial and Third Edition (BASC-3; Reynolds & Kamphaus, 2015) in the second intervention trial. This measure assesses the behaviours and emotions of children and adolescents and has been frequently utilized in autism samples (Bradstreet et al., 2018; Zhou et al., 2020). Items are rated on a Likert scale from 1 ‘never’ to 4 ‘almost always’, with higher scores indicating greater mental health challenges. Scores 70 and above were categorized as clinically significant, between 60 and 69 were categorized as borderline, and 59 and below were categorized as not clinically significant. Pre-intervention Internalizing Problems (M = 61.62, SD = 12.18), Externalizing Problems (M = 59.07, SD = 10.72), and Behavioural Symptoms (M = 69.25, SD = 9.56) T-Scores ranged from 39 to 106, and post-intervention Internalizing Problems (M = 56.72, SD = 12.12), Externalizing Problems (M = 56.44, SD = 11.04), and Behavioural Symptoms (M = 64.49, SD = 10.03) T-Scores ranged from 36 to 94. The BASC-2/BASC-3 contains strong psychometric properties, with high internal consistency, test-retest reliability, and moderate to high concurrent validity (Bradstreet et al., 2018; Reynolds & Kamphaus, 2004, 2015; Zhou et al., 2020).

Covariates

As previous studies have demonstrated associations between coherence and parent mental health (Oppenheim et al., 2012; Sher-Censor et al., 2017), parent mental health was included as a covariate in data analysis. Parent mental health was measured using the Depression Anxiety Stress Scale (DASS-21; Lovibond, 1995). This 21-item self-report measure has seven items per subscale (i.e., depression, anxiety, stress), and items are rated on a Likert scale from 0 ‘never’ to 3 ‘almost always’. The total score ranged from 0 to 35 (M = 9.80, SD = 7.60), with higher scores

indicating greater mental health difficulties. The DASS-21 has demonstrated good to excellent internal consistency in a non-clinical sample of adults (α = .82 to .90 for subscales, and α = .93 for overall score; Henry & Crawford, 2005) and in a sample of adults with autistic children (α = .77 to .90 for subscales, and α = .91 for overall score; Maughan & Weiss, 2017).

Procedure

Study Design

Interested families completed a phone screening and brief online survey, which included the SRS-2, to assess eligibility for the study. Eligible and interested participants attended an in-person appointment, where informed consent and assent were obtained. Demographic information on the parents and children (e.g., age, gender, family characteristics) was also collected at this appointment. Children completed a readiness for therapy interview and researchers administered the WASI-II (Wechsler, 2011). Families then returned for a second visit within two weeks to complete other measures, including the FMSS and BASC-2/BASC-3. Following this appointment, families were randomized to either a treatment immediate (TI) or waitlist control (WLC) group. The TI group commenced therapy within a week of randomization, and parents of children in the WLC group were asked not to enroll their child in any other CBT therapy or therapy addressing emotion regulation for three months. The WLC group then commenced the delayed intervention. All measures were re-administered 10 to 14 weeks after beginning the intervention to both the TI and WLC groups. For the purposes of the present study, the pre- and post-intervention data were combined from both the TI and WLC groups. Families were reimbursed for parking or public transportation costs, and children received a prize following the completion of therapy and research testing appointments. The study was approved by the University Research Ethics Board.

Intervention

The intervention was a 10-week, manualized CBT intervention for autistic children experiencing mental health challenges (Secret Agent Society: Operation Regulation; Beaumont, 2013). Each session involved education from a therapist, practice of emotion regulation strategies, and planning for home and school activities. Emotion regulation skills were taught through various activities such as monitoring bodily clues and observing facial expressions, practicing relaxation and mindfulness techniques (e.g., controlled breathing, body scans), and learning about coping strategies (e.g., cognitive restructuring). Parents were encouraged to participate in the session activities and facilitate home and school activities. They were also provided with a workbook that summarized session content, included strategies for assisting with child behaviours, and contained tips for helping their child complete home and school activities. Therapy was administered by graduate students who attended one full training day involving reviewing the manuals and observing videos. Previous studies provide further detail on the intervention and content of the individual sessions (Thomson et al., 2015; Weiss et al., 2018).

Data Analysis

Only participants with complete and usable pre- and post-intervention FMSS data were included. Statistical assumptions were evaluated (e.g., distribution of scores, linearity, independence of observations, homoscedasticity, multicollinearity) and the dataset was inspected for outliers, and no major violations were observed. Since coherence was rated using an ordinal scale, Spearman rho correlations were computed at baseline for pre-intervention (T1) characteristics (i.e., child/parent age, child IQ, child/parent mental health, autism symptoms, overall and subscale coherence scores). Exploratory Mann-Whitney U tests were conducted to determine whether there were baseline differences in coherence scores according to clinical cut-

offs (i.e., T-Scores > 59) on the Internalizing Problems, Externalizing Problems, and Behavioural Symptoms Index T-Scores. For dichotomous coherence, Mann-Whitney U tests were performed, with coherence (i.e., incoherent versus coherent) as the grouping variable and T1 autism symptoms (i.e., SRS-2 RRB and SCI T-Scores) and T1 child mental health (i.e., Internalizing Problems, Externalizing Problems, and Behavioural Symptoms Index T-Scores) as separate dependent variables. As supported by a previous study of autistic children investigating the emotional availability of mothers categorized as incoherent versus coherent (Sher-Censor et al., 2017), and a power analysis conducted in G*Power 3.1 (alpha of .05 and power of .80; Faul et al., 2009), moderate to large effects could be detected using this analysis. Significant baseline associations were followed up with partial correlations to examine unique associations with coherence scores while controlling for other parent (e.g., age, mental health) and child (e.g., age, IQ) characteristics. Nonparametric Quade's Analysis of Covariance (ANCOVA) tests were conducted to examine whether there were group differences in child characteristics according to the dichotomous coherence variable while controlling for other parent and child characteristics. To examine whether there were improvements in coherence following therapy, Wilcoxon signed-rank tests were conducted for the subscale scores and the continuous coherence score. Based on a power analysis (G*Power 3.1; alpha of .05 and power of .80; Faul et al., 2009), this analysis approach was sufficient to detect small effects. Effect sizes for the Mann-Whitney U and Wilcoxon signed-rank tests were calculated using *r* for ordinal data, as described by Fritz et al. (2012). For the dichotomous coherence score, a McNemar test was calculated to determine changes in the proportion of parents' representations that were categorized as incoherent versus coherent before and after the intervention. Consistent with the results of a previous study investigating changes in maternal insightfulness following a therapeutic intervention for

preschoolers' behavioural and emotional problems using a McNemar test (Oppenheim et al., 2004), this analysis was sufficient to detect significant effects at an alpha of .01. To examine whether coherence was associated with improved child treatment outcomes, linear regression analyses were performed. Predictors included a T1 child mental health variable (e.g., Internalizing Problems), covariates (e.g., parent mental health, parent age, child age, autism symptoms), and overall coherence. The dependent variable was T2 scores in a child treatment outcome (i.e., Internalizing Problems, Externalizing Problems, Behavioural Symptoms). Separate analyses were conducted with T1 coherence and change in coherence as predictors, and for each T2 child treatment outcome as the dependent variable. A power analysis (G*Power 3.1; Faul et al., 2009) indicated that moderate effects could be detected using linear regressions with an alpha of .05, sample size of 81, and six predictors. Although an alpha of .05 was used for all analyses, this threshold of significance is arbitrary and may not serve as an optimal indication of a practically or clinically significant effect. As such, the present study's data analysis approach reflected on alpha values as well as effect sizes when interpreting the results. For instance, the effect size for the difference between incoherent and coherent ratings in child mental health was operationalized using *r* (Fritz et al., 2012), which was calculated by dividing the standardized test statistic (i.e., *Z*-score) by the square root of the sample size ($n = 81$). Due to this small sample size, no adjustments were made to correct for multiple comparisons, which may have increased the likelihood of a Type I error. However, *p*-value adjustments also increase the risk of a Type II error, and as there is limited research examining parental coherence within the context of therapy for autistic children, the potential practical significance and relevance of these findings justified the risk of potentially increasing the Type I error rate.

Results

Analysis 1: Baseline Associations

Spearman rho correlations between T1 parent and child characteristics and subscale and overall coherence scores are displayed in Table 2. Child IQ and SCI scores were not related to subscale or overall coherence scores (all *p*'s > .10). Parent characteristics such as age and mental health challenges were correlated with subscale scores (i.e., lower acceptance, lower complexity, higher concern) with effect sizes in the small to moderate range. Additionally, greater parent mental health challenges were moderately linked with lower overall coherence. Similar patterns were found with child mental health, such that higher internalizing problems, externalizing problems, and behavioural symptoms were associated with lower scores on acceptance, complexity, and overall coherence, with effect sizes in the small to moderate range. As shown in Table 3, consistent patterns were seen when considering clinical severity, with children with borderline or clinically significant levels of internalizing problems receiving lower separateness, (p = .07), acceptance (p = .02), complexity (p = .06), and overall coherence (p = .05) scores than children with non-clinically significant problems, with small effect sizes. Similar differences were seen with borderline or clinically significant levels of externalizing problems and lower complexity (p = .02) and overall coherence (p = .03) scores, with small effect sizes. Finally, children with borderline or clinically significant BASC behavioural symptoms index scores had parents who noted lower acceptance (p = .07), complexity (p = .004), and overall coherence (p = .05), with effect sizes in the small to moderate range.

Table 2

T1 Spearman Correlations Between Parent and Child Characteristics and Coherence

	Predictor variables								Dependent variables						
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Child age	-.08	.48***	.07	.18	.11	.29**	.05	.06	.20+	-.15	-.15	.03	-.15	-.12	-.16
2. Child IQ		-.07	.03	-.22*	-.07	.04	-.03	-.08	.002	-.09	.06	.12	-.06	.02	-.12
3. Parent age			.16	.05	-.05	.21	.10	.10	.006	-.11	-.04	.11	-.22*	-.22*	-.18
4. Parent mental health				.29*	.28*	.29**	.27*	.35**	-.05	.004	.0004	.20+	-.36**	-.49***	-.49***
5. SCI					.69***	.39***	.30**	.51***	-.03	.14	.10	-.10	-.13	-.07	.004
6. RRB						.37***	.24*	.46***	-.12	.18	.03	.13	-.21+	-.08	-.17
7. Internalizing problems							.49***	.73***	-.03	-.002	-.16	.13	-.35**	-.36***	-.35**
8. Externalizing problems								.79***	.007	-.07	-.17	.07	-.24*	-.41***	-.34**
9. Behavioural symptoms									-.06	.02	-.05	.04	-.30**	-.39***	-.31**
10. Focus										-.004	-.05	-.04	.006	.09	.10
11. Elaboration											.05	-.01	-.05	.16	.06
12. Separateness												-.03	.02	.09	.07
13. Concern													-.33**	-.29**	-.58***
14. Acceptance														.61***	.71***
15. Complexity															.76***
16. Coherence															

Note. Analyses used continuous coherence variable; SCI = Social Communication and Interaction, RRB = Restricted Interests and Repetitive Behaviour.

+$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$.

Table 3

Mann-Whitney U Tests for T1 Child Mental Health Clinical Cut-offs

	Not clinically significant mean (*SD*)	Borderline/Clinically significant mean (*SD*)	*U*	*Z*	Effect size *r*
Internalizing Problems	*n* = 33	*n* = 48			
Focus	6.61 (*.75*)	6.75 (*.53*)	850.00	.75	.08
Elaboration	6.73 (*.57*)	6.62 (*.76*)	777.00	-.20	.02
Separateness	6.91 (*.38*)	6.60 (*.92*)	673.50^{+}	-1.84	.20
Concern	4.24 (*.97*)	4.48 (*1.09*)	904.50	1.16	.13
Acceptance	5.12 (*1.36*)	4.33 (*1.49*)	562.50*	-2.27	.25
Complexity	4.79 (*1.14*)	4.23 (*1.37*)	606.50^{+}	-1.89	.21
Coherence	4.33 (*.85*)	3.98 (*.91*)	603.50^{+}	-1.93	.21
Externalizing Problems	*n* = 49	*n* = 32			
Focus	6.69 (*.65*)	6.69 (*.59*)	766.00	-.24	.03
Elaboration	6.63 (*.70*)	6.72 (*.68*)	844.50	.82	.09
Separateness	6.82 (*.60*)	6.59 (*.95*)	693.50	-1.42	.16
Concern	4.31 (*1.14*)	4.50 (*.88*)	843.00	.61	.07
Acceptance	4.84 (*1.31*)	4.38 (*1.67*)	661.50	-1.22	.14
Complexity	4.71 (*1.24*)	4.06 (*1.32*)	559.00*	-2.30	.26
Coherence	4.29 (*.87*)	3.87 (*.91*)	575.00*	-2.15	.24
Behavioural Symptoms	*n* = 12	*n* = 69			
Focus	6.67 (*.89*)	6.70 (*.58*)	387.50	-.48	.05
Elaboration	6.83 (*.39*)	6.64 (*.73*)	383.00	-.58	.06
Separateness	6.58 (*.10*)	6.75 (*.72*)	428.50	.31	.03
Concern	4.08 (*1.24*)	4.43 (*1.01*)	465.00	.72	.08
Acceptance	5.33 (*1.16*)	4.54 (*1.51*)	281.00^{+}	-1.82	.20
Complexity	5.50 (*1.00*)	4.28 (*1.27*)	211.00**	-2.86	.32
Coherence	4.58 (*.90*)	4.04 (*.88*)	277.50^{+}	-1.93	.21

Note. Analyses used continuous coherence variable. Not clinically significant = T-Scores 59 and below; Borderline/Clinically significant = T-Scores 60 and above.
$^{+}p < .10$; $*p < .05$; $**p < .01$.

With regards to dichotomous ratings of coherence as specified by Sher-Censor and colleagues (2016, 2017), parents with incoherent ratings had children with greater internalizing problems (M = 64.02, SD = 12.34) than coherent ratings (M = 55.92, SD = 9.87), with a small effect size, Z = -2.58, p = .01. Likewise, incoherent ratings were associated with greater

behavioural symptoms index scores (M = 70.61, SD = 9.55) than coherent ratings (M = 66.00, SD = 8.95), with a small effect size, Z = -2.10, p = .04. Group differences in externalizing problems according to incoherent (M = 60.49, SD = 11.34) versus coherent ratings (M = 55.71, SD = 8.36) showed a similar pattern, but were approaching significance, Z = -1.88, p = .06. There were no group differences in autism symptoms (i.e., SCI and RRB) according to dichotomous coherence ratings (all p's > .10).

Follow-up partial correlations were computed to examine unique associations between child mental health symptoms and subscale and overall coherence scores, while controlling for child age, autism symptoms (i.e., SRS-2 Total T-Score), parent age, and parent mental health. Greater internalizing problems (r = -.29, p = .01), externalizing problems (r = -.26, p = .02), and behavioural symptoms (r = -.29, p = .01) were associated with lower overall coherence scores after controlling for these other variables. In terms of subscale scores, lower acceptance and complexity were associated with greater internalizing problems (r = -.25, p = .03; r = -.32, p = .006), externalizing problems (r = -.22, p = .06; r = -.32, p = .005), and behavioural symptoms (r = -.24, p = .04; r = -.36, p = .001). Nonparametric Quade's ANCOVAs did not indicate any group differences in child mental health symptoms according to dichotomous ratings of coherence (i.e., incoherent versus coherent) while controlling for child age, autism symptoms, parent age, and parent mental health (all p's > .10).

Analysis 2: Changes in Coherence Following Therapy

To investigate whether there were improvements in aspects of parental coherence following the intervention, Wilcoxon signed-rank tests were conducted. As shown in Table 4, post-intervention concern subscale scores were lower (Z = -3.38, p < .001), and post-intervention acceptance scores (Z = 2.48, p = .01) were higher, than pre-intervention scores, with effect sizes

in the small to moderate range. There were no differences in other subscale scores or overall coherence following the intervention (all *p*'s > .10). With regards to dichotomous ratings of coherence, approximately 30% (*n* = 24) of parents were rated as coherent at pre-intervention, and this increased to 43% (*n* = 35) at post-intervention, though results of the McNemar test revealed that changes did not meet a statistically significant cut point, *p* = .07. At the same time, there was a substantial degree of substitution across categories, where 10 of the original 24 participants who were rated as coherent prior to the intervention were rated as incoherent following the intervention, and 21 of the 57 participants who were rated as incoherent prior to the intervention were rated as coherent following the intervention. Of these 21 participants that did improve in coherence, 90% (*n* = 19) had lower levels of concern, 48% (*n* = 10) were more accepting, and 33% (*n* = 7) had more complex descriptions of their children.

Table 4

Wilcoxon Signed-Rank Tests from Pre- to Post-Intervention

	T1 mean (*SD*); *n* = 81	T2 mean (*SD*); *n* = 81	*U*	*Z*	Effect size *r*
Focus	6.69 (*.63*)	6.73 (*.71*)	216.50	.32	.04
Elaboration	6.67 (*.69*)	6.67 (*.92*)	150.00	.38	.04
Separateness	6.73 (*.76*)	6.86 (*.61*)	79.00	1.09	.12
Concern	4.38 (*1.04*)	3.70 (*1.35*)	425.00***	-3.38	.38
Acceptance	4.65 (*1.49*)	5.11 (*1.21*)	1244.00*	2.48	.28
Complexity	4.46 (*1.30*)	4.53 (*1.23*)	570.00	.61	.07
Coherence	4.12 (*.90*)	4.26 (*.91*)	611.00	1.11	.12

Note. Analyses used continuous coherence variable.
*$p < .05$; ***$p < .001$.

Analysis 3: Associations with Child Treatment Outcomes

To test the hypothesis that coherence at the start of treatment would be associated with greater improvements in intervention outcomes for children, linear regression analyses calculated the associations between pre-intervention (T1) overall coherence ratings and post-intervention (T2) child treatment outcomes while controlling for T1 clinical symptoms and covariates (i.e.,

child age, autism symptoms, parent age, and parent mental health). As shown in Table 5, T1 coherence was not uniquely associated with T2 internalizing problems (p = .18), externalizing problems (p = .99), or behavioural symptoms (p = .34) after accounting for the influence of baseline levels of clinical symptoms on child treatment outcomes.

Table 5

Linear Regressions Between T1 Coherence and T2 Child Treatment Outcomes

	B	*SE*	*t*	*R*	R^2
Internalizing problems				.82	.67
Constant	-14.55	11.74	-1.24		
Child age	.09	.68	.13		
Parent age	.15	.21	.74		
T1 Internalizing problems	.79***	.08	9.49		
T1 Autism symptoms	.10	.11	.90		
T1 Parent mental health	.17	.13	1.33		
T1 Coherence	1.44	1.05	1.37		
Externalizing problems				.89	.79
Constant	1.47	9.47	.16		
Child age	.24	.51	.47		
Parent age	-.06	.16	-.40		
T1 Externalizing problems	.91***	.06	14.29		
T1 Autism symptoms	.02	.08	.20		
T1 Parent mental health	.04	.10	.47		
T1 Coherence	-.01	.79	-.02		
Behavioural symptoms				.83	.69
Constant	-4.11	10.42	-.39		
Child age	.20	.56	.36		
Parent age	-.02	.17	-.09		
T1 Behavioural symptoms	.86***	.09	9.64		
T1 Autism symptoms	.05	.10	.50		
T1 Parent mental health	.09	.10	.84		
T1 Coherence	.84	.87	.97		

Note. Analyses used continuous coherence variable. The dependent variable was the T2 child treatment outcome in all analyses.
***p < .001.

Similar regressions were run to test the hypothesis that improvements in coherence would be associated with improvements in child symptoms following the intervention. Table 6 depicts the results of linear regression analyses of the associations between change in coherence

following therapy (operationalized as change scores) and T2 child treatment outcomes, while controlling for T1 clinical symptoms and covariates. For internalizing problems, the overall model accounted for 67% of the variance in T2 internalizing problems, F (6, 72) = 24.84, p < .001, with change in coherence accounting for 1% of unique variance (p = .08). This pattern was stronger for behavioural symptoms, with the overall model predicting 72% of variance, F (6, 72) = 30.60, p < .001, and change in coherence accounting for 3% of unique variance in behavioural symptom improvement (p = .007). These links were not found for externalizing problems.

Table 6

Linear Regressions Between Change in Coherence and T2 Child Treatment Outcomes

	B	*SE*	*t*	*R*	R^2
Internalizing problems				.82	.67
Constant	-3.53	10.81	-.33		
Child age	-.22	.69	-.32		
Parent age	.14	.21	.68		
T1 Internalizing problems	.77***	.08	9.79		
T1 Autism symptoms	.10	.11	.94		
T1 Parent mental health	.14	.12	1.24		
Change in Coherence	-1.32^{+}	.76	-1.75		
Externalizing problems				.89	.79
Constant	3.80	8.59	.44		
Child age	.10	.52	.19		
Parent age	-.07	.16	-.42		
T1 Externalizing problems	.91***	.06	15.00		
T1 Autism symptoms	.001	.08	.01		
T1 Parent mental health	.08	.09	.85		
Change in Coherence	-.71	.57	-1.25		
Behavioural symptoms				.85	.72
Constant	6.06	9.06	.67		
Child age	-.20	.55	-.37		
Parent age	-.03	.17	-.16		
T1 Behavioural symptoms	.83***	.08	10.27		
T1 Autism symptoms	.04	.09	.44		
T1 Parent mental health	.12	.09	1.23		
Change in Coherence	-1.68**	.60	-2.79		

Note. Change in coherence was calculated using continuous coherence variable. The dependent variable was the T2 child treatment outcome in all analyses.
^{+}p < .10; **p < .01; ***p < .001.

Discussion

This study demonstrated the validity and utility of the Five Minute Speech Sample procedure (FMSS; Magaña et al., 1986) to characterize coherence in families of autistic children participating in a 10-week CBT program for child mental health challenges (Secret Agent Society: Operation Regulation; Beaumont, 2013). Adopting this brief, low-burden coding scheme yielded a reliable indication of a nuanced aspect of parental representations, which reflected *how* parents spoke about their children (i.e., complexity, acceptance) rather than solely the content of their narratives. Compared to self-report (i.e., Positive Affect Index; Bengtson & Schrader, 1982) or interview-based (i.e., Camberwell Family Interview; Calam & Peters, 2006) measures of parental representations and the parent-child relationship, coherence captured using the FMSS procedure elicited an objective, behavioural indication of parents' understanding of the needs and abilities of their children.

Baseline Associations Between Coherence and Parent and Child Characteristics

Some child characteristics such as IQ and age were not associated with coherence, suggesting that more stable child factors are not linked with parental representations. As children in this sample were between 8 to 13 years of age and had relatively high IQ, a lack of variability may have contributed to the null associations between these child characteristics and coherence. On the other hand, parent age was negatively associated with acceptance and complexity, and greater parent mental health challenges were associated with higher concern, and lower acceptance, complexity, and overall coherence scores. This latter finding is in line with a previous study of children without autism, which demonstrated that depressed mothers had more negative mental representations of their children (Davis et al., 2020). It is possible that parents' own mental health problems may hamper their ability to be attuned to the needs of their children

due to their lack of emotional availability (Sher-Censor et al., 2017), which is important for positive child development (Biringen et al., 2014). Moreover, as modeling is an important mechanism through which children learn emotional responses (Bandura, 1977), parents with greater mental health challenges may inadvertently model maladaptive emotion regulation strategies, exacerbating mental health problems in their children.

Contrary to our hypothesis, other child characteristics such as autism symptoms (i.e., social communication and interaction, restricted interests and repetitive behaviour) were not associated with coherence. While similar research exists reporting no associations between autism severity and parents' descriptions of their children (Kirk & Sharma, 2017), other studies have demonstrated links (Ansari et al., 2020; Greenberg et al., 2006). Within the present study, components of coherence such as concern and acceptance may have been expected to be related to the severity of children's autism symptoms (e.g., social difficulties, restricted interests) as these behaviours are less socially acceptable and may impact children's overall functioning (Kenworthy et al., 2009). These relationships may not have emerged because an autistic child's diagnosis may be a stable and unchanging aspect of their personality, which may not influence parents' current perceptions of their children as captured within a five minute speech sample. Instead, parents frequently spoke about the consequences of their child's autism-related symptoms, such as problems with social interactions contributing to their child's social anxiety, or communication challenges contributing to their child's behavioural problems. Additionally, the families in the present study were seeking treatment primarily for their child's mental health problems, so behaviours and symptoms related to their child's autism diagnosis may not have been as salient within parents' descriptions when using an open-ended approach like the FMSS.

Consistent with our hypothesis, children's mental health challenges were associated with various aspects of coherence. At the subscale level, greater mental health challenges (i.e., internalizing problems, externalizing problems, behavioural symptoms) were associated with lower acceptance and complexity. Likewise, children with borderline or clinically-significant levels of internalizing problems, externalizing problems, and behavioural symptoms had lower scores in separateness, acceptance, and complexity. The associations revealed between acceptance and child mental health reflects patterns seen in studies of expressed emotion (EE), which is a measure of parents' feelings and attitudes expressed for their child (Magaña et al., 1986). High EE reflects high levels of criticism or emotional overinvolvement, low warmth, or a negative relationship (Benson et al., 2011). This construct has been frequently studied within the context of parenting autistic children and youth, and researchers have demonstrated links between EE and child mental health. For instance, one study found that high EE, specifically criticism and hostility, was predictive of greater levels of externalizing behaviour in autistic children (Bader et al., 2015). Outside of autism, parents of children with depressive disorders have shown less acceptance of positive emotions and exhibit more minimizing and dampening responses (Katz et al., 2014). As parents of autistic children may often directly manage their child's behavioural problems (i.e., aggression), externalizing problems (e.g., conduct problems), and internalizing problems (e.g., anxiety), it is unsurprising that associations were revealed between lower acceptance and greater mental health challenges in the present study. Complexity refers to the extent to which parents can describe their child and their relationship in a comprehensive and balanced manner, including mostly positive, but also some negative aspects of their child's behaviour. In children with greater mental health challenges, parents may speak more about the negative aspects of their child and their behaviour (Baker et al., 2019), thus

resulting in less complex portrayals of their child and their relationship. Lastly, separateness refers to a parent's ability to relate to their child as a separate person. Within the context of autism, parents are often actively involved in their children's care (van Steensel & Bögels, 2015). Although this parental involvement has been shown to benefit children (Sofronoff et al., 2005), overinvolvement may contribute to a decreased ability for parents to perceive their child as separate from themselves. This may be especially pertinent in children with mental health challenges, as indicated in a study that revealed links between emotional overinvolvement and higher internalizing problems (Rea et al., 2020).

Lastly, greater mental health challenges were associated with more incoherent representations. These findings are consistent with studies outside of autism, which have demonstrated that lower parental coherence is associated with higher child internalizing and externalizing behaviours (Sher-Censor et al., 2018; Sher-Censor & Yates, 2015). Coherence is the clarity, consistency, multidimensionality, and authenticity of parents' verbal narratives about their child (Main et al., 1985; Oppenheim, 2006). It is possible that in children with more salient mental health symptoms (e.g., behaviour problems, depression), parents may have had difficulty speaking about multiple dimensions of their child's behaviour, instead focussing specifically on their challenges or negative attributes. Another possibility is that they may have inconsistent and unclear representations of their children due to the variability which may occur in children's behaviour, as a result of their mental health challenges. However, it is important to note the bidirectional nature of the relationship between coherence and child mental health. According to attachment theory, parents' representations are not only shaped by children's behaviours, but also contribute to them (Bowlby, 1969). If parents have consistent, clear, and multidimensional representations of their children, they may be able to meet their needs more effectively. This was

evidenced in a study of autistic children which revealed that coherent mothers were more emotionally available (i.e., able to accurately interpret their child's signals, respond to their needs, and appropriately structure interactions with their child) than incoherent mothers (Sher-Censor et al., 2017). This type of sensitive and emotionally attuned parenting is vital for the optimal development of children with developmental disabilities (Ainsworth et al., 1978). On the other hand, if children's needs are not effectively met, they may internalize their problems (e.g., depression), or display external symptoms such as aggression or conduct problems to engage the attention of their parents (Bates & Bayles, 1988; Cassidy, 1994). As such, it can be useful to consider the mechanisms that may lead parental incoherence to contribute to children's mental health symptom expression.

In light of these findings, it is important to note that although the overall coherence score was coded independently, it was dependent on the individual subscale scores. For instance, a transcript could only be categorized as coherent if scores on the focus, elaboration, separateness, acceptance, and complexity scores were between 5 to 7, and the concern score was not above 4. Additionally, there was little variability in the focus, elaboration, and separateness subscales, and majority of the incoherent ratings at baseline were assigned due to problems with concern (75%), acceptance (63%), and/or complexity (58%). Therefore, the association between child mental health and overall coherence should be interpreted while considering the significant influence of these subscales on overall coherence scores.

Changes in Coherence Following Therapy

Contrary to our hypothesis, there were no group-level changes in overall coherence following the intervention. As parents were involved in the intervention as co-facilitators, it was expected that there may be improvements in parents' understanding of the needs and abilities of

their children, and in turn, the coherence of their representations. These null findings may have occurred because parental representations tend to remain stable across time (Aber et al., 1999; Benoit et al., 1997; Theran et al., 2005). As such, the intervention's brief and child-focused nature, which did not directly target changing parental representations, may have lacked the dose or instrumental activities required for shifting schemata held about children. Similarly, one study of children participating in the same intervention did not reveal improvements in parents' overall EE following participation in their child's therapy (Maughan & Weiss, 2017). However, the literature surrounding this finding is mixed, as previous studies have demonstrated changes in parental representations after participating in brief interventions that do not directly target the parent-child relationship. In a study outside of autism, Gar and Hudson (2009) found that following participation in their child's CBT for anxiety, there was a significant decrease in the proportion of mothers who expressed high levels of criticism and emotional overinvolvement.

It is important to acknowledge the methodological considerations that may have contributed to this lack of change in coherence across therapy. Notably, many participants were categorized as incoherent both at baseline (70%) and following the intervention (57%). It may be that many participants were categorized as incoherent at both timepoints because of the stringent criteria of the coherence coding scheme (Sher-Censor et al., 2013). Coders were trained to assign a maximum possible score of 7 across the individual subscales and the overall coherence score, and subsequently deduct points to derive a final score. As such, one statement could have had the potential to change the categorization of a speech sample from coherent to incoherent. For example, with regards to acceptance, participants received a score of 5 if they were accepting of their child for the majority of the transcript, but expressed a minor remark indicating a lack of acceptance. However, two remarks of this nature would earn a score of 4, and the transcript

would be categorized as incoherent. In addition to this, there was a substantial degree of substitution with regards to participants categorized as incoherent versus coherent prior to and following the intervention. Regardless, of the participants that did improve in coherence following the intervention (26%), the majority had lower levels of concern (90%), and many were more accepting (48%) and had more complex (33%) descriptions of their children compared to their pre-intervention FMSS. Past research of changes in parental descriptions following interventions for autistic children has indicated that parents tend to report a greater number of positive comments post-intervention (Maughan & Weiss, 2017), reflecting higher levels of acceptance, and are more likely to describe their children beyond the 'here-and-now', and less likely to make comparisons to 'normality', which may be reflective of greater acceptance and lower concern (Brezis et al., 2015). As a result of participating in their children's therapy, parents' descriptions may show less concern, more acceptance, and more complexity when they may be better able to appraise and make meaning of their child's disability (Bayat, 2007; Hastings & Taunt, 2002), and are more understanding of the needs and abilities of their children (Zimmer-Gembeck et al., 2019).

Associations with Child Treatment Outcomes

Although baseline parental coherence ratings were not associated with changes in child treatment outcomes, improvements in coherence from pre- to post-intervention uniquely predicted improvements in children's behavioural symptoms following completion of the program. The same could not be said for more specific externalizing problems (e.g., hyperactivity, aggression, conduct problems), and only approached significance for internalizing problems (e.g., anxiety, depression, somatization). The behavioural symptoms index on the BASC estimates the general level of functioning or presence of impairment (Reynolds &

Kamphaus, 2015). This index includes clinical scales such as hyperactivity, aggression, and depression, and reflects the overall level of problem behaviour of a child with a disability or diagnosed condition. It appears that compared to specific mental health symptoms, improvement in the coherence of parents' representations is related to changes in children's overall functioning following therapy. Given that the current intervention primarily addresses emotion regulation (Beaumont, 2013), which has been shown to be a transdiagnostic process (Aldao et al., 2010; Temkin et al., 2022; Weiss et al., 2018), it may be better suited to address holistic indicators of functioning, rather than symptom-specific change (e.g., anxiety). As such, parents may be more reflective of their children in an omnibus manner, as improvements may be observed across multiple domains of functioning and within various contexts. Through participation in their child's therapy, parents' representations may not shift when observing changes in a specific domain or symptom category. Rather, their representations may be altered based on observing improvements in their children's overall functioning. Conversely, changes in parents' representations over the course of therapy may be related to broader changes in children's functioning because once parents have a better understanding of the needs and abilities of their children, they may be better able to promote the generalization of skills within multiple contexts and foster the maintenance of treatment gains (Shalev et al., 2020). Regardless of the directionality of the link between parental coherence and child treatment outcomes, these findings advocate for parent-involved therapy, as it can potentially enhance overall treatment effectiveness (Silverman & Berman, 2000). Fundamentally, practitioners may conceptualize intervention programming for autistic children to not only address child symptoms, but also parents' representations of their children. These findings also underscore the importance of designing and implementing holistic, transdiagnostic treatment goals when working with these

families (Fusar-Poli et al., 2019), as it can benefit both children and parents. This is especially relevant for autistic children, who may exhibit an array of transdiagnostic difficulties (e.g., emotion dysregulation), in addition to their core impairments in social communication.

In terms of the lack of pre-intervention predictive capacity of coherence, it may be that baseline coherence ratings did not predict child treatment outcomes because the intervention was child-focused, and parents were solely involved as co-facilitators. As such, regardless of whether parents had incoherent representations before commencing therapy, children would be supported by therapists to target improvements in their mental health. Therefore, treatment progress may be impervious to parent characteristics prior to participating in an intervention. Rather, indirect changes that may occur in parents' representations (e.g., increased understanding of children's abilities and needs) through involvement in their child's therapy may be related to improvements in children's symptoms, as substantiated by the present study's findings.

Limitations & Future Directions

One limitation of the present study is related to sample bias and a lack of potential generalizability. The majority of the parents self-identified as White and were mothers, most of the children were males, and the families had relatively high income and education, which has been linked to aspects of the caregiving experience and parents' ability to respond effectively to the needs of their children (Evans et al., 2008; Gülseven et al., 2018). In addition, the sample consisted of autistic children with relatively high IQ and parents who were motivated to seek treatment for their child's mental health challenges. Additionally, there was little variability in some of the coherence subscales, including focus, elaboration, and separateness, limiting the interpretability of the overall coherence score, which was largely variable as a result of the concern, acceptance, and complexity subscales. Lastly, the present study's findings should be

interpreted with caution, as no adjustments were made to correct for multiple comparisons, and the analyses were correlational in nature.

As the present study did not examine the directionality of the association between parental coherence and child characteristics, future research is needed to examine the transactional nature of this relationship using longitudinal designs. Moreover, it would be valuable to capture the coherence of children's representations of their relationship with their parents (e.g., Sher-Censor et al., 2013), and how this may be related to their own mental health symptoms. Research is also needed to examine potential changes in coherence within the context of parent-focused interventions, such as parent-child interaction therapy (Eyberg, 1988), parenting interventions (e.g., The Incredible Years; Webster-Stratton, 2005), and parent management training (Kazdin, 1997). Lastly, it would be interesting to examine the therapeutic processes (e.g., parent/child engagement, therapeutic alliance) that may be related to changes in parents' representations following participation in therapy, given that these common factors are associated with treatment outcomes (Lambert & Barley, 2001).

Conclusion

It is critical to investigate factors that shape parents' representations of their autistic children, as these families face unique challenges such as caregiving stress, and parent and child mental health problems (Bitsika & Sharpley, 2004; Hayes & Watson, 2013; Rosen et al., 2018). Within the present study, many participants were categorized as incoherent both at pre- and post-intervention, indicating that targeting improvements in parental coherence within this population is an important consideration. As parental coherence was associated with children's internalizing problems, externalizing problems, and behavioural symptoms at baseline, these factors can be addressed within intervention programming to improve both child mental health and parental

representations. Additionally, changes in coherence were linked specifically to changes in children's behavioural symptoms following the intervention, suggesting the important role of parental coherence within the context of therapy in fostering improvements in children's overall level of functioning. Lastly, the present study ascertained that although parental participation in their child's therapy did not improve overall coherence, it improved parents' level of concern and acceptance of their children. This crucial finding serves to advocate for parental involvement within their child's therapy, which will ultimately benefit the well-being of autistic children (Burrell & Borrego, 2012; Sofronoff et al., 2005).

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