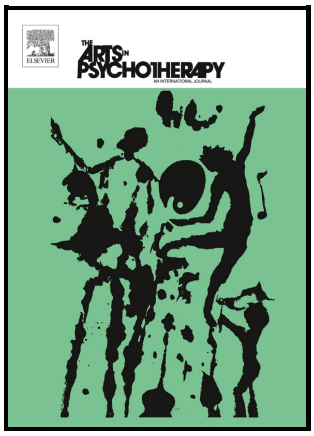
Dance Movement Psychotherapy Intervention Protocol for the Caregivers of Children on the Autism Spectrum: Development and Fidelity Evaluation



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Dance Movement Psychotherapy Intervention Protocol for the Caregivers of Children on the Autism Spectrum: Development and Fidelity Evaluation

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Abstract

Caregivers of children with autism spectrum disorder (ASD) face significant challenges as the demands of their role often surpass the resources available to them. Aiming to support the emotional and social wellbeing of caregivers, such as parents and teachers of children with ASD, a dance movement psychotherapy (DMP) intervention protocol was developed and implemented in a feasibility and process evaluation project. This article describes the development, and discusses the fidelity assessment, of the DMP intervention protocol. The fidelity assessment was conducted by calculating inter-rater reliability between three raters (therapist, researcher and external expert) on a 5-point Likert questionnaire through retrospective video analysis of the sessions. The results showed good agreement among the raters with a maximum mean difference of 0.57. High (75% and above) adherence to the protocol was noted for 11 out of 12 criteria. The article critically evaluates the strengths and challenges of conducting a fidelity assessment of an intervention protocol. The overall structure and components of all the sessions of the protocol are illustrated in line with the template for intervention description and replication (TIDieR) checklist and guidelines to offer growing opportunities for replicable DMP intervention-based studies.

Key words: Caregivers, Wellbeing, Dance Movement Psychotherapy, Protocol Development, Autism Spectrum Disorders

Background Information

Caring for a child can be rewarding but when pressures go beyond the actual resources

available, caregivers can experience distress, discomfort, stress and burnout. This is common amongst carers of children with an autism spectrum disorder (ASD) who encounter challenges particularly due to the social, communication, and behavioural patterns of children with ASD which persist throughout their lifetime (Crnic & Ross, 2017; Zeidan et al., 2022). According to the dictionary of the American Psychological Association's (APA), "caregiving involves attending to the needs of and providing assistance to someone else who is not fully independent" (APA, 2023). Although, the roles of family caregivers and caring professionals are different in terms of accountability, time and space boundaries, their caring relationship with children on the autism spectrum plays a significant part in their children's holistic development (Blok, Peetsma & Roede, 2007; Glazzard & Rose, 2019).

The literature indicates that caregiver stress and burnout are widely experienced not just by the parents, but it is also common among professionals providing compassionate services, including therapists and special educational needs (SEN) teachers (Skaalvik & Skaalvik, 2010; Benevene & Fiorilli, 2015). The key aspects such as child-related, family-related, socio-cultural and political factors associated with stress and burnout have similarities and differences between parents and SEN teachers. For example, child-related factors such as the presence of emotional and behavioural difficulties of children with ASD were found to considerably predict the distress of both parents and SEN teachers (Jones et al., 2014; Pillay, Goddard & Wilss, 2005). Contrastingly, socio-cultural factors are distinct for parents and SEN teachers. For parents, no respite care, social isolation, tabooing and bullying of children were some of the societal factors that were associated with stress (Harper et al.,2013). Whilst for SEN teachers, limited work experience, ambiguity and conflict in their role, and poor administrative support were related to their stress and burnout (Jones & Frederickson,2010; Van Droogenbroeck, Spruyt & Vanroelen, 2014). However, irrespective of the differences and similarities in the root factors associated with stress and burnout, Porter et al. (2022) argue

that all caregivers of children with ASD have common needs. Thus, with the focus on common client needs for support, the intervention protocol is broad and inclusive of family and professional caregivers of children with ASD. Therefore, in this paper the term caregivers is used in an expansive sense to include any person closely living or working with children on the autism spectrum and who is in their core circle to support their needs regularly (e.g. parents and teachers).

Terms such as caregiver syndrome or caregiver burnout are frequently used to describe the state of overtiredness, anger, temper, or guilt experienced by caregivers as a residue of unrelieved caring for highly dependent children. For instance, children with ASD present with unique social and behavioural challenges which make their caregivers more vulnerable to depression, anxiety and somatic symptoms when compared to other caregivers (Yirmiya & Shaked, 2005; Lee, 2013). Researchers have noted that caregivers with long-term stress experience burnout, characterised by emotional exhaustion, depersonalization, and reduced personal accomplishment (Kramer & Son, 2016). As a consequence of high levels of burnout, SEN teachers exhibited reduced compassion toward their students and were noted to be less tolerant and patient towards interruptions in the classroom (De Stasio et al., 2017). They also experienced more exhaustion and perceived a lack of change in the children's progress when compared with their teacher counterparts working in mainstream classrooms (Yu et al., 2022).

Parents of children with ASD and mental health difficulties have reported experiencing decreased parenting self-efficacy beliefs, guilt, withdrawal and helplessness indicating that parents are only as happy as the least happy child (Fingerman et al., 2011). Due to their physical and psychological exhaustion, caregivers face challenges not just limiting their personal lives, but that can extend to have a negative impact on their relationship with the children, dynamics with other family members, their work life and their commitment to work as well (Kristensen et al., 2005). However, resources such as social acceptance, support from

other family members, as well as psychological support and professional help and advice on how to look after children with ASD, have been reported to be critical for the emotional well-being of caregivers of children with ASD (Altiere & Von Kluge, 2009; Greeff & Van der Walt, 2010). Clearly, interventions just for the child diagnosed with ASD would not be enough. A holistic and family-oriented approach is necessary for the better management of children with ASD. Henceforth, the primary motivation of this article rests not just on children but also considers the potential of caregivers' mental health in the effective intervention strategy.

There are only a handful of studies which have employed psychological and psychotherapeutic interventions to support the caregivers of children with ASD (Blauth, 2019). A meta-analysis by Hartley, Dorstyn and Due (2019), pooling the sample from 10 mindfulness-based studies around the world with 241 caregivers, calculated large to medium positive effect size in favor of the intervention.. It has shown promising results in subjective wellbeing immediately post-intervention and also 3 months after the termination of the intervention. However, the study concluded that more controlled research studies are essential to find accurate outputs for affected families. Studies suggest that caregivers experience emotional distress and social isolation at the time of diagnosis that continues throughout the life stages of individuals with ASD (Altiere & von Kluge, 2009; Ryan & Salisbury, 2012). Although additional support for caregivers is recommended in international policies and guidelines (NICE guidelines UK, 2020), the main focus tends to be on the need for the psychoeducation of the caregivers, respite care, short breaks and advice on welfare benefits. Very little focus is given to interventions addressing the social and emotional wellbeing of caregivers.

Dance Movement Psychotherapy (DMP) is the use of creative movements of the body as a tool to express and communicate during a relational therapeutic process between client/s and therapist (ADMP UK, 2021). Although the use of dance for its therapeutic benefits is not novel, research in DMP has been gaining momentum only in the last two decades (Bryl &

Goodill, 2020). Promising results and the effectiveness of DMP have been reported in recent systematic reviews for various client populations. For example, Martin et al., (2018) synthesised six studies on the use of dance and DMP for stress management and found that DMP helped to significantly reduce stress signs or stress coping. Karkou et al., (2019) and Koch et al., (2019) conducted meta-analyses and found DMP to be effective in treating depression and various other health outcomes. However, these systematic reviews have recognised the methodological shortcomings of many included studies that limited drawing confident inferences. One of the major reasons was poor reporting of the intervention details and heterogeneity among the studies which restricted the replication of the studies. Therefore, a comprehensive picture of the process of development of a DMP intervention protocol for caregivers of children with ASD is provided here with an intention to enhance the replicability, the quality of research and the intervention.

Arts therapies research and practice with families of children with ASD have voiced a common theme of 'backing the backbones' (Aithal et al., 2019) and have used partnership models such as family-centred practice (Dunst & Trivette, 2009). An Australian music therapist and researcher, Thompson (2023) proposes a continuum model of support when working with caregivers of children with ASD. This model consists of three lenses: an expert lens where the therapist works directly with the caregivers to meet their wellbeing needs; a coaching lens where caregivers take part in the music therapy sessions to learn and implement strategies in their home or community and finally a partnership lens where the therapists and caregivers collaborate to share expertise to further promote the development of children with ASD. Consistent with the first two lenses many studies in arts therapies have reported perceived benefits for promoting resilience, wellbeing, self efficacy, reducing stress and depression in caregivers of children with ASD (Champange & McDonald 2020, Aithal, 2020; Lee et al., 2021). A pilot study conducted in Canada with five parents of children with ASD suggests that

the participants benefited from receiving social support, learning to be mindful of their bodies and experiencing fun through the group dance movement therapy process (Champange and McDonald 2020). Nevertheless, these are all small scale studies conducted using different approaches in different parts of the globe with huge variability within the samples. Thus, offer limited scope to tailor the intervention to the specific needs of the population and generalise the results.

The new framework for developing and evaluating complex intervention, commissioned jointly by the Medical Research Council and the National Institute for Health Research, identifies the importance of a detailed and thorough process evaluation, feasibility, acceptability testing and refining the intervention prior to the measurement of effectiveness (Skivington, et al., 2021). Taking these guidelines and recent advances in theory and methods in the field of DMP, the current article aims to describe the development of a DMP intervention protocol for maximising the efficiency, usage, and impact of larger research projects in the future. The article presents how theoretical, empirical and practice-based knowledge are integrated to develop this protocol. Furthermore, this study aims to evaluate the strengths and challenges of adhering to the protocol during the implementation of the intervention protocol to support real world decision making.

The overall process of protocol development

As shown in Figure 1, the process involved four distinct phases. The first phase gathered the theoretical and conceptual framework to the protocol from three major sources. Phase I informed the next phase (II) that involved developing the actual intervention protocol. The Phase III was the pilot intervention and outcome evaluation which was video recorded. The final Phase IV was the retrospective video analysis for the fidelity assessment and reflecting upon ways to refine the intervention protocol for future use.

Phase I- Conceptual foundation

The theoretical review of the needs of caregivers of children with ASD and the key findings that emerged from the preliminary small-scale study conducted in India (Aithal et al., 2019; Aithal, Karkou & Kuppusamy, 2020) laid the conceptual foundation to the protocol. The second source was the findings of ongoing parallel project 'Arts for the Blues', an integrative arts therapies model for depression (Parsons et al., 2019; Haslam et al., 2019) further informed the therapeutic principles of the protocol. The systematic review on depression by Karkou et al., (2019) was also utilised to identify the useful structure, dosage and techniques of DMP as the association between caregiver burden and caregiver depressive symptoms are well established (e.g., del-Pino-Casado et al., 2019). In addition to these resources, there were influences on the structure of the session from the clinical expertise of the research team and the therapists involved in this project. This protocol was metaphorically inspired by the function of windmills. Caregivers were compared to the 'windmills' who generate the energy needed for the healthy development of their children. Sometimes, and for several reasons, the windmills may face challenges preventing them from functioning efficiently. Hence, the protocol intended to use DMP to enhance factors that determine the effective functioning of parents and other caregivers, such as teachers, when the direction of the wind is unfavourable.

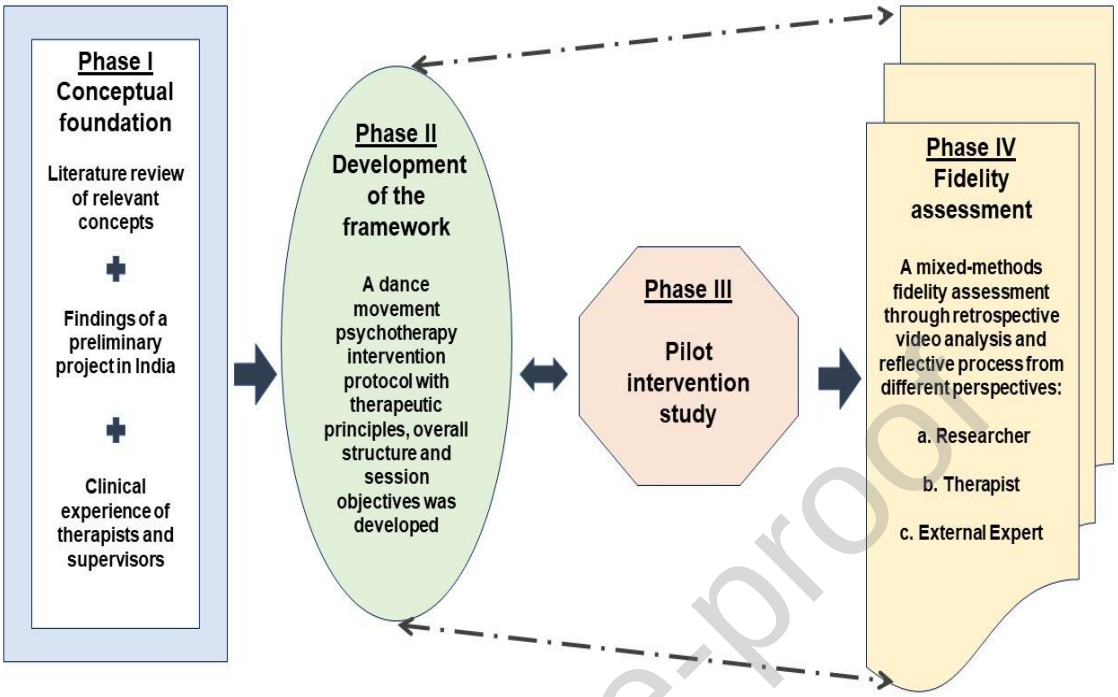

Figure 1. Development and fidelity assessment process of the DMP intervention protocol for caregivers of children with ASD

Phase II- Development of the framework

As shown in Figure 2 the sessions were designed at three levels for fidelity and replication functions using the template for intervention description and replication (TIDieR) guidelines (Hoffmann et al., 2014). The grounding layer of the intervention protocol used the theoretical principles to act as the binding thread and grounding point to the whole therapeutic processes. These principles (described below) hovered as the common arch of important factors for the therapist to consider when offering support to the caregivers across all the sessions.

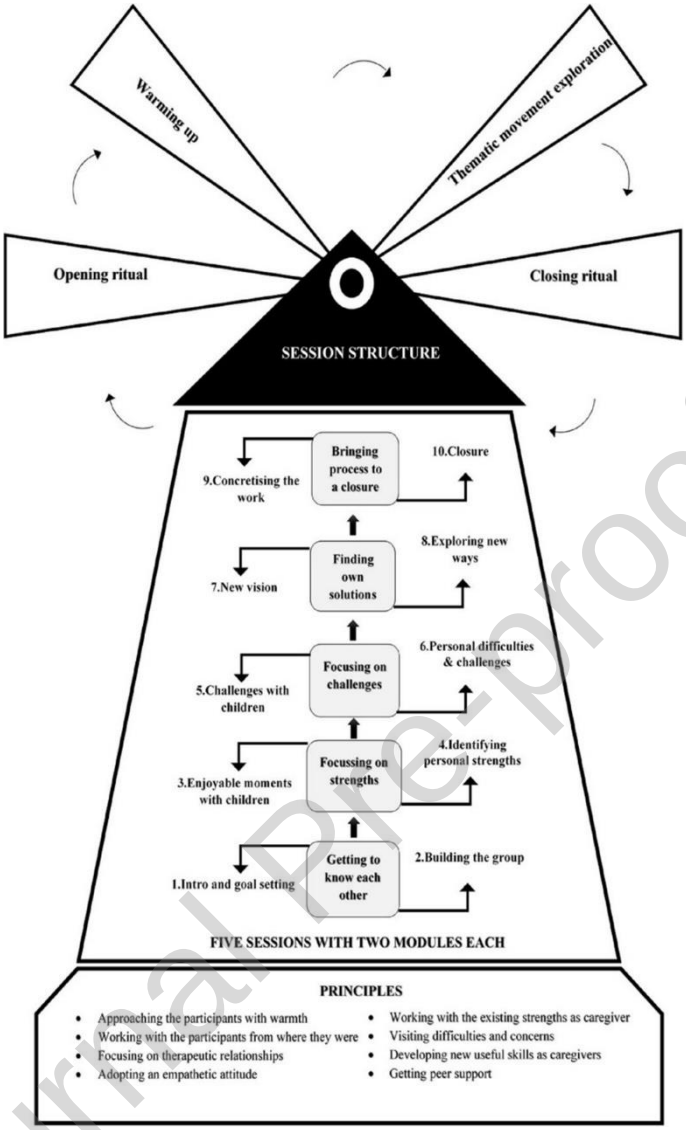

Figure 2. Description of the Protocol

Principles

The intervention design was informed by the following seven key principles that formed the core of the intervention protocol. The first three principles described here are common therapeutic factors that are fundamental to most psychotherapy approaches (De Witte et al., 2021). The next four principles are more specific to the needs of caregivers that were identified previous research.

Approaching the participants with warmth: The intentions here were to provide a safe environment and approach the participants with warmth so that they could express themselves freely. This principle was considered as the participants of the preliminary study in India identified the importance of the therapeutic environment and the participants highlighted feeling safe and comfortable as one of the influencing factors to express themselves (Aithal, Karkou & Kuppusamy, 2020). They also reported that warm and welcoming environment eased them to be child-like, to dance without being shy and to share their emotions in a trusting atmosphere. *Working with the participants from where they are:* This principle aimed at the therapist meeting the participants by adapting themself to reach the level of the participants (Karkou & Sanderson, 2006). The starting point was the place where the participants were at psychologically and physically. The therapist would facilitate the therapeutic process without leading or directing the content as Parsons et al (2019) noted working with the 'now' would allow the participants to start with their present capacities and needs.

Focusing on therapeutic relationships: Building a trusting and empathic therapeutic alliance was identified to be fundamental to therapeutic change across most of the psychotherapy approaches (De Witte et al., 2021). Therapists were encouraged to emphatically attune with the needs of the group and regulate different dynamics, challenges and borders as appropriate to promote the overall development of the group. This decision was made because the participants of the preliminary study in India, agreed that the bonding or kinaesthetic empathy as the pivotal factor that enabled diverse therapeutic effects of DMP. The participants reported that they felt a deep sense of 'satisfaction, solace and pleasure' when they sensed the connection (Aithal, Karkou & Kuppusamy, 2020).

Working with the existing strengths as caregivers: Participants of the preliminary study in India reported that while engaging in movement and creative tasks, they were often amazed to find

out their actual capacity and problem-solving abilities (Aithal, Karkou & Kuppusamy, 2020). It was learnt that people might need to be reassured of their self-efficacy beliefs. Furthermore, key themes related to the stages of the journey of the participants from the same study, showed that at the early phase of the participant's journey, unexpressed and hidden unpleasant memories were triggered. This was highly challenging to contain and hold the space at the very beginning for the DMP sessions. Hence, it was decided that with this group we would work towards identifying the existing strengths first so that they could use their resources to face and resolve their challenges and concerns (Leamy et al., 2011; McCaffrey et al., 2018).

Visiting difficulties and concerns: As reported by Karkou et al (2019) and Parsons et al (2019), the intention ofthis principle was to support the caregivers to identify the roots of the challenges by unearthing past experiences and concerns. . It was considered vital to offer space for self-reflection and revisiting impactful life events, long-term patterns in coping and attachments in the past in order to understanding who they are now. In our previous work in India (Aithal, Karkou & Kuppusamy, 2020), participants shared that getting 'me time' was challenging and attending DMP sessions gave them time to process significant events.

Developing new useful skills as caregivers: This principle encouraged the caregivers to develop new skills for positive adaptation, healthy coping mechanisms and behavioural patterns. Participants from the Indian study had described that DMP supported them to recognise some of their own misconceptions and reasons for guilt (Aithal, Karkou & Kuppusamy, 2020). It also helped them to develop new skills, their own ways for positive adaptation, beliefs and behavioural patterns. This is similar to the coaching lens that Thompson (2023) discusses in the continuum model of support for caregivers. In this protocol, it was anticipated that the new skills would not just be limited only to the caregivers, but also learn some relational skills that they could pass on to their children and family.

Offering peer support: Receiving the support from the group members was seen as a critical component of this group therapy intervention model (Yalom,1966). The sessions were planned to offer space for the caregivers to experience a genuine connection with other participants and to encourage self-identification, acceptance and validation at mind and bodily level. Other DMP studies with this client group also have shown that informal social support to caregivers brings positive results in them and children (Aithal, Karkou & Kuppusamy, 2020; Champange & McDonald 2020). Hence, facilitating peer support was as incorporated as one of the principles.

The next two aspects of the protocol were the structure of each session and the overall intervention with finer details of the individual session which are described below:

Structure of the intervention and sessions

The intervention lasted for five sessions (10 modules) with a frequency of one session of 90 minutes every week. Initially, it was planned as 10 separate sessions. However, due to time restraints and the participants' difficulty to commit, the number of sessions was reduced to five; but the duration of each session was doubled from what was initially planned. In this way, we were able to deliver our full plan and reduce the number of visits made by the participants.

Each session encompassed four distinct segments that related to the objectives and sometimes they overlapped with each other. The first section was an *opening ritual***:** This part served to make the shift from outside life towards the therapy session by connecting to the participant's narratives and drawing their attention towards the movement session. Groups were invited to identify ways to 'arrive' and create a movement group signature to meet and greet each other.

The next section was the *warm up*. It aimed to enable interaction between participants and also draw their attention towards their bodies. The participants were invited to provide a movement response on how they were feeling at that moment and start movements from where they were emotionally and physically. In this section the therapist facilitated the creative exploration of movements and encouraging them to move by listening to their bodies.

The main section included *semi-structured movement exploration*: Depending on the aim of the session, these movement activities were organised according to well-known structures for dance and movement activities. Different techniques were employed to encourage movement activities without any pre-set structure or content. Usually they were characterised by an open-ended structure in which movement themes unfolded. Starting points for improvisations were found in the use of props or in the variation of movement actions. The participants' movement actions form the basis for movement exploration. The therapist approached these movements as dance materials and examined them for their kinaesthetic qualities.

The final section was the *closing ritual.* During this part, participants were encouraged to find a pause or close to the exploration of movement themes and to make the transition to everyday life. Space was opened for verbal reflections on movement experiences, thoughts or feelings that may have been brought up by the group and what participants wanted to take away from the session and implement in their week until we meet next time. The participants were invited to offer a movement response expressing how they were feeling at the end of the session.

The themes, session objectives and progression order of the modules were set out as shown in Figure 2. The broad features of the therapy package ranged widely from group work to focus on self with session objectives ranging from enhancing their strengths to working on past experiences and challenges of their life. Each session was tailored to what the participants brought to the group. Hence, these are just indicative elements and the sessions were not meant

to be mere 'activity-based'. The emphasis was on therapist being attuned to the group and being in-the-moment. There was no one right way of holding these sessions as long as the seven principles were met in the following sessions.

Session 1

The first session aimed at establishing safety and ground rules through a clear explanation of process. The session also offered playful, mindful and movement-based ice-breakers to connect with each other. Using trust-building group exercises and ice-breaking activities such as offering a silly dance or movement, creating a human knot, movement greetings with unconventional gestures, two truths and a lie non-verbally, creating body rhythms, passing the leadership to lead the movements while the rest of the group echoed them. The sessions intended to allow the participants to get to know each other and to work towards fostering a warm and secure therapeutic environment. This session also aimed at explaining confidentiality and encouraging the participants to set up an intention identifying what they wanted to get out of the sessions. This session was considered foundational, or primary, to further the therapeutic process.

Session 2

The second session was all about exploring the inner self to identify personal strengths and enjoyable moments with children. It was intended to invite the participants to be mindful and aware of their internal and external contextual resources and strengths. These objectives were supported by the findings of the preliminary study (Aithal, Karkou & Kuppusamy, 2020) where the participants reported that DMP enabled them to recognise several personal and external resources such as child-related, family-related, socio-cultural and political factors which supported their wellbeing.

Mirroring was one of the key approaches introduced in this session. The participants were

encouraged to pick up movements and (mutually) expand movement qualities of an individual (Carr & Winkielman, 2014). It is argued that while mirroring multiple systems of the individual such as personal attentiveness, interpersonal engagement, and environmental awareness (e.g., connection to self, connection to others, and connection to the environment) are active (Koch & Kercher, 2023). The participants largely worked in pairs. Newspapers, colourful papers and various textures of papers were used for movement exploration. The participants were invited to move the papers by projecting their strengths and happy moments on to it and move the paper accordingly. Their partners mirrored the movement of the paper and later discussed the impressions left on the paper and their reflection of moving and following.

Session 3

In the third session, participants were invited to notice any personal difficulties, internal conflicts and challenging aspects of being a caregiver that they were carrying in their bodies. They were encouraged to confront challenges creatively and get to the root. Contemplating internal (self) and external (other) events, interactions, patterns and attachments in the present were found to be helpful in the literature review of the Arts for the Blues model (Parsons et al., 2019; Haslam et al., 2019). In the preliminary study, the outburst and unmasking themes were vital stages for the transformation of the participants (Aithal, Karkou & Kuppusamy, 2020).

The session was mostly focused on individual movement explorations and then sharing the experience in pairs. Participants were invited to blow their perceived challenges into the balloon and explore different ways of moving with the balloon based on their internal drive. They were then invited to work in pairs, share and then discuss the strategies they used to move with the balloon or away from the balloon. They were given open options as to what they wanted to do with their balloons (that were full of 'challenges') at the end of the movement explorations and as a group we discussed different coping styles including problem-focused

emotion-focused coping.

Session 4

The fourth session gave the participants opportunities to experiment with thoughts and actions to tackle the challenges faced by the caregivers, while at the same time recollecting the strengths they had identified earlier in the journey. They were encouraged to find alternatives to their usual patterns of movement, and thus to experiment with different ways of being and a new vision for how to use their capabilities moving forward. This session aimed to link up their past and future with the present. Arts for the Blues identifies this theme as 'experimenting with different ways of being' (Parsons et al., 2019; Haslam et al., 2019).

Participants were offered a range of props (such as ribbons, pom pom, balls, bean bags, balloons, scarfs, parachutes, bubbles, sticks, noise making objects, etc.) to symbolically create their own obstacle course. They found different ways of travelling across the obstacle course and later shared their journey with others. The group later talked about their experiences and of sharing their own obstacle course journey with others as well as any insights gained from being part of the other group members' journeys. The group reflected on the different strategies used by the participants to get through the obstacle course from a movement perspective.

Session 5

In the final session, the emphasis was on recognising and celebrating the work done in the previous sessions, and on encouraging the participants to integrate these insights back into their own lives. It aimed to concretise the creative and abstract exploration into a self-narrative by identifying values and future implications for their overall wellbeing. We also aimed to create a short choreography of their journey by combining the different parts. .

Flash cards with abstract images were used as the starting point for creating these movement narratives. In addition, a wide range of props were offered to generate movement structures. A

six-part story approach (Dent-Brown, 2011) was adopted to a movement session to support the structuring of the movement narrative. The participants had space and opportunities to recall, refine and reproduce their own journey, while being witnessed by the rest of the group members. Small sections of everyone's choreographies were exchanged to create a final group dance.

The therapist

The therapist was a female practitioner, qualified dance movement psychotherapist registered with the Association for Dance Movement Psychotherapy, UK (ADMP UK) with experience of working with children and adults. Prior to the commencement of the sessions, she received training on the particular protocol. She was encouraged to be flexible, creative and intuitive, using her clinical judgement, while adhering to the principles and structure of the protocol. Sessions were clinically supervised by the director of this study and a qualified clinical supervisor.

Phase III- Pilot intervention study

This phase involved the evaluation of the preliminary outcomes, feasibility and acceptability of the intervention using a mixed-methods pilot randomised trial. Thirty seven participants including parents and teachers were recruited to this DMP intervention (N=20) and a control condition (N=17) from two SEN settings in the North West of England. The intervention was delivered across four groups of caregivers with 4-6 participants in each. Two groups of parents and two groups of SEN teachers took part in separate groups to avoid dual relationships and maintain professional boundaries. The control groups followed their usual routine and did not receive any additional support and only the fidelity assessment was conducted only for the DMP intervention. The findings of this phase along with the reports on feasibility and

acceptability are presented as separate publications (Aithal et al., 2021 a &b).

Phase IV – Fidelity Assessment

The intervention protocol aimed to be consistent across all four clusters of participants to allow for further replication of the study and fidelity assessment while still providing space and flexibility to meet the needs of the participants. Adherence to the protocol was assessed through inter-rater reliability analysis of the retrospective video ratings and annotations of what was observed as evidence of adhering to the protocol in the videos.

Ratings questionnaire

An assessment of the adherence to the DMP intervention protocol was carried out through online questionnaires completed by three raters (Appendix I). The questionnaire consisted of 12 questions covering five different aspects of adherence to: the therapeutic principles; the provision of DMP session objectives; the structure and progression of therapy through four sections; the use of appropriate tools/props; the consistent use of appropriate language for instructions in-line with the principles (verbal and non-verbal).

The questions were rated on a five-point rating scale from 0-4 where 0 indicated no evidence and 4 indicated strong evidence was available to show that the sessions adhered to the respective aspect covered by the questions. The raters were encouraged to add their remarks and provide any additional information or observations from the videos as evidence to support their subjective perception of evidence that the principles and other criteria were followed as per the protocol.

Raters

There are many ways of quantification and measurement of intervention fidelity that commonly include self-report of the interventionist, direct or indirect observation from different

perspectives (Sheridan et al., 2009). With each perspective bringing different strengths and limitations render insufficient on their own to evaluate intervention fidelity. Hence, the adherence of the sessions to this DMP intervention protocol was assessed from multiple perspectives:

Rater A - The dance movement psychotherapist who facilitated sessions and played a key role to tailor the sessions to meet the needs of the group. Being reflective practitioners this self-reported perspective had many benefits including gaining clarity if it was or was not feasible to adhere to what was agreed between therapist and researcher in real time. As Sheridan et al., (2009) suggest, it was also cost, time and resource effective due to the simplicity of the procedure.

Rater B- The researcher who designed and developed the protocol and participated in each of the DMP sessions as a co-facilitator. She participated in the sessions to collect qualitative and arts-based data but was not involved in the actual facilitation of the intervention and had limited leadership function in the sessions. This perspective offered understanding on how well the vision of the researcher was implemented.

Rater C- The second researcher was a qualified play therapist and an expert in the arts therapies research with experience in conducting similar arts therapies interventions and developing intervention protocol. Rater C functioned purely as an external observer to the current DMP protocol's fidelity assessment since, unlike rater A and B, she was not involved in the planning or execution of the intervention programme.

Procedure

The raters were asked to watch the video clips of the DMP sessions with all four groups and evaluate whether the sessions adhered to the protocol. It was highlighted that the rating was not to evaluate the therapist's skills, but to rate the way the sessions were shaped against the

protocol. Because of the extensive number of hours of video, not all the sessions were reviewed. In order for an equal distribution of video samples across the full intervention programme, complete videos from Sessions 2 and 4 were considered. The video footage was around 60-70 minutes for each session. Each rater reviewed a total of 280 minutes video and responded to twelve questions, for two different sessions (i.e. 2 and 4) for each of the four different groups (2 groups of teachers and 2 group of parents) that took part in the DMP intervention. A total of approximately 8 hours viewing of Sessions 2 and 4 of four groups produced a total of 96 different observation points for each rater.

Analysis

The percentage of adherence for each question in the questionnaire was calculated by summing up the ratings of all three raters across the sessions and dividing the obtained score by the maximum score. Therefore, the maximum scores across the sessions and raters for each question in was 96 which indicated absolute adherence. A cut off value of 75% and above was considered as an indication for good adherence. In addition, the agreement between different data points assessed by three different raters were analysed using the Bland-Altman plot system (Altman & Bland, 1983). This system enables us to quantify the bias and the range of agreement within which 95% of the differences between one measurement and the other are included (Giavarina, 2015). This is created by plotting the differences between value pairs (in this case differences between raters) on the vertical axis against the averages of each pair value on the horizontal axis. Limits of agreement are also constructed on the Bland-Altman plot. These are calculated using the formula $\bar{d} - 1.96s$ for the lower limit and $\bar{d} + 1.96s$ for the upper limit. Here, $\bar{d}$ refers to the difference in ratings between the two raters, and is the standard deviation of these differences. The upper and lower limits of agreement represent where 95% of differences between raters fall. A mean of zero indicates no difference in ratings between raters.

The gap between zero and the mean difference ($\bar{d}$) between raters indicates where the bias in our measurements lie. The Bland-Altman plot does not tell us whether one measurement is better than the other or whether the difference between raters is significant, rather a clinical judgement is made as to whether to use one measure (or rater) versus the other. A one sample t-test can, however, be performed on the difference values between raters to determine whether the difference is significant from zero, i.e., no difference. Mean differences $\bar{d}$ between raters, along with their standard deviation (s) and lower and upper limits of agreement, were calculated to determine agreement between Raters A and B (A – B), Raters B and C (B – C) as well as Raters A and C (A – C) for the children's sessions and the adult's sessions.

Results of fidelity assessment

All the questions in both questionnaires except for question 9 (meeting the objectives of the session) in the caregivers' questionnaire had 75% and above adherence. The ratings of question 9 on meeting the objectives of the session showed 66.66% adherence, which was the lowest of all. Question 2 (starting from where the participants were) was rated the highest with 92.7% adherence.

Mean differences $\bar{d}$ between raters, along with their standard deviation (s) and lower and upper limits of agreement, used to determine agreement between Raters A and B (A – B), Raters B and C (B – C) as well as Raters A and C (A – C) are shown in Table 1. Bland-Altman plots were created for each of these comparisons and can be seen in Figure 3.

[Insert Table 1 here]

For ratings of adherence to the therapeutic protocol, rater B appears to be scoring higher

than rater A (mean difference = 0.56) and rater C (as reflected in the negative B – C score of -0.57). In contrast, almost no difference in mean ratings score is found between raters A and C (mean difference = -0.01). This is backed up with results from the one-sample t-test which show no significant difference between raters A – C (P=0.9), while the differences in ratings was significant for B – C (P<0.001) and A – C (P<0.001).

The standard deviations (s) and therefore the range of differences in each rater pair (shown in Table 1) is very similar, with s ranging from 0.82 to 1.01. The mean difference between raters (thick black line) along with the upper and lower limits of agreement (dotted lines) are shown in the Bland-Altman plots in Figure 3.

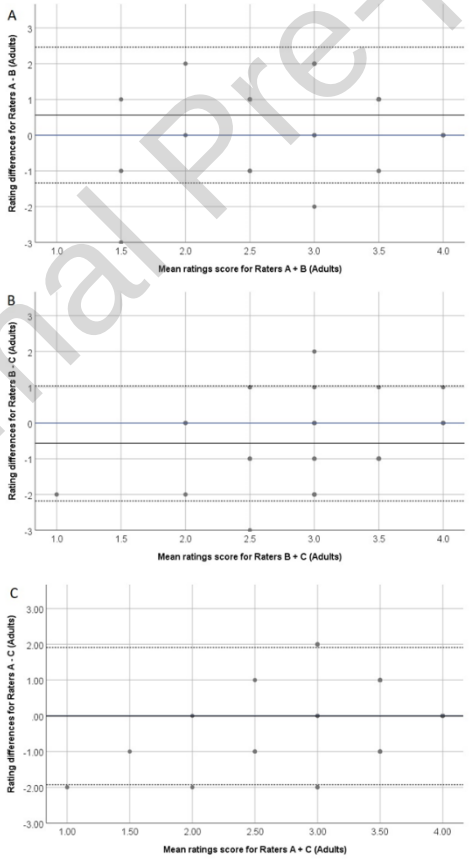

Figure 3. Bland-Altman plots showing the mean difference between raters (thick black line) along with the upper and lower limits of agreement (dotted lines) for adult's sessions. The difference between rater pairs is plotted against the mean score for the pairings, A – B (graph

A), B – C (graph B) and A – C (graph C).

Discussion on fidelity assessment

The study aimed to develop a DMP intervention protocol for caregivers of children with ASD Having considered both the advantages and disadvantages of manualised and non-manualised approaches, this protocol intended to implement a *flexibility within fidelity principle* which speaks to individualization within an intervention protocol (Kendall et al., 2008). Furthermore, a fidelity assessment was conducted as a fundamental part of process evaluation. The purpose was to determine the degree to which the intervention was delivered as intended (Breitenstein, Robbins & Cowell, 2012) from three different perspectives. There is substantial evidence to indicate that the caregivers' protocol was adhered to most of the time with 75% and more accuracy. From the statistical analysis of the inter-rater agreement there appears to be an agreement between raters with a maximum mean difference of 0.57. Note, however, that even this mean difference of 0.57 equates to approximately half a point on the ratings scale, indicating a very small overall difference between raters. The results show that rater A (the dance movement psychotherapist) appears to be in complete agreement with rater C (the external expert). The assessment findings demonstrate that the intervention protocol allowed for building a therapeutic relationship, adhered to a structure and at the same time held space for being creative and intuitive in the process. Thus, the protocol provides room for consistency and creativity simultaneously to address the unique needs of the participants.

The questionnaire using the Likert scale provided inputs on the fidelity from multiple lenses by demonstrating inter-rater reliability and providing the attitudes of respondents (Gwet, 2014). It can be understood from these findings that subjective observations and judgements from three different focal points on adherence of the DMP sessions to the protocol are mostly in consensus with each other especially the rater A and C (Chesterton et al., 2007; Gwet, 2014).

However, the differences in the opinion are occurring based on how each of the principles is perceived and the role of the rater in the assessment process. To elaborate, unlike the external rater the view of the therapist is not just dependent on the video footage as she carries her embodied experience and contextual memories. The therapist's opinion would cover her memories that preceded and proceeded from the events captured in the video frame. There is also a possibility that sometimes therapists might take a critical stance or a defensive stance about their actions. Furthermore, the position of the researcher was important as it provided the embodied preview of the actual sessions as well as a certain amount of distance from the participants (Raush &Williams, 1969). So, corroborating the views of the therapist with an external with fairly unbiased position and the researcher who can switch between the positions has enriched the dimensions of the adherence rating scale. It is not the question of who is in the best position to offer a judgement but rather all three viewpoints are important. Hence, multiple perspectives were valued in a non-hierarchical manner. If the agreement of the views among the raters were closer, it can be implied that the conceptualisation of the protocol and its execution are aligned with each other to provide replicable and consistent intervention. Thus, the consensus in the opinions from multiple stand points can reflect solidarity and integrity of the protocol and its execution.

The use of video for reviewing has been advantageous: it has been possible to view the clips multiple times and code them reliably (Waltz et al., 1993). The use of video clips has seldom been used in studies to assess fidelity (e.g. O'Malley et al., 1988). However, Bryl and Goodill (2020) have recommended, considering the complexity of the intervention process and the newness of intervention protocols in the field of DMP, that adherence checks should happen no less than every other session . As a result, the current assessment has non-randomly selected video clips of every alternative session. This also helped with regards to the principles of the protocol, as it was useful to notice that it was difficult for principles to be followed consistently.

Some principles were dominant in certain sessions depending on the objective of the session. For instance, the principle on visiting challenges was mainly explored in the third session. As the videos reviewed were session two and four, this might be one of the reasons for disparity in the raters' opinions. Hence, revisions in the principles section could look at retaining only those principles which can be consistently applied across all sessions; specific session goals could be moved to a category of objectives (Noar, Benac &Harris, 2007). Additionally, this study only reviewed the Sessions 2 and 4 (i.e early v/s later sessions in the entire programme). However, in the future, within session variability (i.e early in the sessions themselves v/s middle or late in the session) in adherence could also offer more meaningful insights to refine the intervention protocol.

The raters, being researchers familiar with the procedure and DMP intervention, were also in a good position to assess the adherence of the intervention protocol. However, this demanded several hours of volunteer work from the therapist and external rater. While acknowledging the good will of the raters in this study, it is recommended that future funding applications include fidelity assessment hours. In future studies, the fidelity assessment questionnaire could also include rating scales for the therapist's competence and the participant's satisfaction (Webb, DeRubeis & Barber, 2010). Here, competence is not meant in terms of qualifications but rather factors such emotional availability, physical health and other variables impacting the therapist's performance during any particular session. This could document how well the therapist was able to provide of themself on a particular day, considering circumstantial pressures and their impact on the outcome of the study. In addition,

One of the limitations of this article is that the differences and similarities in adhering to the intervention protocol while working with SEN teachers and parents were not explored. The therapist reported that therapeutic relationship with one of the teachers' clusters felt stronger in comparison with the other three clusters and the researcher noted that some of the

participants appeared insulated and expressed some resistance to connect more than others. As noted in the earlier in the literature review, the variances in the factors impacting the stress and burnout of SEN teachers and parents may have some implications to the delivery of the intervention and meet the specific needs of the groups. However, the participant's feedback on the feasibility, acceptability and amendments of this intervention protocol are documented separately in detail (Aithal, 2020). As recommended by Sheridan et al., (2009) to increase the impact of fidelity assessments, documentation of confounding variables, nonspecific effects (e.g., expectancy, placebo effects); and evaluation control conditions are also important. All of these limitations discussed above are valuable aspects of fidelity to be included in future research.

Conclusions

Overall, the intervention protocol was developed in a long and extensive process that involved multiple steps and operations, from initial idea, theory building, piloting the intervention, reviewing and integrating the reviews to feed forward. The fidelity assessment also demonstrates the transferability of this intervention protocol to a larger context. At the time of the study, there were no published DMP intervention protocols for the caregivers of children with ASD. This protocol will be useful for larger multi-centred studies with different therapists. It could also aid funding applications and we can enhance our understanding of intervention effects. The protocol could further incorporate elements on cultural competency, sensitivity and credibility. By developing a training manual, this could be passed on to therapists working with this population for real world utility and taken forward to clinical practice.

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Author Contributions

SA was responsible for planning, organizing, analysing and writing up the current paper. It was conducted as a part of her doctoral thesis.

VK guided the process of protocol development and provided corrections for this chapter as the director of studies for the thesis.

JP was one of the supervisors involved in conducting the statistical analysis. She also helped in the revisions and edits of this article.

ZM and AP contributed to the fidelity evaluation, revisions and edits of this article.

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Conflict of interest statement

Nil

Table 1. Mean differences $\bar{d}$ between rater pairs (i.e. A – B, B – C and A – C), their standard deviation (s) and lower and upper limits of agreement for caregivers' sessions.

	Mean difference	*Standard deviation of* $\bar{d}$	*Limits of agreement*		*One sample t-test*	
	$\bar{d}$	S	$\bar{d} - 1.96s$	$\bar{d} + 1.96s$	*t*-score	*P*-value
A – B	0.56	0.97	-1.34	2.46	5.674	<0.001*
B – C	-0.57	0.82	-2.18	1.04	-6.867	<0.001*
A – C	-0.01	0.98	-1.93	1.91	-0.104	0.9

Appendix I

Dance Movement Psychotherapy Adherence Scale (DMP-AS) - *Caregivers*

1. THERAPEUTIC PRINCIPLES

a. Is there evidence that an appropriate therapeutic environment was created with warmth?

0- No evidence
1- Limited evidence
2- Unclear evidence
3- Clear evidence
4- Strong evidence

Any observations with the video time frame, comments or reflections ……

b. Is there evidence that sessions approached the participants from where they were?

0- No evidence
1- Limited evidence
2- Unclear evidence
3- Clear evidence
4- Strong evidence

Any observations with the video time frame, comments or reflections ……

c. Is there evidence that the session enabled a positive therapeutic relationship/alliance?

0- No evidence
1- Limited evidence
2- Unclear evidence
3- Clear evidence
4- Strong evidence

Any observations with the video time frame, comments or reflections …….

d. Is there evidence that the session adopted an empathetic attitude?

0- No evidence
1- Limited evidence
2- Unclear evidence
3- Clear evidence
4- Strong evidence

Any observations with the video time frame, comments or reflections …….

e. Is there evidence that the sessions enabled working with the existing strengths as caregivers?

0- No evidence
1- Limited evidence
2- Unclear evidence
3- Clear evidence
4- Strong evidence

Any observations with the video time frame, comments or reflections …….

f. Is there evidence that the sessions enabled visiting difficulties and concerns of the caregivers?

0- No evidence
1- Limited evidence
2- Unclear evidence
3- Clear evidence
4- Strong evidence

Any observations with the video time frame, comments or reflections …….

g. Is there evidence that the session enables developing new useful skills as caregivers?

0- No evidence
1- Limited evidence
2- Unclear evidence
3- Clear evidence
4- Strong evidence

Any observations with the video time frame, comments or reflections …….

h. Is there evidence that the session enabled getting peer support?

0- No evidence
1- Limited evidence
2- Unclear evidence

3- Clear evidence
4- Strong evidence

Any observations with the video time frame, comments or reflections …….

2. PROVISION OF DMP SESSION OBJECTIVES

Is there evidence that the (respective) objectives of the session were met?
Session 2- Identifying personal strengths
Enjoyable moments with your child
Session 4- Exploring new ways
New Vision

0- No evidence
1- Limited evidence
2- Unclear evidence
3- Clear evidence
4- Strong evidence

Any observations with the video time frame, comments or reflections …….

3. PROGRESSING THERAPY THROUGH FOUR SECTIONS

Is there evidence that the session was well paced and there was a good flow?

0- No evidence
1- Limited evidence
2- Unclear evidence
3- Clear evidence
4- Strong evidence

Any observations with the video time frame, comments or reflections …….

4. USE OF TOOLS / PROPS IN THERAPY

Is there evidence that appropriate tools/props were used in the session?

0- No evidence
1- Limited evidence
2- Unclear evidence
3- Clear evidence
4- Strong evidence

Any observations with the video time frame, comments or reflections …….

5. CONSISTENCY OF THE INSTRUCTIONS AND THE LANGUAGE (VERBAL & NON-VERBAL)

Is there evidence that the instructions were consistent and clear?

0- No evidence
1- Limited evidence
2- Unclear evidence
3- Clear evidence
4- Strong evidence

Any observations with the video time frame, comments or reflections …….

Highlights

- A dance movement psychotherapy protocol for caregivers is presented
- Different phases of intervention development are illustrated
- Fidelity evaluation was conducted through retrospective video ratings
- The findings demonstrate the transferability of this protocol to a larger context