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Child-Centred Play Therapy and Rhythmic Relating improves emotion regulation in autism: A single-N pilot intervention study

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Abstract

Emotion Regulation is a key factor in the psychological well-being of children on the autism spectrum. Therapeutic *co-regulation* is posited here as fundamental to addressing *Emotion Regulation* needs. A therapeutic combination of *Child-Centred Play Therapy* and *Rhythmic Relating* is assessed in its potential to improve *Emotion Regulation* outcomes (over 10 months; 25 weekly sessions), via co-regulatory experience, in a case study of a 5-year-old autistic boy. The parent-rated *Emotion Regulation Checklist* (Shields & Cicchetti, *Developmental Psychology*, **33**, 1997, 906) was completed every week. Mean *Start* and *Finish* scores were taken for checklist total and all subscales. *Emotion Regulation* percentage-change-over-time values are calculated for the participant and, using percentiles, are compared and statistically ranked in relation to our comparison group: *Autistic boys without concurrent cognitive impairment, not receiving psychological or behavioural therapies* (over 10 months; $N = 66$). A graphical representation of *Emotion Regulation* demonstrates weekly change. As compared to our *comparison group*, our participant's overall *Emotion Regulation* improvements (over 10 months) are statistically *likely* to be due to his participation in therapy ($p < 0.04$). Graphical representation of *Emotion Regulation* over time demonstrates a compelling blind correlation between the period of significant positive change in our participant's Emotion Regulation *and* the therapist's clinical notes on positive change observed in the clinic.

KEYWORDS
autism, Child-Centred Play Therapy, emotion regulation, Rhythmic Relating, well-being

1 | INTRODUCTION

1.1 | Emotion regulation and autism

Emotion Regulation (ER) "is the ability to modify arousal and emotional reactivity to achieve goals and maintain adaptive behaviors" (Beck et al., 2020, p. 4). Impaired ER is associated with several forms of psychological distress and related behavioural difficulties, including depression, anxiety and aggression (Aldao et al., 2010; Compas et al., 2017; Gumora & Arsenio, 2002; Sharp et al., 2011), and a robust evidence base supports ER impairment as an underlying mechanism for these mental health conditions (Aldao et al., 2010; Sharp et al., 2011; Thompson, 2011).

There is significant co-occurrence between autism and complex psychiatric disorders (Leyfer et al., 2006) and between autism and affective disorders (Cai et al., 2018; Lainhart & Folstein, 1994),

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including anxiety (Adams & Emerson, 2021) and depression (Pezzimenti et al., 2019).

Clinically significant ER impairment has been demonstrated in several populations of autistic children (Berkovits et al., 2017; Cai et al., 2018; Cibralic et al., 2019; Nader-Grosbois & Mazzone, 2014; Ting & Weiss, 2017), with one major study reporting that, compared with the general population, autistic children and adolescents are two to four times more likely to have clinically elevated ER impairment (Conner et al., 2021). The emerging consensus from ER/autism studies (Charlton et al., 2019; White et al., 2014) is that ER impairment operates similarly for both autistic and nonautistic populations, "as a transdiagnostic mechanism that can manifest in a range of behavioral and mental health problems" (White et al., 2021, p. 1).

Given the above, it seems feasible that improving ER in therapy may improve overall mental health and behavioural outcomes for autistic children (Berkovits et al., 2023; White et al., 2021).

1.2 | Autism, social timing and co-regulation

Co-regulation is a shared affective experience in which one person's nervous system fine-tunes itself via experiencing another's nervous system responses (Greenspan, 2007; Porges, 2021; Schore, 1994; Sossin & Charone-Sossin, 2007). It is a primary mechanism with which children downregulate their fight/flight/dissociate responses in favour of robust health and social ease (Porges, 2021; Porges et al., 1996). Typically developing (TD) infants actively seek co-regulatory experiences with other people, in which they travel together through vulnerabilities and challenges and then back to okayness (Porges, 2021; Porges et al., 1996; Schore, 1994). Porges (2021) considers this process to be a central function of play. Over many iterations of such play, children exercise their nervous systems and learn to self-regulate[1] their emotions (Porges, 2021). Therapeutic support for ER in young children needs to facilitate and develop many experiences of playful co-regulation.[2]

Co-regulation is a shared experience, involving a sense of travelling together through a narrative flow of emotions and feelings in play. That sense of travelling together requires good-enough shared social timing. Yet, to differing degrees, autistic individuals often find themselves out of sync with other people (Wimpory, 2015; meta-analyses: Baldwin et al., 2020; McNaughton & Redcay, 2020). Autistic children often have difficulty picking up subtleties of communicative gesture and flow from TD children and adults (Di Cesare et al., 2017; Rochat et al., 2013). Conversely, TD adults often have difficulty picking up subtleties of communicative gesture from autistic children (Casartelli et al., 2020; Keen et al., 2005). This bidirectional range of perceptual and motoric dissimilarity can lead to asymmetries and asynchronies and result in a lack of co-regulation. These challenges to co-regulation need to be creatively addressed in support of ER improvement in therapy.

Implications for practice

- We suggest that the focus here, on *emotional well-being* in the lives of autistic children (beyond core diagnostic ASD criteria alone), is a valuable direction in autism research, support and intervention studies. We value *Emotion Regulation* as a central working construct and encourage its use in further autism intervention studies.

Implications for policy

- The focus on well-being for autistic people is a priority aligned with the research and intervention priorities upheld by autistic community members and researchers (Pukki et al., 2022). We fully support the work of the *Global Autistic Task Force on Autism Research* (https://www.liebertpub.com/doi/10.1089/aut.2022.0017) and the Autistic Researchers Committee at the International Society for Autism Research (INSAR; https://www.autism-insar.org/page/InsarARC). We hope this priority will soon be reflected across the board in therapies offered for autistic people.

1.3 | Child-Centred Play Therapy and autism

Play therapy is a safe, consistent space in which children use play, their natural medium of expression, to help them express and process their feelings. Child-centred play therapy (CCPT) is usually a one-to-one dynamic in which the child leads the content of sessions, bringing what is important to them. The CCPT play therapist uses empathy, unconditional acceptance and authenticity to foster a therapeutic relationship in support of safe emotional exploration and co-regulation (Landreth, 2012).

A recent meta-analysis (Hillman, 2018) suggests that CCPT is promising with regard to increasing positive social and self-regulatory behaviours in autistic children. Due to the sporadic methods and often small-scale nature of the included studies, Hillman (2018) pointed towards the need for further studies. Subsequently, one particular study ($N=12$ intensive CCPT 24-session group, versus $N=11$ nonintervention control) demonstrated clear and significant positive results: "…children who participated in 24 sessions of CCPT showed a statistically significant decrease in ASD core symptoms and behavioral symptoms, such as externalizing problems, attention problems, and aggression, compared with children in the control group" (Schottelkorb et al., 2020, p. 63).

With the modality's emphasis on nonverbal communication and play as a primary mode of communication, CCPT is potentially well placed to support autistic children (Hillman, 2018). Many CCPT therapists, however, feel wary of the modality's role in autism support, and it has historically been suggested that CCPT's apparent

emphasis on symbolic play might prove a barrier to autistic engagement. Two systems have been proposed as additional supports for CCPT therapists working specifically with autistic children who are nonspeaking or unconventional communicators: *Rhythmic Relating for Autism* (Daniel et al., 2022) and *Pre-therapy in Child-Centred Play Therapy* (Swan, 2018). This study looks at the Rhythmic Relating model with its focus on bidirectional support for social timing and so its potential to facilitate co-regulatory experiences.

1.4 | Rhythmic Relating for autism

Rhythmic Relating (Daniel et al., 2022) is a model of additional support for anyone (a parent, therapist, friend, etc.) already using a broadly client-centred approach to one-to-one interaction with someone autistic. Here, we can include only a very brief description of the model (for the details of Rhythmic Relating and the skills involved, please see Daniel et al., 2022).

Rhythmic Relating starts with simplicity (minimising sensory and social input) and acclimatisation (spending time getting comfortable with each other). From there, the initial interaction focus is on the client's spontaneous movements, sounds or object play. Interaction is developed through a layered range of *mirroring skills* (across different senses) and a layered series of *rhythmic support skills* (bringing in simple supporting rhythms, accenting specific moments or behaviours and using specific sounds which promote movement and action). This can be done with the voice, body or simple percussive instrument. In supporting social momentum and timing, Rhythmic Relating can help people feel and understand what might come next. The approach supports good-enough timing in interaction and acts as a baseline for shared co-regulatory experience.

From the Rhythmic Relating perspective, we build playful interaction flows across four different levels of play (Daniel, 2019; Daniel et al., 2022): (1) *spontaneous movement or sound patterns*; (2) *simple object play* (basic interactive manipulation of objects, including simple explorations of agency: cause-and-effect; turn-taking); (3) *literal-association play* (contextually relevant play with a toy that has recognised identity: e.g., playing with a toy train as a train); and (4) *symbolic play* (e.g., using a wooden block as a train). Traditionally, CCPT courses have not trained therapists in the significance of, or sensitivity of awareness to, these first two levels of play. In addition, the CCPT focus is not on the rhythmical and vital basics of playful nonverbal communication. Bringing Rhythmic Relating into CCPT with autistic children may facilitate a bridge from nonverbal, nonsymbolic play forms through to the more traditional CCPT realms of symbolic play. Rhythmic Relating offers an approach that supports shared social timing and co-regulation. The CCPT framework can then allow those co-regulatory experiences to flourish therapeutically.

2 | METHOD

The present single-N study uses the Emotion Regulation Checklist (ERC; Shields & Cicchetti, 1997) to assess and detail the ER progress of an autistic boy, pseudonym Reuben, over the course of his weekly therapy sessions (CCPT and Rhythmic Relating).

2.1 | Participant

At 4 years, 10 months, Reuben was diagnosed in the UK with autism spectrum disorder (ASD; Level 1—*requiring support*, DSM-V: American Psychiatric Association, 2013). Reuben was assessed with the Wechsler Preschool and Primary Scale of Intelligence (WPPSI-IV), receiving a standard score FSIQ of 93 which falls in the average (age-appropriate) range, suggesting no cognitive impairment. Reuben was assessed as being at the *Language Partner Stage* using the Social Communication Emotional Regulation Transactional Support Framework (SCERTS; Prizant et al., 2006). In addition, at the time of writing, Reuben is being assessed with regard to pathological demand avoidance (PDA), a classification his parents, education staff and other professionals all agree is accurate.

Reuben was 5 years, 8 months at the start of his therapy. Throughout his sessions, Reuben received *no other psychological or behavioural therapies* (for definition, see footnote 5 below). He was attending a mainstream education placement with some (nonspecialist) learning support.

2.2 | Procedure

Reuben received integrated *CCPT and Rhythmic Relating* for 25 weekly sessions.[3] Reuben's mother was asked to complete the ERC once each week for 6 weeks prior to therapy (mean score = baseline), then once per week and every week of therapy. In accordance with the present study design, the standard ERC parent instructions were altered to read: "For this *current* week, please circle how often this child exhibits the following behaviours or emotional states…" Simultaneously, and blind to the parent-related ERC results, the play therapist kept detailed date-stamped clinical notes for each therapy session.

Written parental consent was received in advance for all aspects of the study (the therapy protocol, data gathering and anonymised reporting). In reporting here, all potentially identifiable details have been removed or anonymised (including all reported excerpts from the therapist's clinical notes). The play therapist is fully accredited and registered with the British Association of Play Therapists (BAPT), and all therapy content was undertaken in alignment with the BAPT code of ethics and good practice.

2.3 | Emotion Regulation Checklist

The ERC is a 24-item parent-report measure with two subscales (Shields & Cicchetti, 1997). The *Emotion Regulation subscale* (ERC-ER) assesses children's overall mood, their ability to label and express emotions and their ability to display appropriate emotions in positive and negative social situations. Higher scores on the ERC-ER represent higher levels of positive Emotion Regulation. The *lability/*

Participant demographic variables	Percentage of sample, or mean (*SD*)
Age at start point (years)	6.07
Gender (male %)	100%
Cognitive functioning: Estimated FSIQ (WPPSI-III)	97.06 (11.48)
Cognitive functioning: FSIQ > 79	100%
Currently receiving any special education services	89.39%
ADOS Module 1 administered	4.55%
ADOS Module 2 administered	33.33%
ADOS Module 3 administered	62.12%
Autism characteristics (ADOS revised algorithm)	7.23 (1.79)

TABLE 1 Demographic information for comparison group, autistic boys *without* concurrent cognitive impairment, *not* receiving psychological or behavioural therapies ($N = 66$).

TABLE 2 Stability of emotion regulation for our comparison group ($N = 66$) across 10 months.

	Start point, *M* (*SD*)	Finish point, *M* (*SD*)	Paired *t* tests (start-finish)	Correlations (start-finish)
Emotion regulation (ERC-ER)	24.47 (4.07)	24.79 (3.82)	$p > 0.05$	0.789**
Lability/negativity (ERC-LN)	33.61 (6.58)	33.76 (7.51)	$p > 0.05$	0.693**
Emotion regulation checklist total score (ERC-TOT)	2.86 (0.37)	2.87 (0.42)	$p > 0.05$	0.759**

**$p < 0.001$.

negativity subscale (ERC-LN) assesses children's lack of flexibility, rapid changes and variation in mood states, dysregulation of negative affect and a tendency to behave in an overly exuberant manner. Higher scores on the ERC-LN represent higher levels of *dysregulation*. The present study employs the two-factor original structure as presented by Shields and Cicchetti (1997), as all subsequent attempts to refine the loading of factors have been shown not to produce significant improvement (Lucas-Molina et al., 2022). The ERC Total Score is also reported here. Higher scores on the ERC Total Score represent higher levels of positive Emotion Regulation.

Measures of reliability for the ERC are high (internal consistency; ERC-LN: $\alpha = 0.96$; ERC-ER: $\alpha = 0.83$), as reported by Shields and Cicchetti (1997). With a large sample of autistic children (4–8 years old), Berkovits et al. (2017) showed that internal consistencies were also acceptable: ERC-LN ($\alpha = 0.81$) and ERC-ER ($\alpha = 0.80$; initial assessment) and ERC-LN ($\alpha = 0.85$) and ERC-ER ($\alpha = 0.74$; final assessment). In that study, Berkovits et al. (2017) demonstrated significant stability in high levels of ER impairment over 10 months for autistic children ($p < 0.001$ for ERC-ER and ERC-LN).

Though the ERC was initially developed for children ages 6–12 years, it has also been used in children as young as 5 years of age (Graziano et al., 2007). In the Berkovits et al. (2017) study, which had an age range of 4–8 years, no significant age differences in scores were observed for either the ERC-ER ($p = 0.64$) or ERC-LN ($p = 0.35$) as tested via ANOVAs, suggesting that this measure can be used with this slightly younger population.

2.4 | Analysis protocol and comparison groups

The significant variable in assessing individual therapeutic progress is change-over-time. For each of the three ERC scales (ERC-ER, ERC-LN and ERC Total Score), we calculate percentage-change-over-time, *Start* to *Finish* [([F-S]/S)*100], for Reuben. We compare Reuben's scores with our *comparison group* (see below). We use percentiles (right-hand tail for ERC-ER and ERC Total Score; left-hand tail for ERC-LN) derived from comparison group data arrays of percentage-change-over-time (10 months[4]) to compare and statistically rank Reuben's results.

The basis for our comparison group is a dataset, previously published for open-access usage (Berkovits et al., 2023), concerning a cohort of autistic children in the USA and described as, "a 10-month, real-world snapshot in the lives of autistic children *not* receiving psychological or behavioural therapies[5]" ($N = 98$).[6] As Reuben is male and autistic without concurrent cognitive impairment, we have removed all girls entirely *and* all boys with FSIQ ≤ 79[7] to create our best-fit comparison group, described as, "autistic boys *without* concurrent cognitive impairment, *not* receiving psychological or behavioral therapies" ($N = 66$). Key demographic information for participants in this comparison group is recorded in Table 1.

The following descriptive statistics summarise our comparison group ERC percentage-change data[8]: (ERC-ER Percentage Change: Mean = 2.10, *SD* = 11.08, Skew = 0.57; ERC-LN Percentage Change: Mean = 1.25, *SD* = 16.88, Skew = 0.33; ERC Total Score Percentage Change: Mean = 0.55, *SD* = 10.16, Skew = 0.38).

On average, young autistic children demonstrate high levels of stability in their ER capacities over time (10 months; Berkovits et al., 2017, 2023). Table 2 reports levels of ER stability across time (10 months) for our comparison group.[9]

In alignment with previous studies (Berkovits et al., 2017, 2023), the participants in our comparison group show high levels of stability in their ER capacities over 10 months. This is significant to note here, as it suggests that *any potential improvements* demonstrated in a child's ER will be of significance.

2.5 | Graphical presentation of emotion regulation over time

In addition to presenting Reuben's ERC scores in statistical comparison with our comparison group data arrays, we present a novel method of blind-correlating Reuben's ER development over time with the play therapist's date-stamped clinical notes. Reuben's parent-rated weekly ERC Total Scores are presented as a graph. Any apparent turning points (up-turns, down-turns and plateaus) are retrospectively described by date-stamped entries in the therapist's clinical notes. We detail moments of Rhythmic Relating in our description, focussing on the largest period of growth in ER for Reuben. We also retrospectively refer to additional notes Reuben's mother provided each week (blind to the therapist) regarding significant experiences for Reuben.

3 | RESULTS

3.1 | Emotion Regulation Checklist

Table 3 summarises the significance of Reuben's therapy as described by ERC change-over-time (10 months) in comparison with our comparison group (autistic boys *without* concurrent cognitive impairment, *not* receiving psychological or behavioural therapies [$N=66$]).

Here, it is of interest to note the relative ranking of Reuben's baseline (Start) scores as placed within the Start score array of our comparison group ($N=66$). Reuben's ERC-ER Start Score = 15.833 would rank lowest within our comparison group; his ERC-LN Start Score = 47 would rank 63rd highest (n.b. higher LN scores = higher negative impact on functionality); and his ERC Total Start Score = 1.906 would rank second lowest. In short, Reuben's baseline scores were ranked at the extremes in comparison with the $N=66$ comparison group. He started in therapy from a very challenging state.[10]

As compared to our comparison group, there is a *statistically significant* chance that Reuben's improvements in the Emotion Regulation subscale (ERC-ER) were due to his therapy ($p<0.03$). Specifically, this suggests that any improvements in Reuben's overall mood, his ability to express emotions and his ability to display appropriate emotions in positive and negative situations were due to his participation in therapy.

Reuben made improvements in the lability (negativity) ERC-LN subscale. His percentage change improvement placed him within the top 15% (ERC-LN improvements) of our comparison group. This represents important progress for Reuben in terms of his ability to demonstrate regulatory flexibility, to maintain mood states and to self-regulate negative affect. However, isolated in terms of the ERC-LN subscale alone, these changes for Reuben were not statistically significant enough to indicate that the improvements were due to his therapy.

Reuben's percentage change in his ERC Total Score (the ERC overall measure of Emotion Regulation) was *statistically significant* ($p<0.04$). This suggests that Reuben's overall ER improvements were *likely* to be due to his therapy.

3.2 | Graphical presentation of emotion regulation over time

Figure 1 shows Reuben's ER progress over his time in therapy.

Reuben begins significant ER improvement from P1 to P2 (Therapy Weeks 11–15). The following content is taken from Reuben's mother's notes for the corresponding time period:

Therapy Week 11:

> Reuben nearly slipped on the stairs this week, he was able to say, 'I felt scared' rather than respond in an angry way (dysregulation) which is his normal response. He also allowed me to cuddle him when he has hurt himself.

He has been using his hands on his brother to express his upset/disagreement but has taken himself off immediately, showing remorse.

Therapy Week 14:

> Reuben has been able to verbalise when he felt scared this week!

Reuben hurt another child this week, he reacted outwardly with anger and shouting and recoiling/retreating. However, after the

TABLE 3 Reuben's ERC scores in comparison with our comparison group.

Scale	Baseline score mean (6 weekly pretherapy measures)	Final score mean (final 6 therapy week measures)	Percentage change (over 10 months)	Percentile rank	Statistical significance (p)
ERC-ER	15.833	20	26.316	97th percentile	0.03
ERC-LN	47	40.167	−14.539	15th percentile (N.B., Lower ERC-LN scores = improvement)	Not applicable
ERC total score	1.906	2.384	25.079	96th percentile	0.04

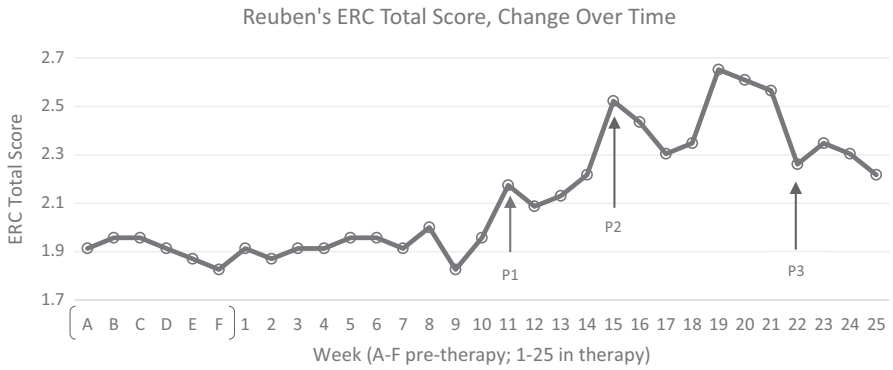

FIGURE 1 Reuben's ERC total score, change over time. Vertical axis: ERC total score, focussed (1.7–2.7) to clearly illustrate the relevant increments of change; full scale (1–4). P1–P3, discussion points.

event I was able to explain and talk to him about it and we made a gift for the other child together to let them know Reuben felt sorry/bad he had hurt them.

Therapy Week 15:

> Reuben replied 'hello' to a friend of mine when she greeted him this week. He usually remains silent when people say hello, goodbye, goodnight.
>
> Reuben made a decision this week to invite some friends from school to our house for his birthday party.
>
> He has started to say words such as 'scared' to express his feelings. E.g., I was scared, I didn't know where you were.
>
> I have noticed he has stopped saying, 'I hate you', to his Dad.

The content of Reuben's mother's notes outlines several areas of progress for Reuben, particularly in ER (to some degree in self-regulation and especially in emotional literacy).

The following content is from the play therapist's notes for *Therapy Week 10* (i.e., just previous to Reuben's ER improvements from P1 onwards). We have edited and added to this content in order to illustrate the use of Rhythmic Relating concepts (*in italics*), but the details of the basic occurrences remain accurate and unedited. Please note, for details of the Rhythmic Relating model and the concepts referred to here, see Daniel et al. (2022).

3.2.1 | Theme: Chaos and regulation

As before, today Reuben needs to start with chaos and energy release. He threw things around in a fairly chaotic manner.

Background: Previously, long periods of high-level dysregulation/chaos at the start of each session (but note: Reuben able to limit his release to nondangerous actions, able to listen to me and not throw specific breakable items). Over the last few weeks, these chaotic periods have begun to get shorter, co-regulation more effective, resulting in quicker transitions towards a calm, effective state. But we haven't yet transitioned into either shared dynamic play or language-based literal-association play (which would enable a further level of meaning, containment and self-reflection).

Reuben is throwing various figures (insects, skeletons, the dark magician, etc.) at the wall. He is punishing and banishing the things he does not like, the things that disturb him. He throws with both hands and an explosive arm release. The throw, pause, pick-up and throw again have a fairly regular rhythm. I add a *vocal activation contour* (high energy, increasing volume/timbre/pitch, "wobbly tongue" noise, with upwards inflection) leading up to the point of release. Reuben seems happy with this. He vocalises, adding, "get away," and occasionally, "freaky." I want to support Reuben to feel the power of his emotional gestures on a more personal level. Before the *activation contour*, at the point in his rhythm where he naturally vocalises, I introduce the phrase, "get away… (*add character*)… you're freaking me out" (an extension of Reuben's use of "freaky," and a phrase I know Reuben relates to). Reuben looks at me and adopts the new phrase himself.

Over many iterations of this *loop* of play, I continue with the *activation contour* (which helps shared flow and momentum and works as a tool for *vitality matching* Reuben's expressive movement). Reuben continues vocalising and throwing. As he discovers new characters, Reuben adapts his statements. He introduces "get away…, you're frightening," and "get away…, is bully" (which I adapt to the first person, "is bullying me," which Reuben quickly adopts). Reuben has also begun to regulate his throw more directly to my *vocal activation contour*. We've moved to a more socially synchronous experience and one which is owned and direct (first person) through the framing of personal language.

After 10 min of the above *loop*, Reuben is visibly calming, slowing down…

3.2.2 | Theme: Power versus vulnerability

Stage 1. Third person: Reuben starts a series of battles between various characters. To begin with, there is a giant robot (caterpillar tracks, claw hand and giant hammer hand) versus various small characters. He plays out many iterations of the *looping* battle scene

in which the robot wins. To accompany the *loop*, I add *grounding rhythm* to the movement of the robot ("cheee ka ka, cheee ka ka…" of the caterpillar tracks turning) and *turbulent* sound effects for the claw hand attack (high-pitched *vocal activation contours*—mechanical whines in upward and downward curves representing the opening and closing of the claw hand) and the giant hammer hand (*down-swoosh vocal activation contour*, "shhhhh," to land on a hammer thud with *relative acoustic startle*, a loud base-like vocal noise + I bash my hand down on the wooden toy house nearby for extra resonance). I also add vocal reflections on how the smaller characters might feel either frightened, freaked out or bullied (see previous).

Stage 2. Second person: Giant robot attacks my thumbs and fingers. I add *rhythmic supports* for the robot's movements (as above) plus add *vocal activation contours* of theatrical pain. I also add personal reflections (as me, in first-person) on how I feel frightened, freaked out, bullied…

The level of social timing increases greatly in this Stage 2 section (specifically, timed eye contact and shared emotional togetherness). Reuben does not move on to a first-person stage where, potentially, he would have felt and described his feelings personally. But, from the safe and contained third/second-person perspectives Reuben seems to be experiencing powerful emotions, travelling through them with me, surviving them and regulating back to a functionally calm state. We are co-regulating.

For the first time, Reuben now moves on to…

3.2.3 | Theme: Protection and personal power

Reuben creates a character sand tray. He places four baby tortoises in the centre. The tortoises are attacked by the giant robot. Reuben tells me they need protection. Interestingly, he reframes one of the creatures he previously threw away/banished as "freaky"—the snakes—as protectors. Six snakes come and protect the tortoises. The snakes defeat the robot, several times. We celebrate together. Reuben is very happy.

Reuben's significant ER improvement over this period remains stable. His ERC Total Scores do dip again, at P3 (corresponding exactly with his return to school after a holiday), but this is a relative dip. The basic plateau of relative ER improvement remains stable, never falling back to the pre-P1 level.

4 | DISCUSSION

This pilot intervention demonstrates the potential for *Child-Centred Play Therapy* and *Rhythmic Relating* combined to have a significant positive impact on the *Emotion Regulation* abilities of a young autistic child.[11] We propose that *Rhythmic Relating* supports the child-centred play therapist to work with the vital, rhythmical basics of playful nonverbal interaction and facilitates a bridge from nonverbal, nonsymbolic play forms through to the more traditional CCPT realms of symbolic play. In this way, *Rhythmic Relating* supports social timing in interactions between autistic and nonautistic partners, providing a basis for co-regulation which the child-centred play therapist can build on.

We suggest that the focus here, on *emotional well-being* in the lives of autistic children (beyond core diagnostic ASD criteria alone), is a valuable direction in autism research, support and intervention studies. We value *Emotion Regulation* as a central working construct and encourage its use in further autism intervention studies. The focus on well-being for autistic people is a priority aligned with the research and intervention priorities upheld by autistic community members and researchers (Pukki et al., 2022). We fully support the work of the *Global Autistic Task Force on Autism Research* (https://www.liebertpub.com/doi/10.1089/aut.2022.0017) and the Autistic Researchers Committee at the International Society for Autism Research (INSAR; https://www.autism-insar.org/page/InsarARC). We hope this priority will soon be reflected across the board in therapies offered for autistic people.

AUTHOR CONTRIBUTIONS

SD designed and implemented the study, undertook the therapeutic work and collated, analysed and presented the data. SD, LB, AE and JB generated the comparison dataset and reviewed the data analysis. All authors contributed to the article and approved the submitted version.

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ETHICS AND PATIENT CONSENT

Written parental consent was received in advance for all aspects of the study (the therapy protocol, data gathering and anonymised reporting). In reporting, all potentially identifiable details have been removed or anonymised (including all reported excerpts from the therapist's clinical notes). The play therapist is fully accredited and registered with the British Association of Play Therapists (BAPT), and all therapy content was undertaken in alignment with the BAPT code of ethics and good practice.

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ENDNOTES

[1] Here, we define regulation as the ability to attain and maintain a good-enough (appropriate) state of arousal fit for task/environment/moment.

[2] Here, we are suggesting that a *primary* route to self-regulation, especially for infants, is through physical and social co-regulation with another person. There are other routes, for instance: co-regulation with a calming animal; sensitive physical containment; taught techniques (such as breath work); rhythmical physicality, etc., all of which may serve as powerful potential supports for autistic individuals.

[3] Although defined primarily by real-world practical limitations, Reuben's treatment duration comes close to the optimal play therapy treatment durations described by two meta-analyses: 30+ sessions (Leblanc & Ritchie, 2001) and 35–40 sessions (Bratton et al., 2005).

[4] Due to foreseen holidays and unforeseen circumstances, Reuben's 25 weekly sessions spanned 36 calendar weeks, making a 10-month comparison reasonable.

[5] Our Berkovits et al. (2023) umbrella term, *psychological or behavioural therapies*, includes: "Any psychological or behavioural therapy applied in a reasonably consistent and structured manner. As such, subjects receiving the following services as reported by parents were excluded from our sample group: counselling, applied behavioural analysis (ABA), cognitive behavioural therapy (CBT), parent–child interaction therapy (PCIT), floor time, relationship development intervention (RDI) and pivotal response therapy (PRT). Most of our sample group were receiving *special education (SE) services*, and this was not considered a factor for exclusion. Accountable, under this SE label, we include in our sample group participants in receipt of occupational therapy, speech and language therapy, social skills group sessions and ongoing assistance from teaching assistants/aides trained in the basic modality of ABA but not implementing a regular therapy programme. We include in our sample group participants in receipt of sporadic psychiatric assessment and advice or who were receiving psychiatric medications, as this is representative of real-world conditions for autistic children" (ibid, p. 2).

[6] For full participant recruitment criteria, please see Berkovits et al. (2017, 2023).

[7] Our comparison group was assessed with the WPPSI-III, while Reuben was assessed with the WPPSI-IV. These two versions do differ in some of the specific tests administered, but the standard score FSIQ ranges are directly comparable (Freeman, 2021). The decision to remove all participants with FSIQ ≤79 was made to ensure as close a comparison group as possible to Reuben's presentation, as FSIQ below 70 is largely consistent with diagnoses of intellectual (U.S.) or learning (U.K.) disability, and scores 70–79 are also suggestive of impactful cognitive challenges (i.e., borderline intellectual functioning range).

[8] Five subjects were missing one item out of the 24-item ERC at just one of the two timepoints; these missing items were prorated by obtaining an average of the other algorithm items for that subscale at the same timepoint. One subject was missing two items and was therefore excluded from our sample to obtain our $N = 66$.

[9] *SD* is generated by the Excel formula, STDEVP.

[10] It is interesting to consider the possible relevance of this fact when comparing Reuben to the comparison group via percentage-change-over-time. It could be argued, as Reuben started in a relatively poor state of ER, that he had lots of room to improve and did so quickly. Conversely though, it could be argued that Reuben's ER state was highly compromised and, as such, therapy was even more of a challenge.

[11] Please note, the authors acknowledge the limitations of comparing any *one* child's circumstances and scores to a comparison group. In this study, this is helped (to some degree) by a relatively large comparison group and by the use of percentiles as opposed to *t* tests. We hope this single-N pilot shows the potential for its reported methods and positive effects and encourages others to do similar work leading to larger efficacy studies in future.

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