

**Dance Movement Psychotherapy for the Wellbeing
of Children on the Autism Spectrum and their
Caregivers: A Mixed-Methods Study**

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A thesis submitted in partial fulfilment of the requirements
for the degree of Doctor of Philosophy

Edge Hill University

October 2020

Symbiotic Beings

Don't stray afar.
like a faraway star.
But don't come too close.
Or my heart shall froze.

I need you by my side.
O'blessed entity in the sky.
We're Yin and Yang, you and I.
We work so well, I really don't know why.

I scratch yours, You scratch mine,
Its basically Nature by design.

Is it fine?
To make you mine?
Surely we'll shine.
Such heavenly divine.

Oh what a pleasure!
This Symbiotic behaviour!
Two beings love one another

-Written by

Peanut Phillipines

Amma, in this quest each letter is to know us better!!

ACKNOWLEDGEMENTS

My sincere thanks to my supervisory team:

Vicky, Where to start... It is only because of you, I was able to pursue this research work. I am thankful that you believed in my abilities to take up this doctoral study. From the bottom of my heart, I am grateful to you for providing me this opportunity. I cannot thank you enough for all your support, guidance and encouragement. I am extremely grateful to you for being my DMP mom, for your care and emotional support during difficult times, your friendship, and your readiness to extend help beyond your supervisory role. I could not have imagined a better supervisor.

Joanne, many thanks for wisely and caringly accompanying me throughout this project. Thank you so much for finding the most suitable statistical model for my data and helping me to make sense of the tools, software and interpretation. I am deeply grateful for your ideas, your calm guidance, your patience, your critical questions, and your interest in my study.

Stergios, thank you for guiding me through the project with your expertise and patience during some challenging stages of the project. I appreciate all your efforts towards including TMS in the study. Although we could not use it for this study, I am grateful to you for providing me with hands on experience to use the device.

Themis, thank you so much for your advice, for your insights, your constructive feedback, your attention to detail, and all the enjoyable hours we spent together discussing this project.

I am indebted to Edge Hill University for awarding me with a three year GTA studentship and for providing a stimulating and supportive research, learning and teaching environment.

My special thanks to the stars of this project:

My deepest appreciation to all the children, their families and teachers who participated in this research project. This piece of work and you are inseparable. The bundle of joy that I received from you all and the strings of special moments spent with you have warmly kept my learning journey colourful. I am grateful for your consent, assent, willingness and

enthusiasm to take part in dance movement psychotherapy sessions and permission to be video recorded and for the material to be used for research purposes.

I would like to express my gratitude to those who played a dynamic role in this project:

Many thanks to the management and staff members (Sadie and Micah) for coordinating and permitting us to run the sessions.

Thank you, Ailsa, for agreeing to deliver the DMP sessions, for giving your best to the sessions, completing the fidelity assessment and allowing me to witness the process.

Thank you, Zoe, for your contribution in conducting the systematic review and fidelity assessment for this project. I am happy that I got to learn so much from your work.

Marcus, thank you for agreeing to proofread this lengthy and dry piece of writing. You have been resourceful during several difficult times. I owe you so much for all your support, feedback and precious time.

Jen, you have accompanied me on several phases of my doctoral journey. Thank you for finding suitable schools, several iterations of emails and language edits.

Gergana, Thank you for your genuine interest in my project, for all the lovely discussions and suggestions and for being a friend.

My infinite thanks go to my family:

Finally, I run out of words to express my gratitude to my husband Gnanavel for unconditionally supporting me throughout the project, bearing the separation, sacrificing your sleep to attend my calls, showing immense care to edit my thesis, almost doing your second doctoral study by virtually being by my side throughout, for being truly wonderful and the list continues. Thank you to Appa and the rest of my family for believing in me and for encouraging me to embark on this exciting academic journey in a faraway place. Raji dodamma you are incredible!! You are the only person with whom I can resonate with my obscured ideas, big dreams and vision. You bring special fragrance and purpose to my life. Your working experience as a counsellor has enthused me, enriched my knowledge and writing. I could not have chased this dream without you. A huge thanks to Ani mama and Reshmatte who constantly inspire me and back me up in all my steps.

ABSTRACT

Children with Autism spectrum disorder (ASD) and their caregivers can find sustaining their wellbeing to be highly demanding. Dance Movement Psychotherapy (DMP), with a holistic and non-verbal character, may present as a relevant intervention option for this group of children and their caregivers. This doctoral research study aimed to explore the contributions of DMP towards the wellbeing of children with ASD and their caregivers. The study was conducted in two phases using a mixed-methods approach. Phase I involved a systematic review of the available literature to identify, evaluate, and synthesise the outcomes of DMP towards the wellbeing of children with ASD. The findings of the review identified the potential of DMP to promote the wellbeing of children with ASD and highlighted the lack of evidence for its effectiveness and clarity on the therapeutic process. Phase I also involved the development of two DMP intervention protocols for children and caregivers based on the key findings of the systematic review along with theoretical foundations and clinical experiences of the therapist, supervisor and researcher. These protocols were piloted in Phase II of the study which investigated the effects of DMP on the emotional and social wellbeing of children with ASD and their caregivers using a randomised and controlled crossover convergent mixed-methods design. Fidelity assessments were also conducted that showed 75% and above adherence to each criterion, good agreement among the three raters (researcher, therapist and an external expert) and reflected that the protocols were implemented across groups consistently. Twenty-six children with ASD and thirty-seven caregivers participated in the study. Quantitative data were collected before and after DMP while the qualitative and arts-based data were collected during the intervention using a battery of methods. Social Communication Questionnaire (SCQ) and Strengths and Difficulties Questionnaire (SDQ) for children with ASD have shown statistical and clinical significant improvements in the wellbeing measures irrespective of their mode of communication. The qualitative strand for children described multi-layered and complex processes. Three main themes with 18 sub-themes were identified through the thematic analysis of qualitative data including a) individual transformation process; b) group transformation process; c) overall process and outcomes of DMP. A dance piece was created through the artistic inquiry process that identified six key moments of change during DMP sessions with children. Similarly, for caregivers both outcome measures used i.e. Parenting Stress Index-Short Form (PSI-SF) and Adult Wellbeing Scale (AWS) indicated clinically significant improvement after DMP and a statistically significant impact on post-intervention scores for AWS but not for PSI-SF. In addition, a significant association was found between pre-intervention scores, number of sessions attended with the post-intervention scores of both AWS and PSI-SF. Their engagement in the therapeutic intervention was significantly related to the post-intervention measures. The qualitative findings from caregivers involved six main themes and twenty sub-themes which revealed that participants experienced some helpful and unhelpful factors such as (beholding within and around; reflecting and reinforcing strengths; exchanging views; looking back and carrying forward; core benefits; challenges to engage in DMP) that influenced the process and outcomes of DMP. Four key moments of change were noticed through the artistic inquiry process which were woven into a dance piece. Due to many dropouts from the intervention groups of caregivers, a bidirectional association between wellbeing of children and caregivers was not explored through statistical analysis. Instead, two exploratory case vignettes were presented which highlighted the potential bidirectional influence of experiences of wellbeing. The limitations and appropriateness of the research methods implemented in this study for their use in a large RCT are discussed. Overall, the findings highlight the value of DMP for improving the lives of young vulnerable groups and their caregivers.

KEYWORDS

Autism Spectrum Disorder, Dance Movement Psychotherapy, Caregivers, Wellbeing, Pilot intervention study, Crossover design, Mixed-methods

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LIST OF ABBREVIATIONS

- ABA - Applied Behavioural Analysis
- ADDM - Autism and Developmental Disabilities Monitoring Network
- ADI-R - Autism Diagnostic Interview-Revised
- ADMP UK - Association of Dance Movement Psychotherapy United Kingdom
- ADOS - Autism Diagnostic Observation Schedule
- AI - Artistic Inquiry
- ANCOVA – Analysis of Covariance
- ANOVA – Analysis of Variance
- APA - American Psychiatric Association
- AQR - Analysis system to evaluate the Quality of Relationship during music therapy
- ASC- Autism Spectrum Condition
- ASD - Autism Spectrum Disorder
- AT- Art Therapy
- ATEC - Autism Treatment Evaluation Checklist
- AWS – Adult Wellbeing Scale
- CARS -Childhood Autism Rating Scale
- CDC -Centres for Diseases Control and Prevention
- CDD- Childhood Disintegrative Disorder
- CONSORT - Consolidated Standards of Reporting Trials
- CPD – Continuing Professional Development
- DC -Difficult Child
- DIR - Developmental Individual difference Relationship
- DMP – Dance Movement Psychotherapy
- DMT – Dance Movement Therapy
- DSM – Diagnostic and Statistical Manual of Mental Disorders
- DT – Dramatherapy, Drama Therapy
- ESCS- Early Social Communication Scales

HAM-D - Hamilton Depression Rating Scale
HR – Human Resources
ICD – International Classification of Diseases
IDI - Inwardly Directed Irritability
ITT- Intention To Treat
MCID- Minimal Clinically Important Difference
MRC- Medical Research Council
MSEL - Mullen Scales of Early Learning
MT- Music Therapy
NAS - National Autistic Society
NICE – National Institute for Health and Care Excellence
NIHR- National Institute for Health Research
NIMH - National Institute for Mental Health
ODI - Outward Directed Irritability
P-CDI - Parent-Child Dysfunctional Interaction
PDA - Pathological Demand Avoidance
PDD - Pervasive Developmental Disorder
PDD-NOS - Pervasive Developmental Disorder – Not Otherwise Specified
PECS - Picture Exchange Communication System
PICOS - Participant Population-P; Intervention-I; Outcomes-O and Study design-S
PRISMA - Preferred Reporting Items for Systematic Reviews and Meta-Analyses
PSI-SF – Parental Stress Index -Short Form
RCT – Randomised Controlled Trial
rsfMRI - resting-state functional Magnetic Resonance Imaging
SCQ – Social Communication Questionnaire
SD - Standard Deviation
SDM - Sherborne Developmental Movement
SDQ – Strengths and Difficulties Questionnaire
SEAM - Social Engagement and Attunement Movement

SEN – Special Education Needs

STORM - Social Top-down Response Modulation

TEACCH - Treatment of Autistic and Communication Handicapped Children

ToM- Theory of Mind

TSR - Transformative Services Research

WHO – World Health Organization

CHAPTER ONE: INTRODUCTION

“Dance is a living language that is spoken by people and speaks of people, an artistic statement that rises above the basic level of reality to speak on a higher level in images and similes of those things that move people’s hearts and demand to be communicated.”

- (Wigman, in Marakas, 1995:85)

Dance can be seen as a creative process that involves movement of the body within time and space (Ingram, 1978; Kaepler, 1978). It has been argued that it is an innate resource and medium for communication (Koff, 2000; Boris, 2001), which takes the mover on a journey beyond words. Inspiration for this project originated largely from my passion towards dance on the one hand and, on the other hand, work experience as a speech and language therapist with children with ASD. As a speech-language therapist, while offering support to children with ASD through assistive, augmentative and alternative communication, I began using rhythm and timing as important scaffolding devices to build social and communicative interactions (Schögler, 2008; Hardy & LaGasse, 2013). Rhythm and time are also an integral part of dance and music. This eventually acted as the driving factor to explore the use of dance or movement to support children with ASD and communication between caregivers and children with ASD.

This chapter outlines the conceptual framework that formulated this research. It is an attempt to provide a theoretical rationale for the overall aims and objectives for this work by drawing upon some of the gaps in current literature and clinical practice. Further, it illustrates and explicates the structure and components of this thesis, on Dance Movement Psychotherapy (DMP) for children with Autism Spectrum Disorder (ASD) and their caregivers.

1.1 Rationale for this research

Autism spectrum disorder (ASD)¹ encompasses a group of complex and pervasive developmental conditions with unique strengths and challenges (Volkmar et al., 2014; American Psychiatric Association (APA), 2013). The word ‘spectrum’ in ASD highlights the heterogeneity in individuals with ASD; their abilities and challenges may fall anywhere in this spectrum. Their challenges particularly impact social, communication, and behavioural patterns early in life and persist throughout their life time, while their strengths vary drastically and can be found, but are not limited, to areas such as memory, music, and mathematics (Lord et al., 2018; National Institute for Mental Health (NIMH), 2020). With these infrequent gifted abilities and challenges, children with ASD encounter several issues in their interactions with others which have an impact on their wellbeing (NICE, 2017). In addition, it might be difficult and uncomfortable for the caregivers², too, as they negotiate the extreme capabilities of their children with ASD (Baker, et al., 2002). Thus, enhancing the wellbeing of both children with ASD and their caregivers gain paramount importance.

Around the world, one in every 160 children has an autism spectrum disorder (ASD). This fact led the sixty-seventh World Health Assembly, supported by more than 60 countries, to undertake a resolution for ‘*comprehensive and coordinated efforts for the management of ASD*’(WHA67.8). The World Health Organization (WHO) (2018) recognizes the complex health care needs and inadequate services and support available for people with ASD. It is not surprising that the parents of children on the autism spectrum often struggle to find service provision and, at times, have an intensive need to find solutions. Although, raising and maintaining children with ASD might disturb the caregivers’ quality of life and wellbeing (Buescher et al., 2014), the focus of the services or intervention programmes are generally on the children. But the caregivers also face challenges related to the characteristics of ASD:

¹ In this thesis, the term ‘children with ASD’ is used to achieve consistency with the terminology in reference manuals, such as DSM-5 and ICD-11. Therefore, the term ASD (Autism Spectrum Disorder) rather than ASC (Autism Spectrum Condition) is used here. In addition, the researcher is aware of the constant debate regarding appropriate language for referring to people with ASD. I have followed the current convention to use people-first language, such as ‘child/adult with ASD’, to express that the condition is not the most important or defining characteristic of the person. However, self-advocates are increasingly arguing for using identity-first language, such as ‘autistic child/adult’, to express that autism cannot be separated from their personality and is part of a valued identity. This longstanding tension between the terminologies will be discussed in chapter two.

² In this thesis, the term ‘caregivers’ is used to refer to any person who is in a position to provide support to the holistic development of children. This could include parents, teachers, grandparents or even older siblings who are in the primary circle of children with ASD.

they might experience greater distress than parents of typically developing children (Dumas et al., 1991; Hauser-Cram et al., 2001; Baker, et al., 2002) and present lower psychological wellbeing and coping than caregivers of children with other disabilities (Gallagher & Bristol, 1989). Parenting stress also mediates the relationship between child's behavioural problems and decreased parenting self-efficacy (Rezendes & Scarpa, 2011).

It is still unclear if caregivers' wellbeing and children's wellbeing are interlinked and influence each other. Rosenquist, Flower and Christakis (2011) suggests that depression spreads through a contagious process. The probability of depression nearly doubles for an average person surrounded by people with depression compared with those who are not connected to individuals with depression (Rosenquist, Flower & Christakis, 2011). So, if parents feel unwell, they may influence the wellbeing of their children (and vice-versa). To my knowledge, there is only a small amount of research on the transactional relationship between the state of wellbeing of caregivers and children with ASD. Protocols often target only individuals on the autism spectrum and ignore the influence of the environment and people surrounding them. Furthermore, a study conducted by Ayvazoglu et al. (2015) on the physical activity levels of parents of children on the autism spectrum indicate that they were largely inactive due to the physical and emotional demands of the family. Parents reported that they did not manage to find time to be physically active because of the time spent commuting from one therapy to another for their children. At the same time, as relevant research literature suggests (Tompsonski, 2003; Pan et al., 2005; Lubans et al., 2016; Yeh et al., 2016), physical activity levels can be directly linked with the overall wellbeing of a person. This raises the question of whether dance movement psychotherapy, a movement-based psychological intervention, can play a role in supporting parents. It is essential to explicitly examine whether DMP could be used to counteract the impact of the poor wellbeing of the people surrounding children with ASD. Henceforth, the primary motivation of this thesis rests not just on children but also considers the potential of caregivers' mental health in the effective intervention strategy.

Casasanto and Dijkstra (2010), amongst others, claim that emotion is rooted in motion, suggesting that dance as a form of movement provides an outlet for emotions. Dunphy and Scott (2003) argue that expressing emotion is a primary element of human behaviour, which may promote wellbeing and health in numerous ways. Similarly, dance is often regarded as a creative movement for self-expression, with the potential to improve our

bodies, moods and ultimately our lives (Dale, Hyatt & Hollerman, 2007; Willke, 2007; Capello, 2008). The therapeutic benefits of dance have been discussed in various ways. For example, across cultures, people have used the positive effects of dance intuitively and incorporated dance in healing rituals or used it in rituals around fertility, birth, sickness and death (Molinaro, Kleinfeld & Lebed, 1986; Chaiklin, 2009). Incorporating these elements of dance along with the elements of psychology, psychotherapy, kinesiology, education and many more, led to the development of the field of Dance Movement Psychotherapy (DMP), also known as dance movement therapy or movement psychotherapy in the UK. Other names include dance/movement therapy in the USA, dance therapy in many European countries and dance-movement therapy in Australia. In this thesis, the term Dance Movement Psychotherapy (DMP) will be used. Dance movement psychotherapists utilise dance or movement as a medium for therapeutic engagement and change, supported by non-verbal communication that seeks to find a path to reach or build connection with a client (ADMP UK, 2013). DMP sees the individual's health in a holistic perspective (Nanni, 2005; Vella & Torres, 2012; González & Macciuci, 2013). This type of intervention may tap into neurocognitive processes involved in the core difficulties of individuals on the autism spectrum in a more integrated way than other therapies (Koch et al., 2015; Hildebrandt, Koch & Fuchs, 2016; Koehne et al., 2016; Manders, 2016). However, there is still not enough empirical evidence for this, which could substantiate the wider use of DMP.

Although research in the field of DMP has shown an upward trend in the past decade (Meekums, 2010), DMP remains a young profession that relies heavily on creative, subjective and clinical reports (Rova, 2017). When research methodologies are adopted, they use small samples, qualitative designs, and descriptive, phenomenological, experience-based approaches or case studies (Serlin, 1996; Behrends, Müller & Dziobek, 2012; Hervey, 2012), resulting in insufficient empirical evidence for the wider use of DMP. Indeed, compared to other practices, DMP has not been used widely with children on the autism spectrum. Green et al. (2006) for example, reported that in the USA, only 2.4 % of children on the autism spectrum participated in DMP in comparison to other interventions, while DMP stood in 55th position on a list of treatments used by parents. To make DMP interventions more widely available, further research is needed to empirically validate the effectiveness of the DMP as an intervention and to identify the most appropriate ways of working with ASD client populations. It is possible that such research can bridge the gap between evidence-based

practice and practice-based evidence (Barkham & Mellor-Clark, 2003). Information such as dosage (frequency and duration of DMP sessions), theoretical frameworks, therapeutic techniques and the overall process used in DMP for children with ASD and their caregivers are not yet clear. Therefore, the present research was driven to systematically explore and report on how DMP is practised with children on the autism spectrum based on available literature and also to evaluate the effects on the contributions of DMP interventions for children with ASD and their caregivers.

As an inter-disciplinary research project, with an overlap of concepts from the arts, psychotherapy and wellbeing, a methodologically complex design was employed. The research plan was executed at two phases with convergent mixed-methods approach involving quantitative, qualitative and arts-based components. Integrating diverse research methods and perspectives was assumed to enrich the study with a deeper and wider understanding of the therapeutic process and effectiveness of DMP. It was also thought that a variety of research outputs would be important to offer meaningful insights to researchers and practitioners from arts therapies, mental health professionals, children with ASD, their families and also the general public.

1.2 Overall aim and objectives

The main aim of this research was to study the contributions of Dance Movement Psychotherapy (DMP) towards the wellbeing of children with ASD and their caregivers. In particular, the focus was on changes in the emotional and social wellbeing of children with ASD. For the caregivers the focus was on their overall wellbeing as a result of DMP intervention in comparison with their standard care routine. The objectives of this study were as follows:

1. To evaluate the outcomes of DMP intervention on the wellbeing of children on the autism spectrum and their caregivers
2. To explore the therapeutic process underlying the effectiveness of a particular DMP intervention with children on the autism spectrum and their caregivers
3. To explore the relationship between the wellbeing of children on the autism spectrum and their caregivers

The scope of this project was to systematically gather available evidence on the therapeutic process and outcomes of DMP, then to implement best practice based on this available research. As a pilot, it did not require large sample size and statistical power (Thabane et al. 2010). Therefore, in the first phase, a systematic review was conducted and two DMP intervention protocols were developed. In the second phase, these two DMP intervention protocols were piloted by adopting a crossover research design with a primary intention to investigate the existence of an intervention effect and explore the contribution of DMP towards the wellbeing of children with ASD and their caregivers. The fidelity of the intervention to the protocol, limitations and appropriateness of the intervention and directions for future projects were critically analysed and are reported with as much transparency as possible with an intention that unhelpful as well as helpful factors noticed in this project will enrich and eventually enhance the quality of research in the field of DMP and related therapies. The research questions to meet these aims and objectives are reported in the next chapter after identifying the gaps in the literature.

1.3 Structure of the thesis

The steps through which the aims and objectives of the research were explored and the findings of the investigation are reported and discussed in this thesis. As shown in the asymmetrical bow tie (Figure 1.1), the thesis is structured into eight chapters and the information covered by each chapter are briefly described below:

Chapter One (Introduction) was meant to establish the purpose and rationale by describing an overall picture of the study along with the scope of this research. It has broadly explained the areas of interest highlighting the rationale and driving factors which have shaped this investigation.

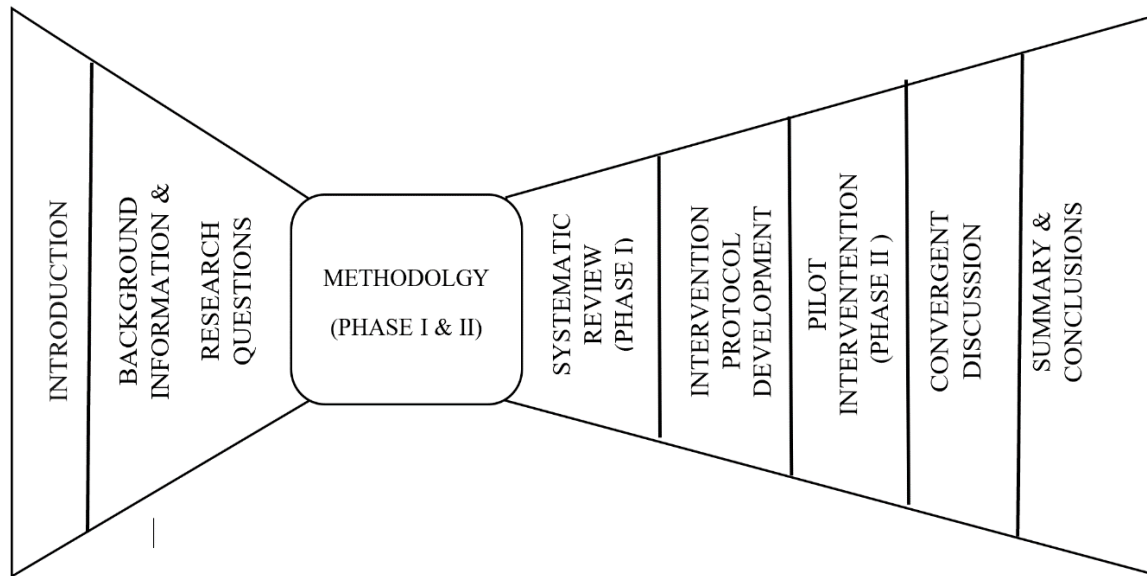


Figure 1. 1 Asymmetrical bowtie figure presenting the chapters included in the thesis (adapted from Ansdell & Pavlicevic, 2001).

Chapter Two (Background Information) begins with the description and literature around the key terms such as ASD, caregivers and wellbeing. While describing the key terms a brief overview of diagnostic criteria, causes, epidemiology, and comorbidities are presented. A primer to ASD advocacy and the neurodiversity movement is followed by a presentation of the impact of ASD on the parents and families of affected children. Further, the key terms are discussed in relation to the proposed intervention (DMP) at every stage, although a full detailed and critical review of literature on ASD and DMP are given in Chapter four which deals with the findings of the systematic review. This chapter also outlines how DMP differs from other therapies for those with ASD and their caregivers. The role of arts, movement and creativity for children on the autism spectrum and their caregivers are also explored. Social implications on available intervention options for children on the autism spectrum and support available for the caregivers are explored. The literature concerning the wellbeing of caregivers of children with ASD will be introduced along with the potential benefits of DMP for caregivers' wellbeing. Relevant studies are discussed against their clinical value as well as their ability to inform evidence-based practice. Finally, the purpose of this research is positioned in relation to current knowledge by framing the research questions and hypothesis.

Chapter three (Methodology) provides the philosophical foundations of the study and their relevance to the field. A definition and justification for the methodological approach adopted are given. Next, the methodological approach that was implemented to address each research question is detailed. Details of how the systematic review (Phase I) was conducted are provided. This flows into a detailed description of Phase II, which involved piloting DMP intervention programmes for children with ASD and their caregivers. The development of Phase II is discussed against trends in arts therapies research and potential to represent value for different audiences. The methods and procedures involved in recruiting the participants, therapists, developing the DMP intervention programme are offered with greater description and illustrations. Next, the steps involved in collecting quantitative, qualitative and arts-based data are described in different sections. A clear picture of the tools utilised for the assessment is provided with the justification for the choice made. In the subsequent section, methods involved in the data-analysis of three different types of data are described. It presents the statistical approach that was used to process data from the crossover research design, the thematic analysis of qualitative data and the ‘dialoguing’ with arts-based data. Finally, the ethical considerations and trustworthiness are offered for the research.

Chapter Four (Phase I Results and Initial Discussion) presents the results of the systematic review. This chapter details the studies that survived the inclusion criteria and critically evaluates the quality of the studies. Different elements that were extracted from qualitative and quantitative studies to answer specific research questions are presented in tabular format and then discussed separately.

Chapter Five (Intervention Protocol Development and Fidelity Assessment) a description of how the development of intervention protocols took place and how the results of phase I informed the protocol development is given, along with a justification of why certain elements from the systematic review have been considered. In addition, other theoretical frameworks that have influenced the development of the protocols are critically discussed. This is followed by a short description of how these protocols were clinically implemented. In the final section of this chapter, findings and a critical discussion of the fidelity assessment are provided.

Chapter Six (Phase II Results and Initial Discussion) aims to present the results of multi layered and multimodal data. The results of the qualitative, quantitative and arts-based data will be described and preliminary discussions for all the types of data are presented. At first, each set of data are analysed in parallel and will be presented as independent results for children and adults. The quantitative outcomes are analysed using statistical means to capture the outcomes of the DMP intervention programme. The statistical outcomes are represented graphically and in tabular formats for easy understanding of the findings for the children's data set and the caregivers' data set separately. In the subsequent section of this chapter, themes that emerged from the qualitative findings from video observations, semi-structured interviews and reflections during the sessions by the participants are presented. It is then followed by the findings of the artistic inquiry where a choreographed dance performance video is presented and described. The final section of this chapter consists of two case vignettes to respond to the research question on the bidirectional influence of wellbeing of caregivers on children with ASD.

Chapter Seven (Phase II Convergent Discussion) integrates the findings of all the mixed-methods used for the investigation and will offer discussions on how different data sets complement each other to give a holistic picture of this research. It seems important to integrate the findings and results from all the sections of this research to arrive at a comprehensive understanding of the research questions. Key concepts emerging from the project are identified and discussed against individual findings and relevant literature. The limitations of the present study and recommendations for future research are reported. Various aspects of this pilot intervention are discussed, including tools used for assessment, challenges and advantages of research in a special education school environment, modifications required for the protocol, resources, the acceptability of the intervention and the development of relevant clinical expertise.

Chapter Eight (Summary and Conclusions) presents a brief summary of the whole research project, and its relevance to DMP and the community at large. The key findings are represented as a diagram to draw meaningful conclusions and reach out to diverse audience.

CHAPTER TWO: BACKGROUND INFORMATION

This chapter intends to provide a comprehensive introduction to the key concepts, theoretical perspectives and research studies using a funnel format where broader topics are discussed at first, gradually focusing on subtopics and finally narrowing the description to arrive at the current topic of concern. Key terms, including ‘autism spectrum disorder’ (ASD), ‘caregivers’ and ‘wellbeing’, are explored independently. Later, these terms are discussed in relation to Dance Movement Psychotherapy (DMP), emphasising the role of DMP as an intervention. With regards to ASD, the information here provides an overview of the evolution of definitions, diagnostic terminologies, incidence, prevalence and tension around the neurodiversity movement and diagnostic labelling. Further, a description of available treatment and interventions for children with ASD is followed by a discussion of the differences between arts therapies, and DMP in particular, from these interventions.

The impact on caregivers of raising children with ASD is discussed from several perspectives. Available interventions for caregivers’ mental health are explored. Subsequently, literature on arts therapies and DMP is described. It is argued that wellbeing is a multidimensional notion. Wellbeing of both children with ASD and their caregivers are discussed. Research in the field of arts therapies and wellbeing, including quantitative qualitative and arts-based methodologies, their importance to the growth of DMP and scope for improvement, is identified.

Finally, in relation to the knowledge already available and the gaps noticed in the literature, the research questions for the study are presented. These are categorised distinctly for quantitative, qualitative and arts-based approaches to data collection.

2.1 Autism Spectrum Disorder

Over the past century the understanding of autism and its array of disorders has evolved gradually. Several terms such as ‘childhood schizophrenia’, ‘Kanner autism’, ‘autism’, ‘early infantile autism’, ‘atypical autism’, ‘classic autism’, ‘autism spectrum disorder’ (ASD), ‘autism spectrum condition’ (ASC), ‘pervasive developmental disorder’ (PDD), ‘high-functioning autism’ (HFA), ‘Asperger syndrome’ (AS) and ‘pathological demand avoidance’ (PDA) are all associated with one group of individuals and have been used differently over

the years (American Psychiatric Association, 2013). Kanner (1943) first documented his clinical observations of unusual and stereotypical behavioural patterns and coined the term early infantile autism. By the late 1970s, a triad of impairments including social interaction, communication and imagination, together with a repetitive stereotyped pattern of activities were identified as typical autism or childhood autism by Wing and Gould (1979). However, practitioners then noted that not all children displayed all the features and some of them did not fit into what was called ‘typical autism’. Hans Asperger, in 1944, had identified children with typical autism as having a range of special abilities allowing them to be more functional than the average group of people without autism. But, it was only in 1994, Asperger Syndrome (AS) was included in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM) and began to also be in common use. A relatively recent development is that as a way of acknowledging the heterogeneity of people with autism the word ‘spectrum’ came into common use, with ‘autism spectrum disorder’ (ASD) becoming the term used the most.

Since the mid-1990s two systems have extensively influenced the diagnostic classification and identification of ASD: (i) The International Classification of Diseases (ICD), formed by the World Health Organization (WHO) to classify and codify diseases and disorders of all kinds globally and (ii) the Diagnostic and Statistical Manual of Mental Disorders (DSM), produced by the American Psychiatric Association (Tyrrer et al., 2014). These two systems have been revised several times over the years, and despite some minor differences between them, they influence the way in which current definitions and diagnostic criteria are formed. Previously, separated diagnoses of childhood autism, Asperger’s syndrome, Rett’s Syndrome, Childhood Disintegrative Disorder (CDD) and Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS) were in use. Currently both classification systems have put all these into a single category of Autism Spectrum Disorder (ASD).

2.1.1 Current definition and diagnostic criteria

Both ICD-11 (World Health Organization, 2018) and DSM-5 (American Psychiatric Association, 2013) define ASD as a neurodevelopmental disorder identified by a persistent deficit in social communication and interaction, and restricted, repetitive patterns of behaviour. The DSM-5 description is more comprehensive than ICD-11 and describes the characteristics of ASD in greater depth. Five characteristics are listed, along with sub-

variations. Below the diagnostic criteria are enumerated in DSM-5 (299.00 F84.0, American Psychiatric Association, 2013:50-51):

- “A. Persistent deficits in social communication and social interaction
 - 1. Deficits in social-emotional reciprocity
 - 2. Deficits in nonverbal communicative behaviours used for social interaction
 - 3. Deficits in developing, maintaining, and understanding relationships
- B. Restricted, repetitive patterns of behaviour, interests, or activities, as manifested by at least two of the following:
 - 1. Stereotyped or repetitive motor movements, use of objects, or speech
 - 2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behaviour
 - 3. Highly restricted, fixated interests that are abnormal in intensity or focus
 - 4. Hyper- or hypo-reactivity to sensory input or unusual interest in sensory aspects of the environment
- C. Symptoms must be present in the early developmental period
- D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.
- E. These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay” (American Psychiatric Association, 2013:50-51).

The first three components of section A are widely recognised. However, this comprehensive definition also gives further attention to behavioural patterns and non-verbal characteristics such as stereotyped motor movements and sensory components. It is evident that the definition focuses on deficits or something that is lacking in an individual. The definition does not recognise additional skills and capabilities of individuals and it uses diagnosis by exclusion where the functioning of the person cannot be explained by any other type of disability. It is also important to note that the symptoms must be noticed in early years, not something that comes on in adulthood. However, variations in the life-course and long-term prognosis of people with ASD are very common. Developmental delays are highly prevalent in early infancy stages of ASD. But, these delays are apparent to get noticed during 18 to 24 months and in some cases regression in their skills are also noted (Drmic, Szatmari

& Volkmar, 2017) which may lead to the delay in the diagnosis of ASD. The reason why such symptoms appear in the early developmental period is discussed in the next segment.

2.1.2 Aetiology and epidemiology of ASD

The causes of ASD have remained an enigma. Researchers have found several factors and influences, and it has been argued that there is no single cause. Rather, there may be a mixture of risk factors (The National Autistic Society, 2018). Those identified so far range from differences in the structure and function of the brain to genetic and environmental factors. Researchers have reported that environmental factors such as sociological, toxicological or pharmacological exposure, as well as genetic factors such as mutation, perhaps raise the chances of developing ASD. Recent developments in research have zeroed in on the causes of ASD as challenges in cortical neural connectivity and a multifaceted blend of both genetic and environmental factors as probable causes of ASD (Ackerman et al., 2017; Kim et al., 2017). There are clearly missing pieces in this area of research: more work focusing on central cortical structures and connections is being carried out, and connectivity challenges in the peripheral nervous systems has barely been explored (Amos, 2013). Neither have causal factors from the angle of sensorimotor perspective been examined thoroughly: even the diagnostic manuals describe this as a secondary criterion (see the 4th point under criteria B in the DSM-5 criteria). Aetiological studies could also look into the function of the peripheral nervous system, acting as a critical interface with the central nervous system to create an active, self-organizing map of the body in space and time.

In recent years, ASD has become one of the most common developmental disabilities in children (Buescher et al., 2014; National Autistic Society NAS, 2018). Brugha et al., (2012) report that in the UK approximately 1% of the population is affected by ASD. Globally, a report compiling studies from Asia, Europe, and North America suggests that the average prevalence of ASD is between 1% - 2% (Centres for Disease Control and Prevention, 2018). In the US, in 2014, around 1 in 68 children was identified with ASD (Wingate et al., 2014). By 2016, according to CDC's Autism and Developmental Disabilities Monitoring (ADDM) Network (Christensen et al., 2016), this figure had risen to 1 in 54, a 15% increase. It is unclear if this increase reflects changes in the prevalence of ASD, better diagnosis of

ASD, the use of a collective term for all the varieties of autism in DSM-5, or better reporting as the result of professional and public awareness of ASD.

During the 2019/20 academic year in the UK, 4.2% of school aged children were diagnosed with ASD (6.49 % of these were boys and 2.0% were girls) (Department of Health, 2020). The high rate of ASD in the UK shows mounting demands for better intervention options and provision of support for children with ASD.

It is clear that ASD occurs in all ethnic and socioeconomic groups (LaFramboise, Winckler & Thomas, 2009). Interestingly however, Durkin et al., (2010) found a correlation between higher socioeconomic status and higher ASD prevalence rates, which maybe the result of better access to professional services. Occurrence of ASD was also noted at least four times more in males than in females. Several theories attempt to explain this gender disparity. Some researchers have even questioned whether it is really true (Loomes, Hull & Mandy, 2017). Reports have questioned the sensitivity of diagnostic tools to detect ASD in girls, as most of the tools used are based on data from boys (Dworzynski et al., 2012). Research has also pointed to some differences in clinical manifestations of ASD in males and females (Hartley & Sikora, 2009; Dean, Harwood & Kasari, 2017). For instance, girls with ASD are regarded as being at higher risk of suffering from depression and related psychiatric problems than boys. Also, girls displayed higher incongruity between feelings and behaviour in comparison with boys and, thus, are better at masking their symptoms (Solomon et al., 2012; Lai et al., 2017). Among several speculations around the gender disparity in ASD, Baron-Cohen et al., (2011) have argued, based on gender stereotypes, that females are generally more empathetic while men have stronger drive to systemize. Baron-Cohen et al., (2011:1) name this as ‘an extreme manifestation of the male brain’. Another concept from the field of genetics states that a ‘female protective effect’ in the female body prevents genetic mutations that are necessary for ASD symptoms to manifest (Palmer et al., 2017). Although it remains unclear why boys are more affected by ASD than girls, superficially it appears that ASD is seen more in boys than in girls.

From an economic point of view, ASD has been reported to be the most expensive condition in the UK (Buescher et al., 2014). In 2016 alone at least £32bn was spent addressing the needs of children with ASD, more than the combined costs of heart disease, cancer and stroke. It has been calculated that the lifetime cost of ASD is approximately £1.5m in the UK

and \$2.4m in the USA (Buescher et al., 2014; Barrett et al., 2014). The need for effective support is important, then, for several reasons including financial ones. Despite these startling numbers and the economic burden, there is limited focus on intervention-based research. According to Autistica, one of the leading charities for ASD in the UK, only £6.60 per person with ASD is spent on research compared with £295 on cancer (Buescher et al., 2014). The same source argues that just £180 is spent on research for every £1million that is spent on the care of persons with ASD. If these are the numbers just from the UK, it is possible that the global picture is more daunting.

2.1.3 Severity and comorbidity

It is widely accepted that ASD manifests across a wide range of severity. DSM-5 considers social communication functioning and restricted repetitive behaviours and determines three levels of severity: Level 3 requires very substantial support; Level 2 requires substantial support; Level 1 requires support. Individuals with severe difficulties in verbal and non-verbal communication, along with highly inflexible behaviour and extreme difficulty coping with change, are identified under Level 3 while those displaying milder difficulties in communication and a capacity to switch between activities are at Level 1.

Intellectual disability, language impairment, mental health problems, epilepsy, genetic and medical conditions are known to be associated very frequently with ASD (Simonoff et al., 2008; Spence & Schneider, 2009). Focusing on mental health issues and psychiatric conditions associated with ASD, Siegel and Gabriels (2014) claim that 11% of young people (under the age of 21) with ASD make frequent visits to hospitals with mental health problems and externalised aggressive behaviours. This report is substantiated with the findings of a systematic review by Hudson, Hall and Harkness (2019): individuals with ASD are four times more susceptible to depression than people without ASD. These researchers found around 14% of those with ASD were also diagnosed with clinical unipolar depression. The severity of their depression was reported to be such that at least 18% of children between 6 and 18 years had frequent suicidal thoughts or even attempts (Dickerson Mayes et al., 2015). Apart from depression, the National Institute for Health and Care Excellence (NICE) guidelines for ASD (2017) identify anxiety disorders, Attention Deficit Hyperactivity Disorder (ADHD), conduct disorders, mood disorders, Obsessive-Compulsive Disorder (OCD), Body Dysmorphic Disorder (BDD) and Post-Traumatic Stress Disorder

(PTSD) as frequently associated mental health issues with ASD. Also, according to Veatch et al., (2017), sleep disturbances and insomnia are very common and can be as high as 50-80% among persons with ASD. The same source found a high correlation between limited sleep hours and greater severity of ASD and mental health problems. Overall, these studies highlight that people with ASD also need significant support with their mental health and emotional wellbeing.

Epilepsy, constipation and related gastrointestinal disturbances such as diarrhoea, acid reflux, and abdominal pain are some of the highly prevalent medical health problems faced by children with ASD (Coury et al., 2012). A study by Spence and Schneider (2009) indicates that a significant number of children with ASD (between 5% and 46%) experience epilepsy. Gastrointestinal problems co-existing with ASD are also common and these double the chance of sleep disturbances, and vice versa. It can be seen that mental and physical health are intertwined, and a holistic approach to address body and mind as interrelated factors would seem beneficial.

2.1.4 Autism advocacy and the neurodiversity movement

In contrast to those diagnostic models where symptoms and characteristics are categorised by people who have not lived the lives of people with ASD, a self-advocacy neurodiversity movement to provide voice for individuals with ASD is growing. The neurodiversity movement acknowledges the variance in how people experience the world. It considers that, where one's ability to communicate and process information is different from the typical trend, this is simply one such form of neurodivergence (Farmer, Ciaunica & Hamilton, 2018). People with ASD display a wide range of abilities; while their behaviour may appear different from those without ASD, they are increasingly being accepted in society (Autism and Neurodiversity, 2019). This movement criticises the notion that ASDs are pathological medical conditions in need of diagnosis, normalisation and cure (Straus, 2014). These self-advocates prefer to be addressed as autistic individuals; autism is an integral part of their identity and not something that needs to be cured. The principles of this neurodiversity paradigm state that there is no valid way to claim one normal or one healthy brain or one right way of neurocognitive processing; rather, there are infinite ways of neurocognitive processing and people with autism have their own unique ways. Just like any other form of

diversity in society, such as skin colour, ethnicity, language, neurodiversity is also subjected to ‘social dynamics including dynamics of power and oppression’ (Walker, 2020).

The movement started in the early 1990s as a splinter from the Autistic Rights Movement; the term ‘neurodiversity’ had been coined in 1988 by Judy Singer, an autistic sociologist (Walker, 2020). The movement has gained recognition and acceptance over the years through media, authors, families and researchers. A biopic of Temple Grandin (2010) identifies individuals with ASD as different and not less. Similarly, in a bestselling book *NeuroTribes*, Silberman (2015) describes how the neurodiversity movement approaches autism as a disability rather than as a disorder or disease. Several families, autistic adults, clinical practitioners and researchers have raised concerns around current research priorities and the way in which funds are spent. They claim that monies are hardly ever spent on what is actually needed. For instance, Pellicano, Dinsmore, and Charman (2014) highlight that many stakeholder groups were dissatisfied with research that was not directed towards interventions, services, creating awareness, acceptance and adaptation in society. Instead, they regard research as giving a greater prominence to the search for a cure, which attempts to change the core of what autistic people are. They believe that research outputs are meaningful only if they enhance the quality of life of the people, giving them autonomy and independence by modifying the environment to accommodate the differences. For instance, some suggestions include developing autism-friendly work environments, enhancing access for persons with autism who are talented, resourceful and able to manage their life independently. For those who need substantial lifelong support, they highlight the need to develop useful services that will support them to live with their natural neurological dispositions, and will reverse internalized oppression. Along similar lines, autism activists, eminent health economists and psychiatrists including Kapp, Gillespie-Lynch, Sherman, & Hutman, (2013), Grandlin (2012) and Baron-Cohen (2017) have questioned attempts to provide a cure for autism and have expressed their support for the neurodiversity movement, arguing that research should reflect and accept this variation within human diversity.

This present research was designed to include children on the autism spectrum with a range of abilities within heterogeneous groups. Similarly, the intervention was designed to support existing abilities and strengths rather than attempting to modify behaviours that did not fit within societal norms. This clearly fills a gap in currently existing provision, as discussed in the following section.

2.1.5 Interventions for children with ASD

There is a long list of intervention options for children with ASD. In the UK, NICE guidelines recommend five categories of such interventions. Psychosocial interventions for core problems, pharmacological interventions, interventions for co-existing problems, interventions for life skills and dietary interventions are mentioned. When psychosocial strategies are discussed, the guideline recommends that these are in line with the child's developmental level and support the development of socio-communication skills; play-based techniques, therapist-modelling and video-interaction-feedback techniques with the involvement of parents, carers, teachers and peers are recommended. Furthermore, it is suggested that interventions for life skills should focus on coping strategies and accessing community services. For those children with verbal and cognitive capacity, CBT is recommended to address anxiety and mental health. In addition, emotion-recognition training, visual schedules, structured worksheets and cognitive activities incorporating the child's special interests are also considered for co-existing problems in ASD. Fewer psychosocial recommendations are made for children who are non-verbal and/or for heterogeneous groups.

Still, and in spite of these recommendations, the findings of a survey looking at services used by families raising children aged seven and under with ASD across Europe revealed that 25.2% of children in the UK, and 29% in Ireland, received no intervention. This is the highest proportion across Europe (Salomone et al., 2015) and it is likely that, due to a lack of early intervention, school-going children present with greater problems. It is also possible that, because of long waiting lists, there are delays in the formal diagnosis of ASD. It is likely that most children will not be diagnosed or receive an intervention until they reach school age. Hence, the current study focused on children around 8-12 years, and notes that identifying interventions that are useful in an educational setting is most important. Some of the intervention approaches are discussed from a research perspective in the following section.

2.1.5.1 Available evidence-based approaches for children with ASD

Amongst several approaches promising intervention results, there are only a handful of approaches which have demonstrated evidence of their effectiveness for children and adolescents with ASD (Simpson, 2005). The National Autistic Society (NAS) and the National Professional Development Centre on Autism Spectrum Disorder (NPDC) recognise a range of approaches which can be broadly classified as communication-based, behavioural and educational. This list includes some established and evidence-based examples, as well as some which are emerging: Picture Exchange Communication System (PECS) (Bondy & Frost, 1994); Treatment and Education of Autistic and Communication Handicapped Children (TEACCH) (Watson, 1985), Applied Behavioural Analysis (ABA) (Smith & Eikeseth, 2011), Pivotal Response Training (PRT), Early Start Denver Model (ESDM), or the Developmental, Individual-difference, Relationship-based (DIR/Floortime) intervention, sensory integration (Lang et al., 2012) and speech language therapy (Goldstein, 2002; Adams et al, 2012).

Salomone et al., (2015) steered an online survey across Europe among families of children with ASD aged seven years or younger to find out which interventions they preferred for their children. The results showed that speech and language therapy (64%) as well as behavioural, developmental and relationship-based interventions (55%) were commonly used. Similarly, according to the two US-based surveys conducted by Becerra et al. (2017) and Green et al. (2006), the most sought-after interventions by parents of children with ASD were speech and language therapy. In Green et al's (2006) study, 70% of parents used speech and language services. The need to develop ways to support communication is one of the reasons why speech and language therapy has been in such a high demand. The survey by Green et al., (2006) also revealed that parents often used more than one intervention approach: on average, parents used seven different approaches for their children with ASD. Among these, ABA, sensory integration and visual schedules were preferred after speech and language therapy. Only 2.4 % and 16% of children on the autism spectrum participated in DMP and music therapy respectively, and DMP stood in 55th position on a list of treatments used by parents. It was also noted that several educational institutions and families implemented TEACCH and PECS for communicating with children using visual aids. Likewise, in the recent 2017 survey, neither DMP nor any arts therapies were included, even though they were present in 2006 survey.

Dietary interventions such as gluten-free/casein-free (GF/CF) diets are generally regarded as ineffective (Hyman et al., 2016). However, 37% of the respondents used this special diet in an attempt to reduce behavioural problems, and 50% of parents reported to be using pharmacological treatments. This reflects on the gap in research evidence reaching desperate parents trying to find a way of managing their child's ASD and awareness levels. It also highlights the effort and time that the caregivers have to invest to find the suitable intervention from a range of evidence which can be costly and time-intensive and may not necessarily be efficacious.

Some of the widely used psychosocial interventions will be briefly discussed here. ABA is one of the intense behavioural approaches that has been shown for three decades to be effective in reducing disruptive behaviours typically observed in individuals with ASD, such as self-injury, tantrums, non-compliance, and self-stimulation. ABA teaches language skills, academic and self-help skills and cognitive adaptive skills to children with ASD and has been widely recognised as an evidence-based approach especially in the USA (Howard et al., 2005; Dawson, 2008; National Autism Center, 2009). This approach was developed based on operant conditioning (Skinner, 1953) where positive and negative reinforcement techniques are used to increase or decrease and acquire certain target behaviours and skills. It highlights active learning, breaks down the tasks from simple to complex and extensively uses discrete trial teaching (DTT), a highly structured way of tailoring prompts and rewards to evoke desired behaviours (Lovaas, 1987).

A similar behavioural training development of ABA principles that is recognised by the National Autism Centre (2009) and is an established approach for children from 2 to 16 years is PRT (Vismara & Bogin, 2009). The major difference between ABA and PRT is that PRT recommends training in a more naturalistic environment to promote generalization of skills, unlike the clinical table-chair setting used in ABA. PRT involves family members, staff, and peers as intervention agents to promote social and educational skills (Koegel, Koegel & McNERNEY, 2001; Jones, Carr & Feeley, 2006; Mohammadzaheri, Koegel, Rezaei, & Bakhshi, 2015).

Other behavioural approaches are PECS and ESDM. PECS has six phases to be implemented along with a reinforcer inventory with the goal to assist spontaneous and functional communication (Bondy & Frost, 1994). The first phase starts with teaching how to communicate and gradually builds on to communicate phrases, questions and finally up to

the level of commenting. ESDM merges ABA with some principles from developmental theories and a child-led approach with objectives to expand social communication, motor skills, learning, and engagement through enjoyable, play-based interactions (Rogers & Dawson, 2010). Studies show that this approach can be used with children as young as 12 months.

TEACCH (Schopler, Mesibov & Hearsey, 1995) is an individual- and family-centred plan which relies on visual support as one of the principles of a structured teaching approach. It works to support the independent and productive living of individuals with ASD. This approach focuses more on the strengths of children with ASD instead of trying to reduce the deficits. Although this is a structured teaching approach it slightly deviates from the approaches described earlier by capitalising the interests of the children and cultivating strengths. Another approach classified as emerging by the National Autism Centre (2009) is quite distinct from the behavioural approach; it is a relationship-based intervention called DIR/floortime (Wieder & Greenspan, 2003). This consists of non-directive, child-led natural play activities where the adult literally joins the child on the floor to enable emotional connection and shared attention. This approach values reciprocated engagement, more multifaceted emotional, social connections as well as abstract thinking and ‘climbing the symbolic ladder’ of development (Wieder & Greenspan, 2003: 425). As well as the above-mentioned approaches, there are many others which include some behavioural, developmental and relationship-based elements. The number of available approaches is as diverse as the spectrum of children in this umbrella term ASD. There is no ‘one size fits all’ to address the diverse needs of the population.

Although these evidence-based approaches have data to back up their usefulness, many clinicians and researchers raise concerns about their attitudes, goals and methods (e.g. Silberman, 2015; Baron-Cohen, 2017; Mottron, 2017). The most common criticisms of the behavioural approaches are that they are addressing only the problems faced by children with ASD, ignoring the scope to focus on their strengths (Mottron, 2017). Further criticisms from the perspective of the neurodiversity movement are that these interventions encourage socially appropriate behaviours which are normative and norm-centric by oppressing the ASD community and attempting to change their core characteristics. It is unclear whether effects achieved in this way are generalisable from the clinical setting to real life situations, whether they lead to holistic development and growth, or enhance the wellbeing of the

children with ASD. Nind (1999) argues that they do not allow children to *express* who they really are, and they fail to promote happiness and the unique strengths possessed by the autism community. First person accounts of the experience of such programmes Furthermore, NICE (2020) recommends CBT and emotion recognition training for co-existing mental health issues faced by children with ASD. But these are only suitable for children with appropriate verbal and cognitive capacity to engage in such interventions. A question is raised about how to reach children at their own level, how to communicate effectively and to promote their strengths. It is argued that arts therapies, including dance, music, art and drama, have the potential to penetrate through the barrier of verbal communication by incorporating non-directive, creative and predominantly non-verbal strategies to support the wellbeing and growth of children and young people with ASD. The next section introduces arts therapies briefly and explores the relevance of DMP for children with ASD from a theoretical perspective in a greater depth.

2.1.5.2 Arts therapies and children with ASD

Arts therapies is a collective term that refers to the disciplines of art therapy/psychotherapy, music therapy, dramatherapy and dance movement psychotherapy, all of which use the artistic medium for therapeutic exchange, engagement and eventually to achieve therapeutic change (Karkou & Sanderson, 2006). In the UK, each of these disciplines has their professional associations and committees along with accreditation from the Health and Care Professions Council (HCPC) or UK Council for Psychotherapy (UKCP). Although there are crossovers and similarities, they are also distinct in terms of history, artistic preference and models of practice. For example, Karkou and Sanderson (2006) argue that human voice and music are the primary medium in music therapy (MT), it is body and movement for DMP, colours, papers, craft materials in art therapy (AT) and a combination of all these in addition to words, costumes and props become the medium for expression in dramatherapy (DT). All these modalities are, however, held together within a frame by common factors such as creativity, imagery, symbolism, metaphor and placing the client-therapist relationship as the heart of the process.

There is a long tradition of arts therapies with children in special educational needs settings and children with ASD (Oldfield, 1995; Karkou & Sanderson, 2006). Also, even

before the emergence of arts therapies, movements such as the arts for all and the arts for health by community and health setting artists have paved the way to arts therapies for children with ASD. Some individuals with ASD display gifted artistic abilities, especially in music, including having greater abilities to recognise pitch and timbre, excellent broad musical memory and high levels of aptitude to process melodic and rhythmic intricacies and many more (Lim, 2010; Ockelford, 2013; Fancourt & Finn, 2019). Although those extraordinary artistic skills are not necessary to take part in arts therapies, an inclination and interest to engage with the artistic medium does support the use of arts therapies. As per the survey results of Carr, Tsiris and Reigersberg (2017), music therapists most frequently work with children who have developmental and behavioural disorders. There have been a large number of research studies and projects in MT and children with ASD compared to other arts therapies (Oldfield, 2016; Blauth, 2019). MT, for example, has shown promising results in social-skills, communication, initiating behaviour, social-emotional reciprocity, sensory perception, cognitive and many other aspects in children with ASD. This is demonstrated by: several narrative literature reviews (Accordino, Comer & Heller, 2007; Simpson & Keen, 2011); a systematic review with meta-analysis which included nine quantitative studies and a sample size of 76 (Whipple, 2004); an initial Cochrane review by Gold and colleagues in 2006 which was then updated in 2014 (Geretsegger et al., 2014), with a pooled sample size of 165 participants from ten studies (Buday, 1995; Brownell, 2002; Farmer, 2003; Thomas & Hunter, 2003; Kim, Wigram & Gold, 2008; Lim, 2010; Arezina, 2011; Gattino et al., 2011; Lim & Draper, 2011; Thompson, 2012) and abundant number of case studies (Bruscia, 2011).

The TIME-A project (Geretsegger, Holck & Gold, 2012), with 364 children from nine countries did conduct a large RCT which concluded that improvisational music therapy was not beneficial for symptom reduction in children with ASD. This left many researchers, families and practitioners initially puzzled, but they concluded that the lack of a positive result here was due to a lack of fidelity measures to monitor the consistency of the intervention across the countries and on the use of ADOS as the outcome measurement tool, which is primarily for diagnostic purposes. Another Canadian RCT delivered individual music therapy and measured outcomes using rsfMRI and a battery of questionnaires (Sharda et al., 2018). Findings did indicate that 8–12 weeks of MT can improve social communication and functional brain connectivity.

Research in the fields of Art therapy and Dramatherapy with children on the autism spectrum is not as developed as in Music therapy; studies on effectiveness are scarce and samples are relatively small. Yet, there are promising indications that AT provides tactile-visual experiences which may facilitate change in children with ASD. AT has also been found useful as an early intervention tool for engaging with children (Kellman, Epstein & Mcveigh, 2001; Martin, 2009; Schweizer, Knorth & Spreen, 2014; Alter-Muri, 2017). Noble (2001) describes the group art therapy process as an effective tool for creating social reciprocity in children with ASD. In addition, Evans and Dubowski (2001) in their book describe a case study in which AT supports the enhancement of symbolic thinking of the participants, as well as the development of imagination, improvement in self-esteem and sense of self, and confidence. In another study, Sensory-Based Relational Art Therapy Approach (S-BRATA) addressed the emotional wellbeing of a child with ASD and explored attachment patterns and sensory integration dysfunction (Durrani, 2014).

Similarly in DT, many case studies have been reported in which social skills such as developing friendships and relating to people are recurrent themes (Lewis & Banerjee, 2013). For instance, Tytherleigh and Karkou (2010) describe the development of therapeutic relationship using embodiment projection and role play model. Roundabout Dramatherapy has published a qualitative study on the benefits of DT from parents and teacher's perspective on social skills and conducted a mixed-methods feasibility study for a RCT called Shine a Light on Autism (Godfrey and Haythorne, 2013; Cedar, Haythorne & Ramsden, 2019). A quantitative study by D'Amico, Lalonde and Snow (2015) from Canada also showed improvements in social skills. Overall, studies have indicated improvements in sociability, ability to identify the emotional content of complex non-social stimuli, eye contact and social engagement. However, there is minimal evidence to draw conclusive interpretations.

2.1.5.3 Dance movement psychotherapy and ASD

Dance/Movement Therapy, or Dance Movement Psychotherapy³ (DMP) as it is known in the UK, is one of the arts therapies, next to music, drama and art psychotherapy, that aims to support the integration of mind and body through the use of creative movement expression [Association of Dance Movement Psychotherapy (ADMP UK), 2013; American Dance

³ Other titles known for the discipline internationally: dance movement therapy, dance-movement therapy, dance therapy, dance psychotherapy, movement therapy and movement psychotherapy.

Therapy Association (ADTA, 2018)]. Within DMP, the body is viewed as a container of experiences which can be communicated through movements. DMP is used with a wide range of client populations in several settings and is offered by qualified practitioners who, in the UK, undergo Master's level training for a minimum of two years (ADMP UK, 2013). Methods such as rhythmic circle dance formations, group or dyadic improvisation and expressive movement processes are tailored to the needs of the individual or group (Levy, 1988; Meekums, 2002; Payne, 2003). In DMP, movement is viewed as symbolic representation and as evidence for both conscious and unconscious processes (Meekums, 2002; Karkou & Sanderson, 2006). The interdependence between movement and emotion (Bernstein, 1975; Rossberg-Gempton & Poole, 1992) is thought to enable the unconscious to unfold (Levy, 1988; Fischman, 2001) thereby promoting health and growth towards personal wellbeing (Fischman, 2001). Some of these ideas are also relevant to working with children with ASD.

DMP interventions for children with ASD focus on body-informed and non-verbal interpersonal exchanges that attempt to meet the children empathetically (Adler, 1968; Siegel, 1973; Kalish, 1976; Erfer, 1995; Loman, 1995; Parteli, 1995; Torrance, 2003; Tortora, 2006; Scharoun et al., 2014). Mirroring and other techniques that enable kinaesthetic empathy in ASD populations are commonly stated in clinical practice reports as ways of supporting non-verbal relationships (Wengrower, 2009; Tortora, 2010; Devereaux, 2012; Martin, 2014). This technique is similar to those used in the autism field such as intensive interaction (Nind & Hewett, 1988), where the value of meeting the child non-verbally is acknowledged. However, mirroring within the context of DMP practice does not refer to simply copying one's actions but also involves an affective attunement to the non-verbal presentation and movement preferences of the child (Meekums, 2002). Whilst mirroring and similar techniques are used extensively in DMP practice, the value of working in this way with children with ASD remains largely anecdotal with limited systematic evaluation.

There are reports that DMP can work with *bringing change* for both therapists and individuals with ASD (Kalish, 1977; Loman, 1995; Scharoun et al., 2014). This is unlike many other interventions where the change is expected only from individuals with ASD. Pioneers of DMP working with children with ASD fostered children's creative expression and showed an appreciation of both their strengths and weaknesses (Adler, 1968; Erfer, 1995; Siegel, 1973). "Looking for Me," a video documentation by Adler (1970) set the foundation

to the use of attuned rhythm-based interventions in helping to support both self-synchrony and interactional synchrony. Using mirroring as one of the key techniques, therapists and clients were supported to experience each other's viewpoint empathetically. Mirroring remains an important tool used by dance movement psychotherapists to the current date. It often involves an affective attunement to the non-verbal presentation and movement preferences of the children (Meekums, 2002). Stern (2000) argues that these attuned processes facilitate integration and organization of sensory experiences and self-regulation, which are crucial for the development of intersubjectivity which can further social communication in children with ASD. The outcomes of DMP intervention are thus, assumed to be the changes imbibed out of self-will or autonomy as opposed to changes that are imposed. Thus, the approach in DMP varies principally from other available interventions to children with ASD and it is scalable in a wide range of settings including, for instance, special educational needs (SEN) schools, home, hospital, and community settings. Early DMP practitioners have highlighted the potential of DMP to offer better mental health, more independence and creative opportunities for early interventions for children with ASD (Adler, 1968; Siegel, 1973; Kalish, 1977; Erfer, 1995; Loman 1995; Parteli, 1995; Scharoun et al.,2014). These have largely been documented using case studies and clinical reports. In the past decade, studies with a clear research frame have emerged, which have not been systematically reviewed leading to the completion of systematic literature review conducted as part of this PhD (see chapter four)

2.1.6 Explanations of why DMP may work for children with ASD

Looking at the available literature in arts therapies and ASD reveals that arts therapists have relied upon several popular theories around ASD and neuroscience to understand what is in arts therapies that can facilitate change in individuals with ASD. Some of the most prevalent theories in relation to ASD refer to the Theory of Mind (ToM). ToM assumes that individuals with ASD display a different pattern in the way they perceive the world and connect with their environment: there is a cognitive mechanism involved in receiving intentions and emotions of other people's actions (Gallagher & Varga, 2015). Developments of ToM are the Theory Theory and the Simulation Theory, two opposing views, which however agree that ToM is the determining factor for social cognition (Spaulding, 2014). The Theory Theory argues that ToM stems from pre-existing implicit theories that gets constructed and imprinted

based on the co-existence and inter-relationship between certain behaviours and mental states. These imprinted implicit theories then deductively predict our future behaviours. On the other hand, the Simulation Theory presumes that ToM derives depending on our ability to imagine, feel and think of our own actions while attributing this to the person of interest in a specific situation and context (Spaulding, 2014).

The embodied Simulation Theory takes a new stance by moving slightly away from the original Simulation Theory as this highlights the role of sensory motor mirroring system in order to perceive others' mental states. These neurons fire during one's own execution of an action, as well as during the perception of the same action being performed by other agents (Di Pellegrino et al., 1992; Gallese et al., 2002). During perception of others' actions, the sensory motor neurons corresponding to the actions get fired and allow us to bodily simulate them. Later, by matching this representation with memorized mental states related to similar activation patterns we relate to the intentions, emotions and empathise with the agent (Buccino & Amore, 2008; Gallese & Sinigaglia, 2011). The presence of an extensive network of sensory motor mirroring regions suggests that this network is not limited to observation–execution matching. In fact it plays a major role in social interaction as that is involved in advanced functions like imitation, understanding the thoughts, intentions, emotions, empathy, speech and language comprehension and production (Chartrand & Bargh, 1999; Carr et al., 2003; McGarry & Russo, 2011; Aragón et al., 2014). Empirical research findings support this theory as people with effective communication skills and, research on mimicry reveal automatic and unconscious activation in the motor areas in relation with the corresponding mental states (Eigsti, 2013). Dance movement psychotherapists use mirroring as one of the major techniques while working with children on the autism spectrum. These theories are assumed to supplement the explanation of the technique in favour of the physiological functioning mechanism of therapeutic change.

First-hand accounts and also empirical studies using Electroencephalography (EEG) mu rhythm suppression, Transcranial Magnetic Stimulation (TMS) and functional Magnetic Resonance Imaging (fMRI) studies provide indication for differences in the sensory motor mirroring system influencing on organization and regulation of action, posture, emotion, cognition, communication and other motor activities of individuals with ASD (Oberman et al., 2005; Dapretto et al., 2006; Robledo, Donnellan & Strandt-Conroy, 2012). However, this is not the only explanation of ASD available. For example, Wang and Hamilton's (2012)

social top-down response modulation (STORM) model argues that the differences in individuals on the autism spectrum could be noticed in the top-down modulation of mimicry and not in copying the actions. Hamilton (2008) explains that there is difference between emulation tasks and mimicry tasks. Individuals on the autism spectrum can perform well on emulation tasks which are goal directed. But they perform differently on mimicry which is basically a social behaviour involving copying the detailed kinematic features of an observed action (Wang & Hamilton, 2012). They may be able to consciously imitate others, however they showed less automatic mimicry. More recently, it has been accounted that individuals with ASD face challenges in encoding prior knowledge, which could be formulated within neurocomputational accounts within the predictive coding framework knowledge (Clark, 2013; Friston, Lawson & Frith, 2013; Lawson, Rees & Friston, 2014; Palmer et al., 2017). The concept of compromised social cognition in children on the autism spectrum was studied and supported through Bayesian analysis of whole-brain functional connectivity using resting-state functional magnetic resonance imaging (rsfMRI) (Venkataraman et al., 2015). Furthermore, both under and over connectivity of core neural connectivity is a trademark of ASD. Under-connectivity of frontotemporal and cortico-subcortical networks and overconnectivity of sensory networks have been reported in ASD and these connections have been found critical to verbal and social communication skills. It is assumed that DMP the techniques and the variety of props used would perhaps stimulate and enhance the networks which are under-connected as well as facilitate relaxation process to manage overwhelming stimulation due to overconnectivity. Various types of props are judiciously chosen to provide diverse experiences to cater hypo and hyper sensitivities of children with ASD. Links to these techniques and procedures are explained in depth in chapter five.

Philosophically advancing in line with the embodied simulation theory, DMP discusses the development of intersubjectivity in individuals with ASD to establish a meaningful therapeutic relationship. The concept of intersubjectivity stems from phenomenology and DMP researchers adapt an embodied cognition approach to ASD (Hildebrandt, Koch & Fuchs, 2016). The assumption here is that embodiment is the integration of body/mind and it is mediated through bodies. From a physiological sense, the body facilitates perception and interaction with the world as body movements and sensations are essentially linked to neural sensory systems (Pylvänäinen, 2010). Hence DMP focuses on embodiment by providing opportunities for a wide range of movement experiences, dance

and relationship play (Sherborne, 2001). Therapeutically, this is the first phase where the priority in DMP is given to the *sensory contact* with the environment and activate one or more senses. Schumacher and Calvet-Kruppa (1999) in their analysis system to evaluate the quality of relationship during music therapy (The Assessment of the Quality of Relationship, AQR), describe this phase as transition from ‘I without me’ where the child stays trapped in a different world to ‘I notice something’ where the child has a short reaction to an event around. Since AQR utilises observations using movement-based observation system, it is very relevant to expand the understanding of DMP processes.

In the next phase, DMP goes in line with the embodied cognition approach’s aspects on *sensory perception* which can facilitate to the state of being aware of one’s own body movements in the environment. The assumption here is that for an individual to have a *functionalized contact or perceive an object*, regardless of the mode of sensory input, the sensory receptors must react to the stimulus and signal a shift from their baseline state (Fuchs, 2005). The AQR identifies this as ‘I use something for my own needs’. Here the role of movement becomes inseparably linked to innate impulses for survival, exploration and learning through sensory and physical experiences and thus leading to self-awareness or the sense of self within space. Here, at least two senses are co-ordinated. In music therapy, from a child’s perspective the Assessment of the Quality of Relationship tool (AQR) describes it as ‘I hear myself’, which in DMP would be equivalent to ‘I feel my body’. For example, Goddard Blythe (2005) enumerates how push/pull type of movements which demand focus and concentration on the movement and on being within one’s body in space, activates vestibular system and subsequently impacts on balance, posture and eye movements. Thus, for this movement, proprioception, visual and vestibular systems need to co-ordinate. This shows that our experience of the world depends on our perceptions which result from self-referential interaction with our surroundings. Thus, the goal in DMP at this stage would be to create positive movement experiences by engaging different senses through movements and physical interaction (Pylvänäinen, 2010). The brain (sensory motor mirroring system) acting as the interface between mind and body, thereby regulates the influence of the body’s experience of the world on mind and vice versa. This reciprocal conjunction between body and mind is one of the core principles of DMP.

Once the relationship with own self is established, the resulting phase is *intersubjectivity* or *contact to other people*. Kasari et al. (2010) remarked that children with

ASD easily engage with great focus on non-living objects rather than people. DMP encourages children to have a sense of their own body in relation to presence of another person or people that is self-in-relation-to-others. Here, children would take a step towards investigating if another person in the surrounding perceives the stimulus in the same way as they do. For instance, within a dyadic or a group DMP context, when children perform any movement such as spinning, rocking, sliding, twisting and balancing amongst others, time and space are felt in a physical and conscious sense in relation to the other moving bodies in the same space. In order to perform these movements with others, the senses must work harmoniously, and this becomes the embodied means by which concepts, feelings and reactions can be discovered and internalised. In simple terms, DMP's adapted version of the Assessment of the Quality of Relationship tool (AQR) would be 'I feel my body and want to know if the other person perceives this movement in the same way'.

The sensory impressions created at intersubjectivity phase using social referencing, might lead to the another stage called *interactivity* with another person. The sensory imprints come together, integrate and get processed to bring out meaningful exchanges between sender and receiver. From DMP's perspective children at this phase would be not only do some movements but they will be ready to assimilate some movements from the other moving partners as well. They will be able to recognise movement patterns and manipulate those patterns to respond to the moving partner. For instance, if a child has fast, light and indirect movements and if the therapist introduces slow, heavy and direct movements, the child at this stage would be able to recognise that the partner is moving differently and may be able to incorporate some qualities, say by slowing down the movements the child might try to match with the therapist's movements timing. Description from the child's view would be 'I feel my movements and I feel yours'.

Inter-affectivity is another phase where a shared emotion develops between two movers. Mundy, Gwaltney and Henderson (2010) enumerate that for the experience of shared emotions to happen a parallel processing of sensory information about oneself (interoception or proprioception), and others (exteroception) must take place. This simultaneous processing of information of one's own movements and other's movements or bodily states becomes the route for empathy. This phase is vital for a meaningful, playful and dynamic interaction. This phase becomes the starting point of DMP and lays a foundation for a relationship and children build their own social, emotional and expressive structures. Eventually, they gain the control

over the epoch of readiness to initiate the contact, build relationships, reciprocity, turn-taking and thus regulate their choices. From child's view this phase can be described as 'I feel our dance'. The assumption in DMP is that this dance of concord and discord opens up new possibilities for meaningful social interaction.

However, research evidence that provides evidence on whether the above mechanisms are useful for children with autism remain slim. Furthermore, despite several decades of DMP work with persons on the autism spectrum the effectiveness of DMP still remains inconclusive. So far, RCTs with persons on the autism spectrum has been conducted with adults only as indicated by the systematic review conducted by Marchant et.al (In preparation). Out of the seven studies included in this review most had quantitative components (Mateos-Moreno & Atenciadona, 2013; Koch et al., 2015; Hildebrandt, Koch & Fuchs, 2016; Koehne et al., 2016; Manders, 2016) and two qualitative studies (Wadsworth & Hackett, 2014; Edwards et al., 2015). The largest study amongst them was an RCT by Hildebrandt, Koch and Fuchs (2016) with 78 participants. The study found symptom reduction on the overall negative symptoms such as social-emotional reciprocity and engagement in ASD was greater in the intervention group. However, the effect size was only significant at 0.10 level and there was a high amount of data attrition.

A systematic review of the literature on DMP studies with children on the autism spectrum is therefore, needed, as well as well-designed studies on the impact of DMP for children with ASD. Supporting caregivers also becomes an important component of appropriate therapeutic interventions, a topic further explored in the section following.

2.2 Impact of ASD on caregivers

Caring for a child can be rewarding but when pressures go beyond the actual resources available, carers can experience distress, discomfort, stress and burnout. This is common amongst carers of children with ASD (Deater-Deckard, Chen & Mallah, 2015; Crnic & Ross, 2017). The literature indicates that stress and burnout are widely experienced not just by the parents, but it is also common among professionals providing compassionate services to other people, including therapists and teachers (Skaalvik & Skaalvik, 2010; Benevene & Fiorilli, 2015). Despite intense work from caregivers only some children become independent while some children remain dependent throughout their lives (WHO, 2019). In

light of mounting demands placed on the caregivers and lack of resources and support available to them, high amount of stress and burnout are not uncommon (Montes & Halterman, 2007; Deater-Deckard, Chen, & Mallah, 2015). 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. This makes caregivers of children with ASD more vulnerable to depression, anxiety, and somatic symptoms when compared to other caregivers (Yirmiya & Shaked, 2005; Lee, 2013).

Stress is a highly subjective experience of negative emotions accompanied by predictable biochemical, physiological, cognitive, and behavioural changes that are directed either towards altering the stressful event or accommodating its effects (Patnaik, 2014). Carpenter and Steffen (2004) identify the broad effects of stress which include physical and/or psychological symptoms such as depression, fatigue, restlessness, elevated neural and hormonal pathways or an increased risk for ulcers or heart diseases. According to Lazarus's stress model (Lazarus, 1993), there are four aspects of parenting stress with frequent interactions between each other: the agent of stress, the appraisal of stress, coping mechanisms and stress reaction. The following sections lay out definitions of stress in relation to the caregivers and different factors related to stress in caregivers.

2.2.1 Stress and burnout in caregivers of children with ASD

Existing literature shows that the stress experienced by caregivers of children with neurodevelopmental disorders and special educational needs such as Autism Spectrum Disorder (ASD) is much higher than the caregivers of typically developing children and other types of disabilities (Samadi, McConkey & Bunting, 2014; Valicenti-McDermott et al., 2015; Najmi et al., 2018). It was identified by Schaufeli, Leiter and Maslach (2008) that caregivers with long-term stress experience burnout which is characterised by emotional exhaustion, depersonalization, and reduced personal accomplishment. As a consequence of high levels of burnout, special education teachers exhibited a reduced amount of compassion toward their students, were less tolerant and patient towards interruption in the classroom, felt more exhausted, perceived a lack of change in the child's progress and appeared to depersonalize them when compared with their counterparts working in mainstream classrooms.

Parents experienced decreased parenting self-efficacy beliefs, guilt, withdrawal and helplessness. Earlier, it was hypothesised that cold and distant parenting were a potential cause of ASD (Feinstein, 2010). Currently, this idea has been debunked by researchers and clinicians. However, some terms such as ‘refrigerator mothers’ still have a detrimental impact as caregivers are made to feel culpable if their children have ASD (Gray, 1995; Furnham & Buck, 2003; Blauth, 2019). Societal beliefs become ingrained in people’s minds, and can lead to stigmatised views, blame and self-guilt, increasing the load on the caregivers. In addition, the trauma of a diagnosis of ASD, seeing their children struggle, experiencing a communication breakdown can be challenging in themselves. There are reports indicating that parents are only as happy as the least happy child (Fingerman et al., 2011). The impact of burnout in caregivers was not just on their personal lives. In fact, Kristensen et al. (2005) noticed that physical and psychological exhaustion affected their relationship with the children, dynamics with the family members, work life and commitment to their work as well. Furthermore, both teachers and parents experiencing burnout are more likely to experience problems with their physical health, higher levels of anxiety, greater occurrence of depression and lower levels of overall wellbeing (Dabrowska & Pisula, 2010; Watson et al., 2011; Fernet et al., 2012).

2.2.2 Factors associated with stress and burnout of caregivers of children with ASD

The reasons for the experience of stress in caregivers can be broadly categorised under the following factors: child-related factors, family-related factors, socio-cultural factors and political factors, each of which is discussed below.

Child-related factors: The impact of some of the relevant child-related characteristics may mediate as stressors in caregivers of children with ASD. Child variables, such as the child’s age (Gray, 2002), their cognitive or developmental level (Peters-ScheffGer et al., 2012), may act as some of the stressors (Giovagnoli et al., 2015; Barroso et al., 2018; Yorke et al., 2018). At early years of the child’s development, the process of obtaining a diagnosis, understanding and accepting the diagnosis, looking for suitable interventions, attending frequent appointments, and dealing with the child’s communication and behaviour difficulties can be painful and a major source for stress among primary caregivers (Greeff & van der Walt, 2010). It has been noted that the presence of emotional and behavioural problems amongst children

considerably predicts the caregiver's distress (Yorke et al., 2018). Many studies have indicated a positive relationship between the severity of ASD symptoms and general stress in caregivers (e.g. Konstantareas & Homatidis, 1989; Hastings & Johnson, 2001; Bromley et al., 2004; Benson, 2006; Davis & Carter, 2008). However, there has also been research which indicates no correlation between parenting stress and the severity of ASD symptoms (Estes et al., 2009; Ben-Sasson et al., 2013; Giovagnoli et al., 2015). This shows the lack of consensus in the debate.

Family-related factors: Earlier studies highlight that factors such as gender discrimination, difficult family dynamics, disturbed family routines, strained family relationships, marital status/single parenting may have an impact on depression and parenting stress (Lutz et al., 2012; Senthil, 2016). Insecure and disorganised parent-child attachments and relationships are not uncommon (Rutgers et al., 2004; Naber et al., 2007). Parenting stress was also found to have strong associations with marital discord, child neglect and abuse (Brezis et al., 2015). When functioning well, family, such as the partner/spouse, immediate or extended family members, can be a positive experience and act as a resource and support. Practical contributions towards childcare, household chores, and financial backing as well as emotional support from family can enable parents to cope with the challenges that caring for a child brings. For teachers, it was found that salient factors especially relationship difficulties, marital status, gender, family bereavement, illness, family status and childcare issues tipped them over the edge (Stasio, Fiorilli & Benevene, 2017). It can be noted that Government reports (Carmichael, Callingham & Watt, 2017; DfE, 2016) focus mainly contextual factors: workload, the school's circumstances and the pupil's behaviour in class. The Education Excellence Everywhere White Paper (DfE, 2016) fails to address other factors such as family commitments which can support the mental wellbeing of school staff.

Socio-cultural factors: Three major interlinked factors that play a vital role in the parenting experience are the socio-economic status of the parents, their education level and their social support system (Parkes, Sweeting & Wight, 2015; Shepherd et al., 2020). Regardless of the revenue, parents working in more lucrative and respected occupations were found to report stress more often than parents engaged in low income occupations. Contrastingly, even though lesser financial constraints can enhance a parent's ability to access limited available services (e.g. therapists or good schools) or adequate housing and may shield them from

some of the damaging effects of stress providing a sense of control over one's situation (Sloper & Turner, 1993; Lachman & Weaver, 1998;) they reported higher amount of stress. Families caring for children with ASD often experience social isolation due to the child's need for sameness and routine, the child's oversensitivity to sensory stimuli, or the child's lack of adherence to social norms. Offering respite care, inclusivity, equal opportunities, cutting down tabooing and bullying of children can ease the life of parents in the society (Shepherd et al., 2020). However, in reality, these factors are far from the lives of numerous parents.

Teachers' years of teaching experience, educational background, role conflict, role ambiguity, and lack of administrative support influenced the levels of burnout experienced by the teachers. It is not surprising that teachers may experience higher levels of burnout when they are entrusted with nursing and mothering children with ASD in addition to instructional and curriculum designing duties (Brunsting, Sreckovic & Lane, 2014). Research on stress in teachers (in general not specific to ASD) from Brown and Lan (2015) as well as Glazzard and Rose (2019) has identified some trigger points to these salient factors from the work environment and busy circumstances such as pressure of assessment and catering the academic expectations; the pressure of extracurricular activities; the unforeseen tasks; keeping up with the pace of change; and changes in school management staff. Positive relationships of teachers with children, co-workers, administrators, parents, other professionals and experts can perform as buffers to counter the factors of burnout (Van Droogenbroeck, Spruyt & Vanroelen, 2014). Research also indicates a positive association between the long term wellbeing of caregivers and their work environment in terms of happiness at school and job satisfaction as important shielding factors for burnout risk (Pillay, Goddard & Wilss, 2005; Fave, 2013). Thus, support from the school environment and resources provided by the administration may motivate the teachers to give their best in the classroom.

Political factors: Political stability and the economic growth of the country reflects on the funding, resources, research and framing of the policies on health and future care of children and caregivers of ASD. Having a child with ASD sometimes demands that one of the parents become a full-time caregiver. The family loses one source of income while at the same time paying high costs for specialised ASD interventions. Policies are needed to reduce the impact

of the financial hardships and exhaustion by making resources accessible along with adequate child care services, child-minders, and psychotherapeutic support for caregivers. These all become crucial factors influencing families' wellbeing (Altiere & von Kluge, 2009; Greeff & Van der Walt, 2010).

SEN teachers require exceptional patience, dedication and skill, as well as internal and external resources, to meet the diverse abilities and increasingly varied behavioural, emotional and educational needs of children with ASD (De Stasio, Fiorilli & Di Chiacchio, 2014). However, there is very little training available for caregivers looking after children with ASD. Inadequate rewards (materialistic and non-materialistic) or career prospects (salary is linked to seniority) mean that professionals are not attracted to these roles unless they are driven by internal motivators. This leads to limited staff and few available resources to help cope with the high demands and requirements of such a SEN role (De Stasio et al., 2017). This contrasts with the Teacher Education Theory that advocates that schools pay attention to various individual and contextual factors for supporting teachers (Flores & Day, 2006; Day & Leitch, 2001).

Neece, Green and Baker (2012) argue that these factors provide an outline for the experience of stress. They also argue that parenting stress is transactional in nature, in that there are bidirectional or reciprocal effects and continuous exchanges between a person and the environment. These exchanges play a vital role in the development of an individual. Thinking of parental stress in this way helps us to recognize the impact of reciprocal interactions in a parent-child relationship (Gottlieb, 2007; Sameroff, 2009). Research by Sossin and Birklein (2006) looked at the intricacies of explicit and implicit manifestation of parental stress using Kenstenberg Movement Profile as a movement observation tool informed by a relational frame. They noticed differences in the movement of parents with higher life-stress in comparison with parents with less stress. The former group showed fewer instances of sudden, and thus spontaneous, changes in their movement than the latter group. This was associated with an underlining movement quality of zoning out or freezing.

Overall, the literature clearly indicates that caregivers of children with ASD face enormous layers of challenges. However, resources such as social acceptance, support from the family members, professional help and advice on how to look after children with ASD and psychological support 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.

2.2.3 Interventions for caregivers of children with ASD

As described in the previous sections, some unmet caregivers' mental health needs pose an alarming risk to their wellbeing. During the course of an intervention, the primary targets are the children even though the caregivers' mental health and wellbeing are also at stake (Fewster, Govender & Uys, 2019). Since the caregivers' role is a pivotal factor in the interventions offered to children, support must be offered to the caregiver too. This could focus on caregiving skill development, caregiver-mediated intervention, and awareness programmes which are psychoeducational. A recently published systematic review on quality of life interventions for caregivers of children with ASD synthesised the data from 21 studies between the years 2005-2016 (Fewster, Govender & Uys, 2019). Three different themes emerged from the types of interventions that were offered to the caregivers. The first theme was learning about ASD: interventions supported the caregiver to understand the diagnosis and ASD related information. In the next theme, interventions supported the caregivers on how to help and care for their child with ASD. The last theme focused on providing psychological care, networking opportunities, coaching, provision of resources for the caregivers. These approaches were commonly delivered in a group configuration and also in collaboration with the family using distinct theoretical frameworks, for example the Model of Family Stress (McCubbin & McCubbin, 1993), the Family Partnership Model (Davis & Day, 2010), and the Ecological Validity Framework (Bernal, JimenezChafey & Rodriguez, 2009). Overall, the findings of this systematic review (Fewster, Govender & Uys, 2019) highlight that the content included in the intervention programmes for the caregivers was mainly focused on awareness and education about ASD and how to cater for their child's needs (Bruder, 2000). It can be seen that there is a dearth of content in the interventions for the direct benefit of the caregivers.

There are only handful of studies which have employed psychological and psychotherapeutic interventions to support caregivers of children with ASD (Blauth, 2019). A meta-analysis by Hartley, Dorstyn and Due (2019), pooling the sample from ten mindfulness-based studies around the world with 241 caregivers, calculated Hedges' g effect

sizes using a random-effects model. It has shown promising results in subjective wellbeing immediately post-intervention and also 3 months after 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 of ASD (Altiere & von Kluge, 2009; Ryan & Salisbury, 2012). The NICE guideline (2020) for ASD in the UK recognises the need for respite care, short breaks, advice on welfare benefits, as well as the carer's own assessment of their wellbeing. However, very little of the literature on interventions focuses specifically on the social and emotional wellbeing of caregivers.

2.2.3.1 Arts therapies and caregivers of children with ASD

In recent years, family-centred approaches and interventions targeting school staff in addition to the young person with individualised approaches are increasing in arts therapies (Blauth, 2019). For instance, Pasiali (2010) and Thompson (2019) in their doctoral research projects have explored the effects of family-based music therapy on resilience, parental self-efficacy and supporting positive parenting practice. Teggelove, Thompson and Tamplin (2019) recently published a pilot study which investigated 199 parent-child dyads who received 8 weekly, 45–60 minute, family music-based group play sessions. The authors observed statistically significant results in pre–post parent self-reports: parenting competency was evaluated and better parental responsiveness was seen in those receiving early family services. Similarly, Pasiali (2010, 2012, 2017) has extensively documented the effects of improvisational music therapy techniques with four families who self-reported a history of maternal depression (these did not include children with any diagnosis of disability). The findings broaden the understanding of the impact of music therapy, but also acknowledge variables and limitations which influence the parent-child interaction. Positive results on parent-child communication were also found in a semi-experimental family-based art therapy project in Iran (Moghaddam et al., 2016). Lee and Peng (2017) conducted a 16-week group art therapy study to explore emotional well-being and the parental empathy of mothers of children with special educational needs. The qualitative strand of this study found that art therapy facilitated the reduction of parenting stress. However, the quantitative strand did not find any statistically significant improvement in the participants' emotional wellbeing, or

reduction of parenting stress, in comparison to a control group who received no intervention. Another UK-based doctoral study by Mullen-Williams (2017) worked with newly qualified mainstream school teachers using approaches from DT supervision to support teachers to cope with their role. This mixed-methods research highlighted that through creative techniques teachers furthered their self-awareness and deepened their understanding of challenging interpersonal dynamics. The sessions also provided them with a reflective ‘meditative’ space to tackle any challenges they faced (Mullen-Williams, 2017: 360).

There are also arts therapy professionals who are carers of children with ASD themselves; speaking from their first-hand experience and taking up arts therapies as a profession based on their personal journey (Edwards, 2014; Durrani, 2019). But there are far fewer intervention studies documenting the benefits of arts therapies (Kasari et al. 2010; Okuno et al., 2011). In addition, the above-mentioned studies do not exclusively work with caregivers as the parent-child configuration is the prime focus. Since there are limited opportunities for caregivers to get any respite and self-care time, this area needs further research and clinical application.

2.2.3.2 Dance movement psychotherapy and caregivers of children with ASD

Specifically looking at DMP studies with the caregivers of children with ASD, it is evident that to date there are only findings from the preliminary work that was conducted in India prior to this doctoral study. This preliminary work was a small-scale project that was conducted as an exploratory process to inform this doctoral study at All India Institute of Speech and Hearing. The qualitative and quantitative findings of this work are described further in this section. Before that some light will be thrown on various DMP studies looking at stress reduction and tackling depression across various groups. A randomized controlled trial with 162 participants identified with high amount of stress from different parts of Germany examined the short- and long-term effect of group DMP intervention in relation to stress (Bräuning, 2012). The study concluded that the effects of DMP on stress management and stress reduction were positive, bringing significant changes that lasted over time. Stress was also assessed in 139 Chinese patients with breast cancer awaiting adjuvant radiotherapy (Ho et al., 2016). The participants in the experimental group attended short-term DMP intervention. Through self-reports it was seen that DMP was beneficial in managing the anticipated perceived stress in women with breast cancer during radiotherapy.

A meta-analysis study by Koch et al. (2014) showed moderate effects of DMP for quality of life, depression and anxiety. However, the Cochrane review of the effects of DMP on depression by Meekums, Karkou and Nelson (2015) was inconclusive, probably due to a strict inclusion criterion followed in Cochrane reviews. It is important to further explore and develop effective interventions and to gain an understanding of the effects of DMP. A follow up from the Cochrane review by Meekums, Karkou and Nelson (2015) was carried out by Karkou et al., (2019); it included both a systematic review and meta-analysis, and demonstrated DMP's efficiency in decreasing the severity of depression in adults. Further, the Arts for the Blues project by Karkou et al (2020) has considered evidence from studies of DMP, other arts therapies and psychological interventions and developed an interdisciplinary synthesis of key active ingredients that are helpful for depression (Parsons et al., 2019). Subsequently, a new creative arts framework for treating depression has emerged: a pluralistic 'meta-approach'. Although the study is not directly addressing the needs of caregivers, the robustness of this study has been noted, influencing the development of the intervention for the current study.

Many other studies have noted the benefits of dance (Quiroga Murcia, Bongard & Kreutz, 2009), physical activity (Stoll & Alftermann, 2002) and other body-mind based interventions in stress management (Sandlund & Norlander, 2000; Bond et al., 2002; West et al., 2004). Evidence was noted not just through perceived effects and self-reports but also through physiological responses, neuroendocrine responses and changes in cortisol levels; this evidence supports a positive correlation between movement and the alleviation of stress (West et al., 2004; Jeong et al., 2005). To conclude, studies on dance and DMP have demonstrated that movement-based interventions can impact stress reduction and many other psychological parameters, depression in particular. However, there are no studies that evaluate DMP for reducing emotional distress and improving the coping strategies of caregivers of children with ASD.

The preliminary work that was conducted in India laid the foundation for the current study. It was a mixed-methods study focusing on the parents of children with ASD. It was a short-term group DMP intervention which consisted of six 120 minutes sessions altogether. 12 mothers of children with ASD were non-randomly divided into an experimental group which received DMP and a control group with standard care as usual. Quantitative measures were administered before and after the DMP intervention using the Parenting Stress Index-

Short Form (PSI-SF) and Hamilton Depression Rating Scale (HAM-D). Mean scores went down significantly in the experimental group, along with a decrease in self-reported levels of stress and depression. In addition, inferential statistical analysis although must be interpreted with caution showed statistically significant differences in the reduction of stress and depression scores after the short-term intervention only in the experimental group, indicating potential benefits of DMP (Aithal et al., 2019, see Appendix XI for the results). Using a hermeneutic phenomenology approach a detailed qualitative analysis of the semi-structured interviews and journal documentation of the therapist was conducted (Aithal, Karkou & Kuppusamy, 2020). As shown in Figure 2.1, the findings captured the therapeutic process, perceived benefits of DMP and several factors influencing the impact of DMP. This pictorial summary of the qualitative findings consists of multiple themes tracing the journey of the participants (6 themes); therapeutic and contextual factors (10 themes); and the perceived outcomes of DMP (11 themes). A convergent mixed-methods result of this preliminary research work indicated that the DMP therapeutic process enhanced the resilience of the mothers of children with ASD and helped them tackle parenting stress and depression effectively. There was a statistically significant reduction in PSI-SF and HAM-D scores. However, the study sample was limited to a small number of Indian mothers with a specific socio-cultural, economic and political background. Hence, the findings need to be interpreted with caution. Also, there is a need to explore transferability and generalisability to a larger group of caregivers, from different socio-cultural, economic, and political backgrounds, gender and other factors which can influence these results. Further refinement of a replicable DMP intervention protocol is also recommended. The current study aims to develop a well-defined DMP intervention protocol for the caregivers of children with ASD. Influences from best evidence from studies on arts psychotherapies with adults with depression, and the Arts for the Blues project in particular (Parson et al., 2019; Haslam et al., 2019), as well as the preliminary study conducted in India (Aithal et al 2019; Aithal , Karkou & Kuppusamy, 2020) played an important role in the proposed intervention protocol for this doctoral study and the detailed process of protocol development will be examined in chapter four.

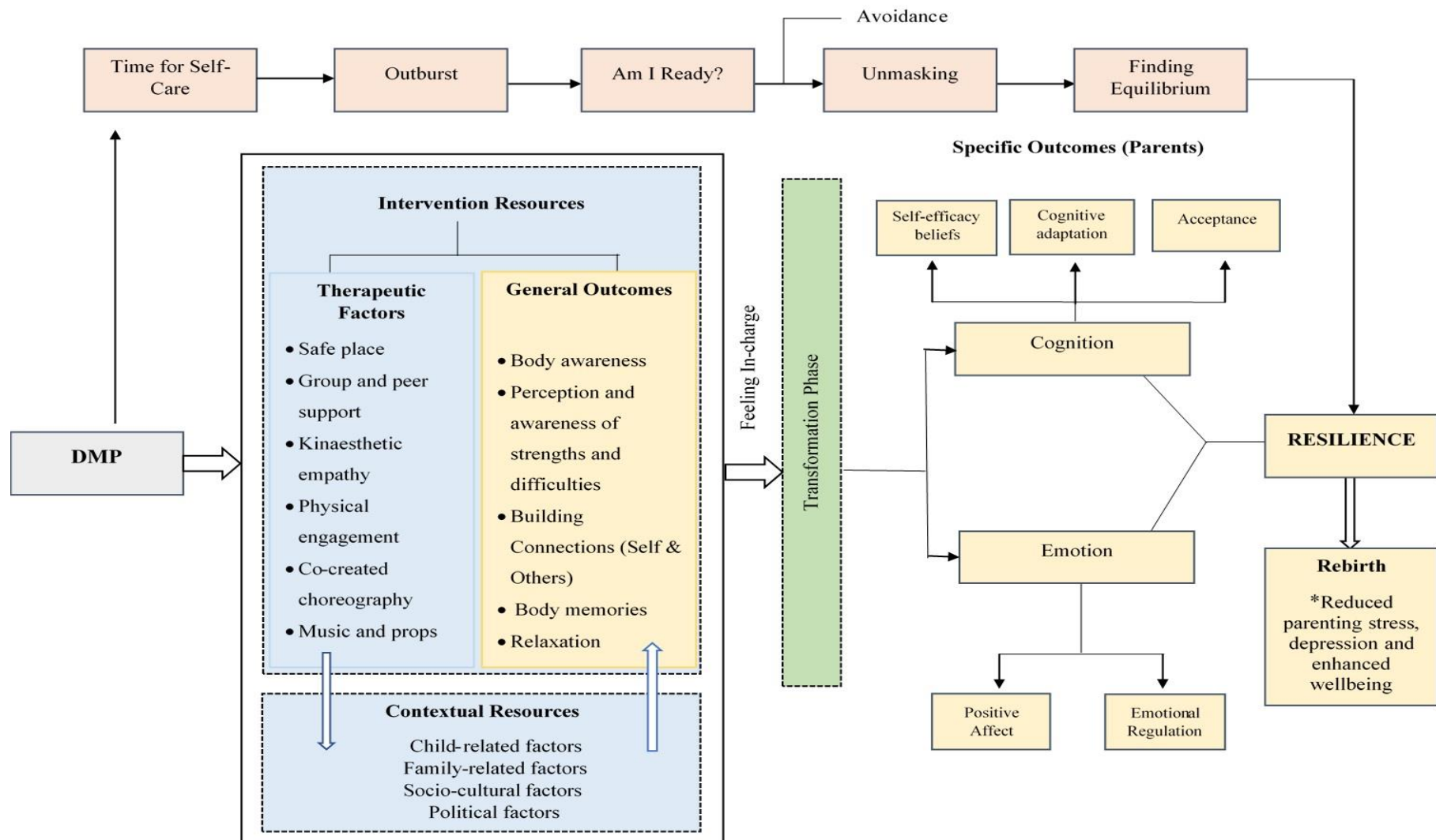


Figure 2. 1 Summary of the process and outcomes of DMP intervention (adopted from Aithal, Karkou & Kuppusamy, 2020)

2.3 Wellbeing

Wellbeing is a multidimensional notion (Diener, 2009; Michaelson et al., 2009; Stiglitz, Sen, & Fitoussi, 2009) and is used differently across sectors and disciplines. Wellbeing is frequently linked to health and happiness as it integrates mental health (mind) and physical health (body) and results in holistic approaches to disease prevention and health promotion (Dunn, 1973). Two different approaches can be distinguished in the historical background of the term wellbeing, the hedonic⁴ and the eudaimonic⁵ tradition (Dodge et al., 2012). The hedonic tradition highlights parameters like happiness, positive affect, low negative affect, and satisfaction with life (Bradburn, 1969; Diener, 1984; Kahneman, Diener, & Schwarz, 1999; Lyubomirsky & Lepper, 1999). The eudaimonic tradition highlights positive psychological functioning and human development (Rogers, 1961; Ryff, 1989; Waterman, 1993). These dimensions demonstrate the breadth and complexity of wellbeing. Arguably, wellbeing has been described extensively but not defined precisely in the relevant literature, leading to confusions and contradictions (Pollard & Lee, 2003). Therefore, defining this concept becomes important as indicated in the following section.

2.3.1 Defining wellbeing and related concepts

Literature in health research acknowledges the conceptual differences and crossovers between quality of life (QoL) and wellbeing (WB) and both words have subjective and objective views (Camfield & Skevington, 2008). There are several definitions. One of them from a subjective point of view, pioneering work by Diener (1984), defines wellbeing as a collective term for diverse evaluations that persons make ‘concerning their lives, the events happening to them, their bodies and minds, and the circumstances in which they live’ (Diener, 2006: 400). As mentioned earlier WB considers the dimensions of happiness and life

⁴ Relating to, or characterized by pleasure. Hedonic concepts are based on the notion of subjective wellbeing. Subjective well-being is a scientific term that is commonly used to denote the 'happy or good life'.

⁵ A Greek word translated as "human flourishing". From this perspective, by engaging in eudaimonic pursuits, subjective wellbeing (happiness) will occur as a by-product.

satisfaction, while quality of life largely considers ‘functional status’ from an objective view (Camfield & Skevington, 2008 :765). Acknowledging the complexity, plentiful dimensions and viewpoints, the present study defines wellbeing based on the publication of Dodge et al., (2012). This definition is preferred for reasons of simplicity, diverse application and optimism, and it gives a basis for measurement (Thomas, 2009 :11). Moreover, the definition had a window for mixed-methods research where objectivity and subjectivity are both well-thought-out. Dodge et al.’s (2012) definition is based on the principles of equilibrium/homeostasis and the fluctuating state between challenges and resources. Wellbeing is the balance point between an individual’s resource pool and the challenges faced. It is illustrated using a see-saw.

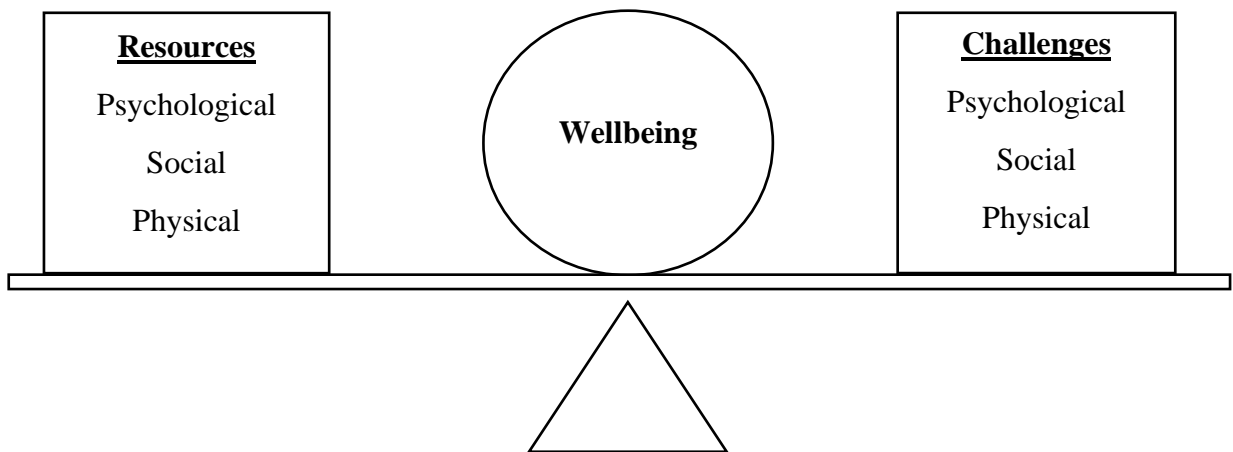


Figure 2. 2 The definition of Wellbeing adapted from Dodge et al., (2012)

Individuals may face numerous emotional, social and physical challenges in life. This creates an imbalance between resources and challenges in the see-saw. To make the see-saw stable and balanced again, the individual needs to adapt resources and challenges. Challenges refer to the life events and the resources are linked to situations where each individual develops relevant skills to cope with the challenges they face. The concept of resilience comes into the picture when the stresses in life are more than the resources, and the individual explores what will help them get back to a balanced state. Resilience is defined as ‘an interactive concept that is concerned with the combination of serious risk experiences and a relatively positive psychological outcome despite those experiences’ (Rutter, 2006: 2).

Resilience can be understood as an outcome or a process (Chmitorz et al., 2018). Several researchers (Mancini & Bonanno, 2009; Kalisch, Müller & Tüscher, 2015) have implemented an outcome-oriented approach, despite risking inappropriate normative judgment (Kaplan, 2013; Ungar, 2015). So, to avoid such judgements it is recommended that the context and specific domains of resilient coping are described and discussed (Luthar, 1993). Some mental health researchers have been criticised for using resilience outcomes synonymously with the absence of mental health issues within a deficit-based model. Recent developments in positive psychology claim that resilience is best suited to a strength-based model (Goldstein & Brooks, 2013; Masten, 2001). These contrasting concepts reflect the complexities in measuring and describing wellbeing. Evaluating the advantages, disadvantages and practical applicability of these constructs, it will be further explained in chapter four how in this study the intervention was constructed from a strength-based approach; it measured wellbeing related outcomes as decrement of related challenges, and the impact of embodying helpful coping skills through DMP.

2.3.2 Wellbeing of children with ASD and their caregivers

Multi-dimensionality in the concept of wellbeing plays a role in understanding the wellbeing of children with ASD. Mental capacity, mental health and wellbeing are discussed in tandem with regards to children with ASD. Mental capacity here refers to ability to understand information, retain that information long enough, weigh up the information, make their own decisions and communicate it. It is not necessarily the ability to carry out every day functional activities. The Mental Capacity Act (2005) considers the best interests of children with disability; it aims to empower them, protect their rights, and enable them to make decisions on matters that affect them, including their choice of interventions. Consequently, the Act plays an important role in how intervention options are offered to children with ASD; it considers the best interest of their overall health and wellbeing, not merely their mental health. Indeed, mental health terminology has been used highly inconsistently across disciplines. As per WHO (2020), mental health is the foundation for the wellbeing and effective functioning of people; WHO considers mental health ‘a state of wellbeing’ (WHO, 2002: Fact sheet, No. 220). When examined closely, it seems that the phrase ‘wellbeing’ encompasses some degree of self-awareness, and the ability to realise one’s own abilities. It also includes the process of developing a wellness toolbox to cope with the situation and implement the tools when necessary.

The following definitions provided by the National Institute for Health and Care Excellence (NICE, 2017), will be used for the two dimensions of overall wellbeing of children with ASD in this study:

- Emotional wellbeing – this includes being happy and confident and not anxious or depressed;
- Social wellbeing – has good relationships with others and does not have behavioural problems, that is, they are not disruptive, violent or a bully.

As it can be seen there are two directions in the way each parameter is described. They are increment of something and decrement or absence of something. In addition, the interrelatedness between social and emotional wellbeing cannot be ignored. They are distinct concepts, but often appear intricately linked in the literature.

Similarly, the overall wellbeing of caregivers includes both social and emotional dimensions. The capacity to maintain emotional stability and enhance relationships with others is set primarily in the context of social policy and social interactions at community or societal level (White, 2011; National Health Service UK, 2014). So emotional wellbeing is vital in the context of social equality, social capital, social trust, social connectedness and social networks with good relationships on a one-to-one, small group, family level or larger and vice versa (Roth, 2020). Overall, emotional and social wellbeing have a profound effect on mental health individually and collectively.

The present study will focus on changes in emotional and social wellbeing through the physical modality (movements). Based on the principle that the mind and body are interconnected, and they influence each other, a key principle of DMP, the present study will measure psychological, emotional and social wellbeing to see the effects of DMP on children on the autism spectrum and their caregivers.

2.3.3 Arts therapies and wellbeing

The All-Party Parliamentary Group (APPG, 2017) on Arts, Health and Wellbeing has undertaken a major inquiry into the role of the arts in health and wellbeing. It highlights that arts engagement in schools can improve social and emotional wellbeing in pupils. The health evidence synthesis network report by a WHO review included a wide range of studies

(Fancourt & Finn, 2019). The report is not limited to arts therapies alone. However, their comprehensive report provides an overview of the diverse application of the arts for wellbeing. It has categorised outcomes on the use of the arts within health and wellbeing under two themes, namely: a) Prevention and Promotion; and b) Management and Treatment. The report acknowledges the use of the arts in encouraging social cohesion and ways the arts can bridge differences in people, enabling the development of a strong community bond (Kreutz, 2014; Murrock & Graor, 2016; Weinstein et al., 2016). This report also points to the strong locus on mother-infant bonding facilitated through the arts. Multiple studies from anthropology, psychology and a related wealth of literature on child development and attachment patterns provide much evidence to support the role of the arts in mother–infant bonding during pre-natal and post-natal stages. Musicality, sing-song patterns in baby talk, modulating infant arousal, mirroring movements and supporting emotional synchronicity between mother and infant are shown to facilitate more intense engagement, visual attention, perceived acceptance of a child by its mother, and parental and child psychosocial functioning, than occurs with speech alone (Shenfield & Trehub, 2003; Nakata & Trehub, 2004). Overall, a large body of research identified under the ‘Prevention and Promotion’ category shows that engagement in the arts can boost ‘multidimensional subjective well-being, including affective wellbeing (positive emotions in daily lives), evaluative wellbeing (our life satisfaction) and eudemonic wellbeing (our sense of meaning, control, autonomy and purpose in our lives)’ (Fancourt & Finn, 2019 :21)

When it comes to arts therapies literature alone, the epithet is largely on ‘Management and Treatment’. Most studies with children on the autism spectrum and their caregivers focus on the management of ASD and symptom reduction. However, a growing number of studies in recent years have focused on wellbeing and factors such as resilience, agency and autonomy. For instance, Blauth (2019) carried out music therapy sessions to enhance resilience in children with ASD and strongly supported approaches increasing resilience instead of symptom reduction. Using mixed-methods research, she found that MT increased behaviours indicative of resilience in the ASD client group. Several art and drama therapy studies influenced by play therapy approaches have considered resilience and other factors to maintain the state of wellbeing in children (Aumann & Hart, 2009; Malchiodi, 2015; Stepney, 2017). A review by Macpherson et al. (2016) has supported art and arts-based workshops in building resilience on adolescents with mental health needs. Concepts from

positive psychology, strength or resource oriented conceptual frameworks such as personal recovery have influenced arts therapies (Rolvsjord, 2004; 2015). Personal recovery is understood as ‘a deeply personal, unique process of changing one’s attitudes, values, feelings, goals, skills and/or roles... a way of living a satisfying, hopeful and contributing life even with the limitations caused by illness’ (Anthony, 1993). The relevance of these resource-oriented concepts particularly in the field of arts therapies in mental health and social care context are growing to promote empowerment and self-management. To sum up, there is a wealth of literature on arts and wellbeing and considerable evidence that strength-based approaches in arts therapies can promote wellbeing.

2.3.4 Dance movement psychotherapy and wellbeing

The concept of wellbeing is widely used in DMP (Devereaux, 2008; Meekums, 2008; Shim et al., 2017). The Oxford Handbook of Dance and Wellbeing (Karkou, Oliver & Lycouris, 2017) covers a landscape of inextricable relations among body, embodied movements, emotions, communication and wellbeing. Creative expression through movements and human connection are documented through a range of studies in the community, education and healthcare contexts. DMP also has given prominence to the promotion of resilience for better wellbeing outcomes. For example, Wengrower (2015) has argued that DMP can promote psychological wellbeing through fostering resilience and safeguarding against risks. What makes DMP a unique approach for parents of children with ASD is the fact that it can offer a space for shared practice of embodied care and recovery (Siapno, 2012). A conference in 2014 organised by the European Association of Dance and Movement Therapy was themed ‘Resilience within a changing world, acknowledging the importance of resilience research and its relevance for DMT practice’.

Caregivers may not receive reciprocal engagement from their children and DMP can provide a platform to express their thoughts, feelings, explore their strengths and find alternative ways to connect with their children. In addition, several DMP studies have shown the potential of DMP to enhance resilience through vitalizing movement experiences that facilitate connection to embodied sources of joy and wellbeing (Samaritter, 2014; Karkou, Oliver & Lycouris, 2017). However, to date, with the exception of the preliminary work conducted in India (Aithal, Karkou & Kuppusamy, 2020), there are no published studies

examining the use of DMP to improve resilience and wellbeing of caregivers of children with ASD.

2.4 Research questions

From the above description of the key terms and related literature, it is clear that the arts and wellbeing have palpable interrelations. However, gaps in the literature show that unless this is substantiated with clear evidence it will not be possible to achieve a wider use of DMP. This DMP intervention pilot study adopted a crossover research design with the primary intention to investigate an intervention effect and explore the contribution of DMP towards the wellbeing of children with ASD and their caregivers. In particular, the focus was on changes in the emotional and social wellbeing of children with ASD and their caregivers as a result of DMP intervention in comparison with their standard care routine. The study explored whether DMP can enhance the resources or strengths of children with ASD and their caregivers by enabling them to develop relevant skills to cope with the challenges. The reduction in the challenges or difficulties would indicate that the intervention has had a positive impact. On the basis of this understanding of wellbeing, the following **null hypothesis** was used:

H_0 = DMP had no effect on measures of social and emotional wellbeing of children with ASD and caregivers who participated in the intervention programme.

The overall research question was therefore:

What is the contribution of DMP towards the wellbeing of children with ASD and their caregivers in terms of both process and outcomes?

Several additional questions derived from the main question adopting a qualitative, quantitative and arts-based perspective.

2.4.1 Quantitative questions

1. What is the contribution of DMP practice towards the development of wellbeing of children on the autism spectrum and their caregivers?
2. Is there any relationship between the caregivers' state of wellbeing and their children's state of wellbeing?

As a pilot, the study was designed to inform the development of a larger RCT with children with ASD and did not require a large sample size and statistical power (Thabane et al. 2010). To explore further, the following research question was asked:

3. What is the appropriateness of the research and intervention methods adopted in this study for their use in a large RCT?

The measure for determining whether the DMP intervention was influencing our outcome measures was dependent on whether or not the change score reached our predetermined minimal clinically important difference (MCID). The MCID is often used in clinical intervention studies that adopt patient reported outcome measures. This approach allows us to conclude whether an intervention is having a clinically significant effect irrespective of the statistical significance value obtained (Jaeschke, Singer & Guytt, 1989; Cook, 2008).

2.4.2 Qualitative questions

1. How do dance movement psychotherapists work with children with ASD in terms of, theoretical frameworks, techniques, overall process and dosage in published research?
2. How do different studies examine the effectiveness and processes involved in DMP interventions? What are their findings?
3. What are the views of the therapist/s and participants on the contribution of DMP to wellbeing?

2.4.3 Arts-based questions

1. What are the key moments of change in the movement of children and caregivers during the process of DMP as understood by the therapist/s?
2. What are the important movement responses of the researcher to the contribution of DMP to the wellbeing of children and their caregivers?

2.5 Summary of background information

This chapter aimed to report the relevant literature in a funnel format to arrive at research questions. The first section pertained to literature on the demographics of ASD. It covered the evolution of diagnostic criteria, differences in terminologies, epidemiology, gender ratio disparity, and co-occurring difficulties. It outlined mounting demands for strengths-based interventions as requested by stakeholder and self-advocates, along with the theoretical evolution of neurodiversity diaspora. Critical discussions on available approaches to the use of DMP, and how arts therapies and DMP in particular differ from other strategies, were highlighted. The next section described the impact of managing ASD on caregivers and argued for the holistic support of caregivers as well as their children. It pointed out the lack of evidence-based intervention options, research and policies for caregivers of children with ASD. The suitability of arts therapies and DMP as a medium to enhance resilience was demonstrated, supporting wellbeing by providing a tool kit to cope with stress and burnout. It looked at the benefits of DMP for addressing challenging emotional needs, depression and other associated issues of the caregivers. Despite the growing trend of family-based approaches in arts therapies, there has been hardly any research in the use of DMP in this way. The findings of the preliminary study conducted in India and the limitations of that study informed the current work. The final section summarised literature on wellbeing and related aspects. Systematic reviews, recent investigations and examples of recent projects were reported to demonstrate the relationship between arts and wellbeing. The gap in literature and research regarding the wellbeing of children with ASD and their caregivers was pointed out, indicating that DMP, and its underlying principles and various frameworks, has not yet been explored in enough depth. Three sets of research questions (quantitative, qualitative and arts-based) were formed. In the next chapter, the methodological approach taken in order to answer the research questions is described in detail.

CHAPTER THREE: METHODOLOGY

Dance movement psychotherapy (DMP) and other arts therapies uniquely combine artistic and scientific approaches (Boris, 2001). In accordance with the essence of DMP and in response to research questions of the current study, a mixed methodology was adopted, incorporating various methods, paradigms and diverse ways of data analysis. The data collected comprised numerical data, quantifying parameters to observe aspects of change as well as experience of the participants in words and art forms. This chapter is organised to reflect the structure of the study design and the timelines of the different research phases. However, the chapter opens with a description of the philosophical foundations of the study, methodological paradigms and the development of the study design. A diagram of the overall structure of this whole research process is provided, along with details on phase I and phase II of the research process. This is followed by the methods of phase I (systematic review) of the study. Details of how the studies were searched, identified, extracted, synthesised and how methodological quality were assessed are laid out. Then the methods for phase II (pilot intervention) is described, beginning with the selection process, randomisation and allocation of participants separately addressing children and caregivers. This is followed by a section presenting the data-collection procedure where tools and materials used for quantitative, qualitative and arts-based data are provided. Various stages of data analysis for all three sets of data and the trustworthiness of the approaches are also described. The final section illustrates ethical considerations that were upheld throughout the project and the ethical procedures followed before commencing the study.

3.1 Philosophical assumptions

As stated in the previous chapter, this study intended to explore answers for three different sets of questions. A combination of quantitative data, qualitative data and arts-based findings are assumed to offer a strong point for better understanding of the topic. In order to answer diverse research questions, the research methods were constructed from a pragmatic theoretical lens. Pragmatism is associated with the use of studies with mixed-methods and

has been a response to the dominance of positivism⁶ and interpretivism⁷ that have long dominated research philosophical thinking (Galliers, 1991). The current study with a mixed-methods approach attempts to marry these two positions with the third philosophical position of pragmatism. According to pragmatism, concepts are appropriate and relevant only if the actions are reinforced, implying that importance is given to empirical and practical consequences rather than antecedent conditions as in post-positivism. Pragmatism believes that “there are many different ways of interpreting the world and undertaking research, that no single point of view can ever give the entire picture and that there may be multiple realities” (Saunders, Lewis, & Thornhill, 2012: 23). When compared to the other philosophical positions, pragmatism is fairly recent. The work of many writers such as Pierce, James, Mead and Dewey has given rise to the pragmatic way of viewing the world (Cherryholmes, 1992; Creswell & Creswell, 2018). Pragmatism values what works at the time (Patton, 1990) and does not view the world as an absolute unity (Morgan, 2007; Creswell & Creswell 2018). The ontological stance here is that reality is the practical consequence of ideas where both objectivity and subjectivity are considered to draw strengths and minimize their respective weaknesses. In pragmatism, the most essential element is the research question. Depending upon the nature of the research question, a single study can liberally draw from positivist and interpretivist research approaches (Wilson, 2010). There is no commitment to any approach and the researcher has total freedom of choice to decide which type of inquiries best meet the needs of the study. Hence, this philosophy makes possible multiple methods and analyses (Rorty 1990; Cherryholmes, 1992). As Raush and Willems (1969) describe, a pragmatic approach is like using bi-focal lens. It provides the researcher an option to zoom in to microscopic detail or to zoom out to indefinite scope. There is scope to have macro and micro views of the topic/s studied. Axiologically both value-free and biased positions are welcomed and epistemologically the focus is on the

⁶ The positivist approach tries to determine and measure the effects of the objective reality that already exists in the world (Phillips & Burbules, 2000). It reduces the ideas into a small set of variables that can test the hypothesis or answer the research questions.

⁷The position of the researcher is to understand the experiences and meanings to inductively develop a theory or pattern of meaning.

relevance of problems and practices. Therefore, the pragmatic approach is assumed to be strengthening a study. When compared to mono-method research, mixed-methods have advantages because their methodological pluralism provide the flexibility to answer different types of research questions within a single study (Creswell, 2013).

Although the mixed-methods research approach is relatively new, it is growing in popularity not only in social sciences (Maxwell, 2016) but also in DMP research (Karkou, 2010). When determining questions relating to the impact and effectiveness of DMP, the emphasis is more often on generating quantitative data. For investigations on the process of therapy the field of DMP embraces qualitative studies (Payne, 1993). A common criticism of the exclusive use of outcome measures is that they are not sensitive enough to reflect subtle improvements (Meekums, 2010). These changes, clients' experiences and the process of therapy can be better captured using qualitative methods (Payne, 1993; Gilroy, 2006; Zubala et al., 2013). However, the worldwide standards and acceptance of 'Evidence Based Practice' credits the requirement of rigorous quantitative approaches in this field. Meta-analyses and RCTs are ranked highest in the hierarchy of evidence (Murad, et al., 2016). These contrasting approaches highlight the need to balance research methods, blending them creatively to produce evidence without losing the essence of the intervention (Meekums, 1996; Meldrum, 1999).

There is also a growing recognition of pragmatism and value of mixed methods in the design and development of complex interventions. A mixed-methods approach enables researchers to combine empirical evidence with descriptive precision (Onwuegbuzie, 2003). For example, the Medical Research Council (MRC) and National Institute for Health Research (NIHR) guidance (2019) for developing and evaluating complex interventions identifies the importance of a through process evaluation and measurement of effectiveness which will require both qualitative and quantitative approaches. Likewise, the inclusion of qualitative data supports the exploration of relationships discovered by quantitative data. Hence, in this research study, methods and research designs were chosen to gain a deeper understanding of the topic and reflect the experience of the participants, while exploring meaningful outcomes. These diverse types of findings intend to answer different types of questions and speak to diverse audiences.

Furthermore, in a study on DMP where movement-based expressions are emphasized, there is a need to be sensitive to the information shared through movement; otherwise there is a threat of losing information from what the field has been built upon (Kossak, 2012). As a way of managing this, arts therapies research literature actively engages with the collection of arts-based media as data in the form of movement, music, drawings, craft work in addition to word-based qualitative data (McNiff, 2007). Weber (2008) argues that arts-based research methods can facilitate transparency and can introduce reflexivity into the research design. The strength of the arts-based method lies in its ability to integrate, expand on existing disciplines and create synergies between disciplines particularly when the research explores social, emotional and other metacognitive experiences (Leavy, 2009, 2017; Sullivan 2010). Wadsworth-Hervey (2000) also argued that arts-based research findings may not offer factual information but provide a picture of the emotional landscape of the topic researched in ways that neither words nor numbers can do. Leavy (2009) claims that arts-based research can also suggest different meanings from the data, evoke emotions and produce connections. Although it may appear as mixing conflicting paradigms, Leavy (2009) argues that these approaches complement and reinforce each other.

In this study, three types of data, namely qualitative, quantitative and arts-based, will offer different perspectives, multiple insights and multiple angles to the research problem. The qualitative data is intended to throw light on the comprehensive personal perspectives and in-depth experiences of the participants of the study, while the quantitative data will yield general trends and relationships. Arts-based data provides an insight into the relevant process when words are not enough to describe the experience. In this study, qualitative, arts-based and quantitative methods were used for complementary purposes, rather than for cross-validation and triangulation purposes.

3.2 Overall research plan

The research aimed to evaluate the therapeutic process and outcomes of a DMP intervention programme developed to enhance the wellbeing of children on the autism spectrum and their caregivers. Interventions are widely used in educational, health care and community settings that have important wellbeing consequences. The Medical Research Council (MRC) and National Institute for Health Research (NIHR) provide a framework for the best practice of

development and evaluation process of complex intervention programmes (Petticrew et al., 2019). According to their guidance, there are four major key elements which are non-linear and interconnected in a cyclical sequence. The development phase includes identifying the evidence base, identifying/developing theory and modelling the process and outcomes. This informs the piloting phase where the procedures are tested, recruitment and retention are estimated and also sample size is determined. This stage feeds forwards to the evaluation phase and backwards to the development phase. The evaluation phase assesses the effectiveness, aims to understand the change process, and tries to assess the cost-effectiveness. This present small-scale research project worked on developing a DMP intervention programme for children with ASD and their caregivers and considered merging some aspects of development, piloting and evaluating phase due to the time and funding constraints of a doctoral study.

The overall structure of the study consisted of two phases. The first stage (Phase I) corresponded to the development phase described in MRC and NIHR framework. Here a systematic review was conducted and two intervention protocols were developed separately for children with ASD and their caregivers. This phase answered the first two qualitative questions on ways in which dance movement psychotherapists are working with children on the autism spectrum (refer to Figure 3.1). The second phase (Phase II) included designing and piloting the evaluation of these two intervention protocols using mixed-methods. Three methods addressed different research questions to explore the contribution of DMP towards wellbeing of children on the autism spectrum and their caregivers. As shown in Figure 3.1, a battery of questionnaires was employed to answer the first two quantitative research questions on the outcomes of DMP. The third qualitative question concerning the process of DMP (refer to Figure 3.1) was addressed through participant observations, semi-structured interviews and retrospective video annotations. Finally, the two arts-based questions on key moments of change (refer to Figure 3.1) were explored using movement responses to key moments of change during the intervention process. The following sections in this chapter will explain the research methods and the processes involved in both phases.

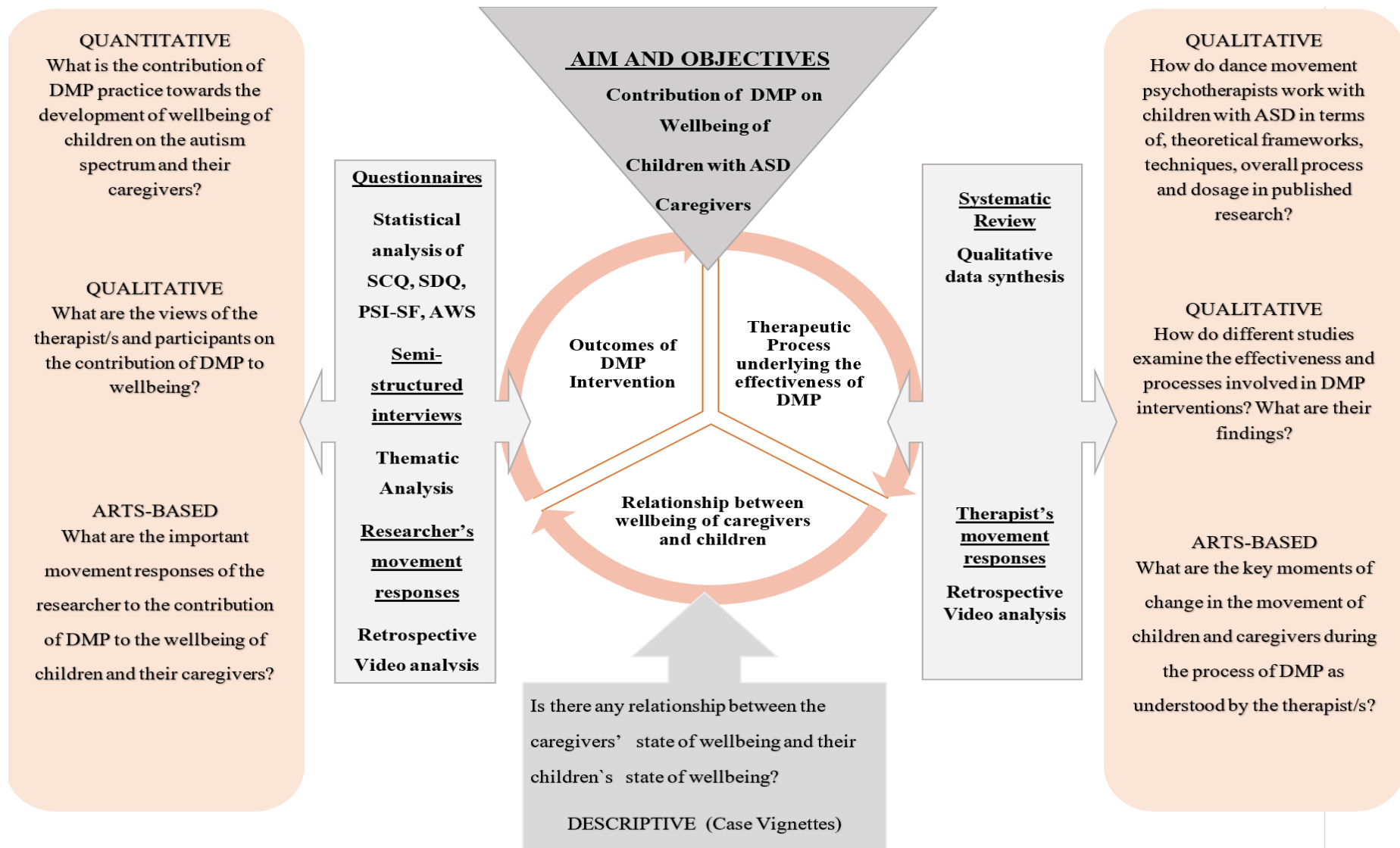


Figure 3. 1 Summary of the research plan

3.3 Phase I- Systematic review methods

The present systematic review explored the following research questions:

1. How do dance movement psychotherapists work with children with ASD in terms of theoretical frameworks, techniques, overall process and dosage in published research?
2. How do different studies examine the effectiveness and processes involved in DMP interventions? What are their findings?

The systematic review was based on the processes used in meta-analyses and qualitative evidence synthesis of Cochrane Reviews (Higgins & Green, 2011). Unlike Cochrane Reviews, however, the exclusive reliance on Randomized Control Trials (RCTs) was changed in this review to include other quantitative, qualitative and arts-based research studies on DMP for children with ASD. We also extended the meta-synthesis approach by including not only qualitative findings in the briefs but also quantitative studies. In order to combine both approaches, we adopted the principles of pragmatism (Haack & Lane, 2006), according to which all evidence available at the time is collected. The review was implemented using the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) guidelines (Moher et al., 2010) to ensure that the review was conducted systematically and that results were replicable.

Firstly, a protocol was developed and registered with an open access online database PROSPERO (<https://www.crd.york.ac.uk/PROSPERO>; Registration Number CRD42018087912). The protocol included the following stages:

- a) **Identification:** The following electronic databases were searched within the period 6.1.2018 to 4.4.2018: Academic search primer; CORE; PsyARTICLES; Emerald Health and Social Care Journals; PsycINFO; Proquest Health Research Premium Collection; Wiley; PubMed; BioMed Central Journals; and Cinahl Complete. Additional hand searches in relevant journal databases and different universities' catalogues were also conducted.

Search formula

Step 1: Autis* OR Asperger* OR Rett* OR “Pervasive Developmental Disorder*” OR “Neurodevelopmental Disorder*” OR “Childhood Disintegrative Disorder*”

AND

Step 2: “Dance movement therapy” OR “Dance/Movement therapy” OR “Dance Movement Psychotherapy” OR “Movement Therapy” OR “Movement Psychotherapy” OR “Authentic movement” OR “Primitive expression”

- b) **Study screening and selection process:** The researcher ran the searches in various databases, identified relevant studies and removed duplicate titles using Zotero software (2018). Another PhD student (ZM) and I independently screened at the level of title and abstract based on the predetermined inclusion/exclusion criteria. Inclusion and exclusion criteria were also applied for full texts. In cases of missing data, the authors were contacted to provide original reports. Any cases that remained unclear were discussed with the director of studies (VK).
- c) **Eligibility and inclusion:** With regards to eligibility (Table 3.1) to target studies that are relevant to DMP for children with ASD, we used a modified version of PICOS method (Bowling & Ebrahim, 2005). In particular, we decided eligibility based on four components: Participant Population-P, Intervention-I, Outcomes-O and Study design-S; but did not consider Comparison (C) as the review does not aim to compare DMP intervention with other types of interventions or groups without any intervention. The outcome component included studies oriented towards outcomes as well as studies describing the therapeutic processes to further understand the contribution of DMP for children with ASD.

Table 3. 1 Inclusion criteria

Framework	Criteria
Types of participants	Studies with participants of 16 years of age or below; diagnosed with ASD of any severity were considered for this review. Furthermore, studies in which the majority (>75%) of the participants were younger than 16 years or had a diagnosis of ASD were included.
Types of interventions	Studies where DMP was delivered as an intervention by a qualified therapist (in the countries where training is available) with clear goals and therapeutic process were considered. All DMP approaches were considered even if they were delivered alongside other arts therapies or as a combination with other arts therapies. However, studies where dance training or other types of recreational dance programmes without a psychotherapeutic process were not included in this review.
Types of outcome measures and processes	Outcomes of DMP on social, cognitive, emotional, behavioural, physical, academic measured through standardised measures were considered. Methods that captured the perspectives of children, parents, therapists and teachers on both the process and the outcomes were included. Video analysis methods that looked at therapeutic process were also considered. Studies that neither investigated the therapeutic process nor its outcomes were excluded.
Types of studies	Any type of empirical research (quantitative, qualitative, mixed or arts-based methods) were included. Studies not included were: non-empirical research studies (e.g. secondary sources, opinion-based, editorials, policy reviews and statements, commentaries), studies not published in

	English, unpublished Master level dissertations, unpublished conference presentations, conference proceedings where full-length articles are not available, clinical case examples without rigorous research methodology and narrative articles and reviews without rigorous research methodology.
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d) **Data extraction, management and quality assurance:** Microsoft Excel and the specialised software package Covidence (2018) were used to organise and manage all relevant information from the studies. The data extraction focused on answering the research questions and included two main categories:

- *Ways in which dance movement psychotherapists work with children with ASD.* This category looked at theoretical frameworks, therapeutic techniques, overall process and intervention dosage. Theoretical frameworks referred to the wider concepts that informed the approach of DMP were documented. Therapeutic techniques considered the methods that therapists practically used during the session. The overall process recorded the DMP session structures. Finally, dosage referred to frequency, duration, intensity of DMP sessions. These intervention characteristics were extracted based on the TIDieR template for intervention description and replication checklist (Hoffmann et al., 2014).
- *Data-collection methods and findings* captured what type of assessments were administered, how the assessment took place and the changes noticed in the participants after attending DMP.

e) **Quality Assessment:** The risk of bias assessment tool (Higgins & Green, 2011) was used for quantitative studies. This critical appraisal tool ensured that the studies were reviewed with equal rigour (Aveyard, 2014), identifying risks such as selection bias (random sequence generation, allocation concealment); performance bias (blinding of participants and personnel); detection bias (blinding of outcome assessment); attrition bias (incomplete outcome data); and reporting bias (selective reporting). For the qualitative and arts-based studies, the ABCD grading system was utilized to evaluate the standards (Downe et al., 2009). Since this system draws upon concepts developed by Lincoln and Guba (1985) relevant to trustworthiness, it was used for the reviewed qualitative and arts-based studies. In this grading system, the overall quality of the studies were classified

across a scale, ranging from highest quality, i.e. level A which includes no, or few flaws, to lowest quality, i.e. level D which includes significant flaws that are very likely to affect the credibility, transferability, dependability and/or confirmability of the study.

The review findings along with the narrative synthesis report and quality assessments are presented in the next chapter. Before that, the modus operandi of the phase II is described in the next section.

3.4 Phase II – DMP pilot intervention

Phase II of this research aimed to provide answer to the three types of questions (quantitative, qualitative and arts-based). Therefore, a small-scale controlled pilot evaluation of DMP intervention programme (Lancaster, Dodd & Williamson, 2004; Thabane et al., 2010) was conducted, following a mixed-methods design.

3.4.1 Research design of phase II

As shown in Figure 3.2 the current study used an advanced mixed-methods design called ‘the intervention design’ embedded within one of the core mixed-methods designs called ‘convergent design’ (Creswell, 2015). Mixed-methods are defined as “an approach in social, behavioural and health sciences in which the investigator gathers quantitative (closed-ended) and qualitative (open-ended) data, integrates the two, and then draws interpretations based on the combined strengths of both sets of data to understand research problems” (Creswell, 2015: 2). As described by Creswell and Clark (2017), in a mixed-methods intervention design, the researcher gathers and analyses both quantitative and qualitative data within an intervention study. Principally, an intervention design answers the research questions by conducting an experiment or intervention trial (which is quantitative in nature) and adds qualitative data into it. Qualitative data can be collected at any point of time in the pilot intervention.

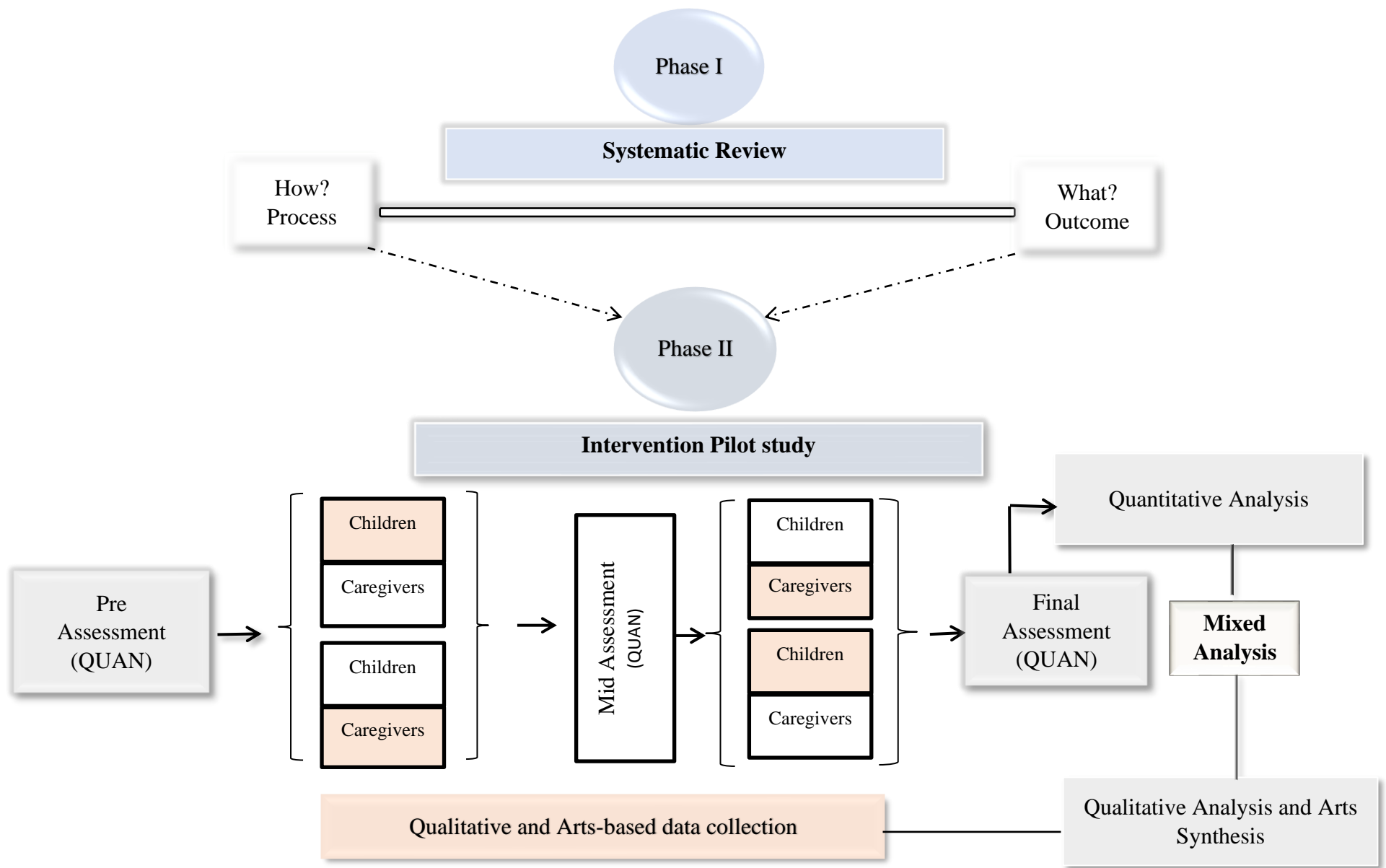


Figure 3. 2 Phase II- Research design

A convergent design is embedded into a mixed-methods intervention design when the qualitative data is gathered *during* the pilot intervention. As shown in Figure 3.2, in this study qualitative and quantitative data are only merged during the interpretation stage (Creswell, 2015).

Furthermore, the research studied the effects of the proposed DMP intervention by conducting a pilot intervention with a crossover design (Jones & Kenward, 2014). The crossover design comprised factors such as, **Group** (DMP versus standard care group) and **Time** (before versus after the intervention) at two time **Periods** before crossover (period 1) and after crossover (period 2). The end and start of these periods were separated by a washout period of three weeks. A crossover design was chosen because this approach can accommodate low sample sizes. In addition, it was chosen as an ethical decision to provide intervention opportunities to all the participants. The crossover design was planned with equal rigour as in a parallel-group design to make sure that the crossover approach meets the criteria in terms of type I and type II error risks (Wellek & Blettner, 2012). Moreover, crossover design allows for comparisons of DMP and standard care within the same participants and reduces within-subject variability.

Children and caregivers received DMP separately and in a different sequence. If intervention to the caregivers is denoted by 'A' and intervention to the children is denoted by 'B', the sequence of the pilot was AB to one set of participants and BA to the other set of participants. Randomisation was done to decide which set of participants would receive the intervention in AB and BA sequence. The group which was not receiving therapy at that time was considered as the control group (See Figure 3.3). This type of design is regarded as optimal and statistically efficient with small number of participants (Sills & Brodie, 2009).

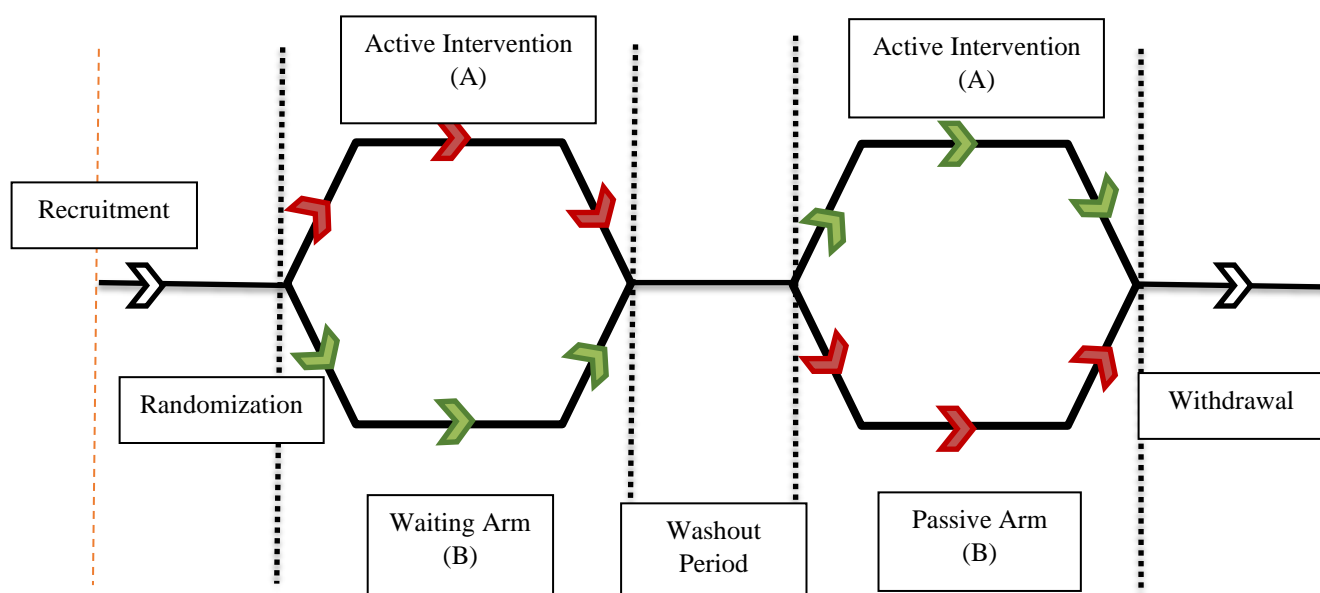


Figure 3. 3 An illustration of crossover design

Bose and Dey (2009) argue however, that the limitations with this design are ‘order effect’ and the ‘carry-over’ effect. Order effect is likely to occur when the order in which interventions are administered influence the outcomes of interventions (Johnson, 2010). In this study, the order effect serves to explore one of the objectives of the study: the relationship between wellbeing of children on the autism spectrum and their caregivers. Carry-over effect is when the first received intervention confounds the estimates of the intervention effects (Johnson, 2010). Introducing a washout period can be a solution to carry-over effect. A washout period is when a passive period is introduced in between the active intervention phases. However, using arts-based interventions in this way makes it difficult to determine the ideal washout period (Jones & Kenward, 2014). The risk of the participants dropping out increases with the introduction of a long washout period. Furthermore, a lengthy washout period prolongs a study; in this case it threatened the tight schedule for completion of a PhD. Finally, quantitative designs are new to the arts therapies. So, there is limited evidence from the literature available to help determine the ideal washout period. In the end, a three week a washout period was incorporated to fit the research design well within the school’s schedule.

The interface between quantitative, qualitative and arts-based data indicated the convergent pattern of this mixed-methods study. All three types of data received equal emphasis and responded to different research questions. They were merged into one overall interpretation to meet the overall aim of the study and to answer the research question on feasibility of a larger study using these methods. Figure 3.4 depicts the structure of the convergent design used in this study (Creswell & Creswell, 2018). Figure 3.4 also mentions the products expected from following qualitative, quantitative and arts-based procedures. The core research questions of the study demanded the exploration of more specific areas, grouped under three main headings:

- a. Contribution of DMP for children with ASD
- b. Contribution of DMP for the caregivers of children with ASD
- c. Relationship between the wellbeing of children and caregivers

DMP sessions were designed separately for children and caregivers and the procedures henceforth are illustrated distinctly for caregivers and children with ASD.

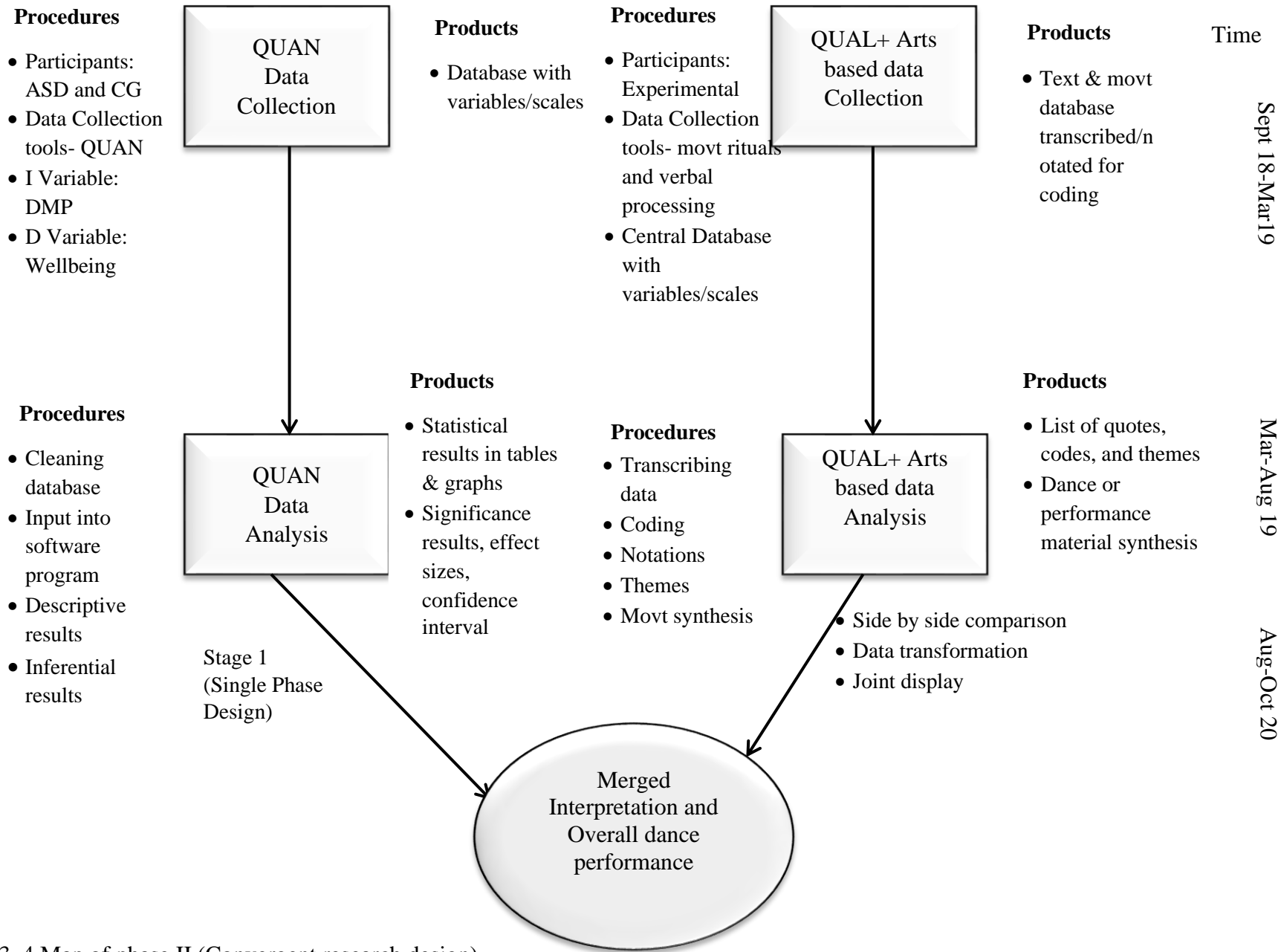


Figure 3. 4 Map of phase II (Convergent research design)

3.4.2 Participants

3.4.2.1 Eligibility criteria for children

Participants were recruited for this study if

- ✓ They were children below 16 years
- ✓ With a diagnosis of ASD as per the Diagnostic and Statistical Manual, Fifth Edition (DSM-5).
- ✓ Parents provided consent for them to participate
- ✓ The children provided assent and willingness to participate
- ✓ Even if the parents did not want to take part in the intervention programme themselves, children were considered for the study if the parents provided consent for their children to participate.

X Children were excluded from the study if they did not meet anyone of the above-mentioned criteria.

However, children were considered and recruited to the study even with a diverse range of severity of ASD, language, cognitive and physical abilities and associated problems. Their mode of expression was categorised as verbal or non-verbal. Their preferred mode of expression was categorized as ‘verbal’ if the difference between the chronological age of children and expressive language age was less than two years. Such children were able to express themselves using sentences with intact syntax, semantics and phonology. Those children who used only some words or no words, or who predominantly used Makaton, and those for whom the difference between their verbal expressive language and their chronological age was greater than two years, were categorized as ‘non-verbal’. Participants’ difficulties were also categorised according to ASD severity based on direct observation using the Childhood Autism Rating Scale Second Edition CARS2 (Schopler et al., 2010). The researcher subjectively rated participants’ difficulties on the fifteen items of CARS as follows: (i) mild if they required support and faced difficulties in social situations only; (ii) moderate if the children required substantial support; and (iii) severe when children required very substantial support to carry out basic daily living tasks.

3.4.2.2 Eligibility criteria for caregivers

In this study's context caregivers were defined as persons in the child's circle, to whom the child is close and familiar, and who are in a position to support the child's development. This meant the participants could be parents, teachers, teaching assistants, older siblings or grandparents.

Participants were recruited for this study if

- ✓ They were caregivers (any) of children below 16 years with a diagnosis of ASD as per the Diagnostic and Statistical Manual, Fifth Edition (DSM-5)
- ✓ A willingness and ability to consent and participate
- ✓ A sufficient command of English to complete the research interviews and actively participate in group interactions in English
- ✓ Caregiver of children with any level of severity of ASD, intellectual abilities and associated problems

X Caregivers were excluded from the study if they did not meet any of the above mentioned criteria.

3.4.3 Settings

Participants were recruited from two special educational needs school settings in the North West of England. The division of the groups/clusters and design were replicated in both the schools. A spacious room with minimal disturbance within the respective school premises were used during assessment and DMP intervention programme.

Some difficulties were faced while selecting and getting permission from the schools. One school was contacted because of a previous research-based alliance between the school and University. To find the other schools, letters of invitation and project information sheets (Appendix V) were sent out to seventeen schools in Liverpool, Manchester, Southport and Warrington. To report the progress through the phases of this study the Consolidated Standards of Reporting Trials (CONSORT) guidelines with some slight modifications has been adapted to report a crossover randomized controlled trial. As shown in the CONSORT flow diagrams (Fig 3.5 & 3.6), of the 18 schools approached, eight expressed interest. However, only four schools proved suitable based on the number of children available and responses from the parents. Two schools proceeded further by sending invitation letters to parents. Turnout responses were low, and formed two groups of five participants. After this, modifications were made to the invitation letter (Appendix

V) improving the language used and eliminating research jargon. The way schools were approached also changed. A new search of schools was done with the support of a colleague who was familiar with local special needs schools. In the end, two schools were able to provide space and support to run the project, one in Liverpool and one in Manchester. The researcher arranged a meeting with the co-ordinating teachers during which an explanation of the study was provided. Class teachers created a list of eligible participants. The researcher sent invitation letters, participant information sheets and reply slips to as many caregivers as possible through the children. Once approximately 15 eligible participants expressed interest from one location, participants were invited for a full baseline assessment. Incorporating the DMP intervention into the school schedule was designed to reduce and, in the case of the current study eliminate, missing data, as well as to increase attendance at the DMP intervention sessions.

3.4.4 Recruitment and group allocation process

An initial sample size for statistical power was not calculated as this was a pilot evaluation, and there were only two quantitative studies in this area with different outcome variables.

Randomisation: A total of 32 parents communicated interest from both locations. Randomisation was possible only with the child participants for two reasons. Firstly, the sessions were designed in such a way that children and their caregivers did not attend the intervention programme at the same time to observe the effects of DMP intervention on them separately. So, the caregivers' groups were assigned based on the group to which their children were allocated. Secondly, many parents were interested in sending their children to the sessions, but could not commit to the sessions themselves. All those caregivers who expressed interest but could not attend were assigned to the control group. With the child participants block randomization (Altman & Bland, 1999), a technique that helps to randomize the participants into clusters to receive intervention A then B or B then A, was used. Blocks were defined as small, predetermined cluster assignments, which can keep the numbers of participants in each cluster similar and create a balance (Frane, 1998).

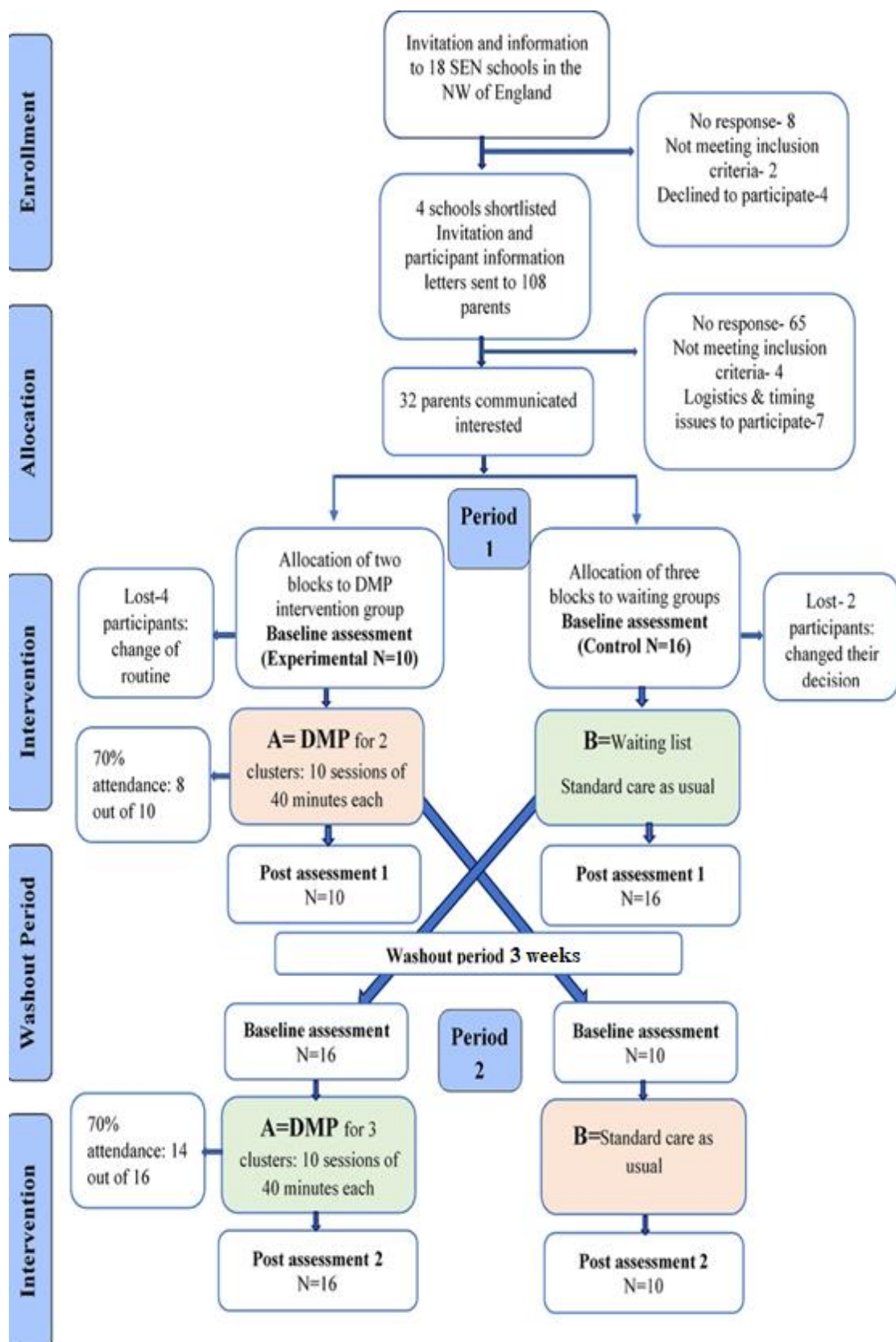


Figure 3. 5 CONSORT flow diagram for each stage of the intervention trial of children with ASD

Sequence generation: In this study, participants were manually divided using a shuffled deck of sealed cards to decide the order of intervention by the researcher. A sequence of numbers and the names of the child participants were written on small pieces of papers. They were sealed and placed in two separate boxes. Parents were given an option to pick up a number and their child's name simultaneously. When the parents picked up a card with an even number, children were allocated into the DMP intervention group in period 1; odd numbers were allocated to the control condition where children maintained their standard routine as usual in period 1. Further, depending on the order of the allocation, various clusters were formed. For example, in period one the first five children were allocated cluster 1 and the next five children to cluster 2. These two clusters of the participants received DMP (A) followed by standard care (B) while the other three clusters received standard care followed by DMP (A then B/B then A design). Following some participant drop-out before the assessment (shown in Figure 3.5) 26 children were then grouped into five clusters. Two clusters received the intervention in the first period while the other three clusters were on the waiting list (control group). In the second period of the trial the clusters were swapped from waiting groups to intervention groups. Baseline and post assessments were carried out in both periods.

With regards to caregivers, as well as the invitations sent to the parents, 86 SEN teachers and teaching assistants from both locations were invited to participate. A total of thirty-seven caregivers (including teachers, teaching assistants and parents) of children with ASD from two special education schools were recruited to a DMP intervention (N=20) and a control condition (N=17). Due to the limited number of caregivers who could attend the sessions in period 2, a crossover design was not possible as per the initial plan (Figure 3.6). It turned out to be a usual parallel group design with intervention and standard care groups. Four intervention clusters (two clusters consisting of parents and two clusters consisting of teachers and teaching assistants) were allocated to the DMP intervention group. The other participants were included in the control group with standard care as usual. Including children and caregivers, there were nine DMP intervention clusters. 26 children were divided into five clusters, where two clusters attended in period 1 and three clusters after crossover. Four clusters of caregivers received DMP intervention only in period one and none in period 2.

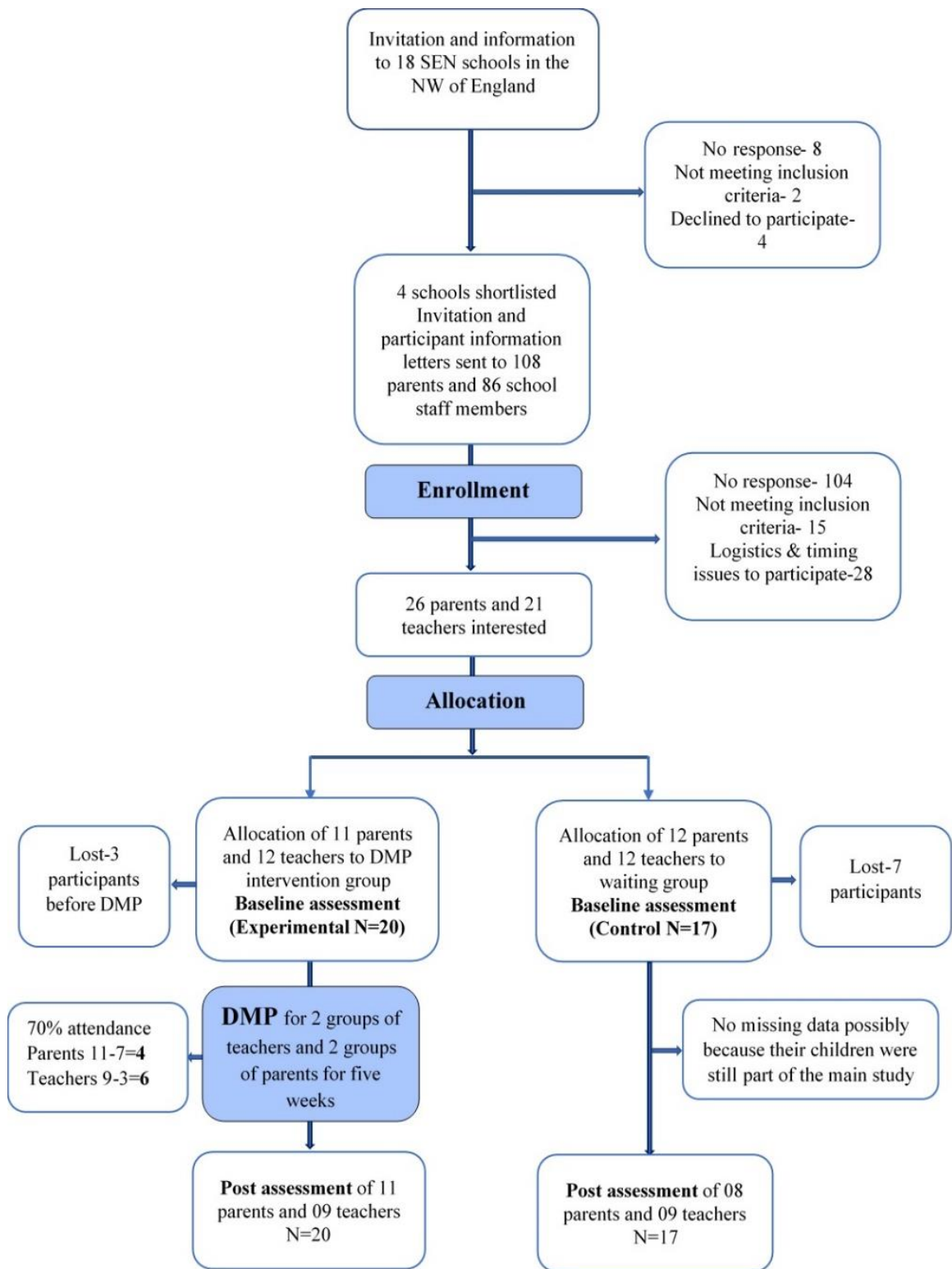


Figure 3. 6 CONSORT Flowchart for each stage of the intervention trial of caregivers of children with ASD

Allocation concealment mechanism: The child participants and their class teachers were able to fit the DMP sessions within their school schedule. The child participants' groups were concealed from teachers and parents without any further alterations or scope to shift the groups once the participants were allocated to groups. But it was more difficult with the parents: three parents dropped out because they could not attend during their allotted slot.

Blinding of the participants and the researcher: In this study, blinding of the participants was not feasible. The parents and teachers who filled out the questionnaires knew whether children had attended DMP sessions or not. A placebo group was not run due to limited resources. The researcher was involved during DMP sessions to gather qualitative and arts-based data.

3.4.5 DMP interventions for children with ASD and their caregivers

Two DMP intervention protocols were developed as per TIDieR guidelines (Hoffmann et al., 2014) (Appendix III and IV) during May-August 2018 and were presented as part of a group presentation at the 3rd EADMT conference, Athens (Karkou, Aithal & Moula, 2018). The complete design of the protocol, along with the conceptual background and development process, is given in chapter five. Given that the optimal number of participants for group psychotherapy session is considered to be between five and eight participants (Bateman, Brown and Pedder, 2010 :162), it was decided to limit the adult group participants to this number. Teachers and parents were grouped separately to protect their professional and personal life boundaries. However, for children the complexity and heterogeneity of their needs was considered leading to the establishment of smaller groups of 3-5 children each. The DMP intervention protocols were layered at three levels as shown in Figure 3.7. Theoretical principles, the overall process consisting of tools, techniques and materials, and finally the session structure, were meticulously extracted from various sources and incorporated into the protocols. The DMP intervention protocol for children with ASD constituted of ten sessions lasting for 40 minutes each for all the five clusters of participants. The caregivers' intervention protocol was formed of five sessions lasting for 90 minutes each for all four clusters. An assessment of the adherence to the two DMP intervention protocols (children and caregivers) was carried out separately through online questionnaires (See Appendix X and IX). The comprehensive procedure and findings are further discussed in chapter five.

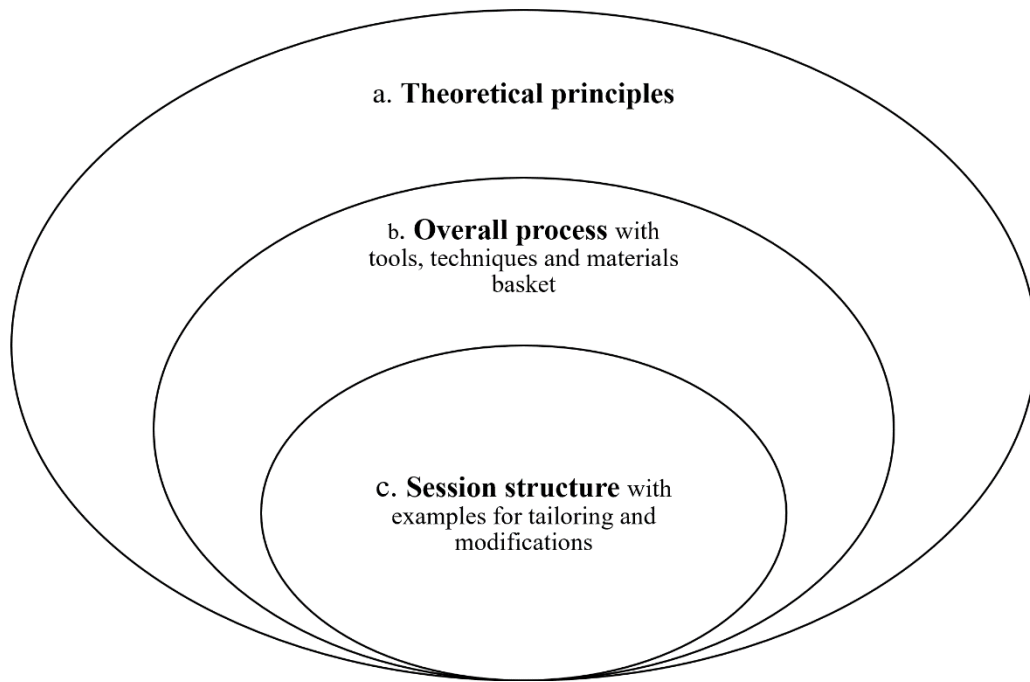


Figure 3. 7 Different levels used to develop the protocols for the DMP interventions

3.4.6 Quantitative outcome measures for children with ASD

The assessments were typically conducted in a quiet room at the SEN schools and took 20–30 minutes to complete. Soon after the baseline assessments were completed a list of identification codes for the children were created. The participants were assessed at the end of the DMP intervention, within one month of the groups' completion. The outcome measures were the Strengths and Difficulties Questionnaire (SDQ) developed by Goodman (1999) and the Social communication Questionnaire (SCQ) developed by Rutter, Bailey and Lord (2003). Both measures have been found helpful in intervention planning, educational intervention and the measurement of change over time following an intervention (Mieloo et al., 2012; Avcil et al., 2015; Stone et al., 2015). This made them more appropriate than other measures such as the ADOS which is not meant to detect intervention effects (Goodman et al., 2000; Bieleninik et al., 2017).

The SDQ is a behavioural assessment tool used to gain inputs on child's emotional and social wellbeing from a teacher's perspective. It consists of 25 items on five scales: emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems and prosocial behaviour. Responses are given to each item on a 3-point scale (Not True, Somewhat True and Not True). Although the questionnaire allows separate calculations for each subscale, it also provides an overall score using raw scores from the

first four subscales, with a higher score indicating a greater degree of difficulty. A large national survey of child and adolescent mental health carried out by the Office for National Statistics in Britain found the average SDQ scores for a 5-15 year old sample (forms completed by teachers) was Mean=6.6, SD=6.0 (Meltzer, et al., 2003). Earlier studies on the reliability of SDQ have shown mixed results. Yao et al., (2009) reported strong internal consistency while Goodman (2001) found satisfactory internal consistency. Moderate test-retest validity, and good concurrent and discriminant validity have been established (Muris, Meesters & Van den Berg, 2003; Lundh, Wangby-Lundh & Bjarehed, 2008; Yao et al., 2009). Specifically, on validation of SDQ for children with ASD, a study by Salayev and Sanne (2016) indicated that SDQ as a screening tool could differentiate between ASD and other psychiatric conditions. However no reports were found specifically on validation of SDQ for children with ASD to measure intervention effects.

The SCQ is a psychological questionnaire designed to identify social and communication abilities of children. The 'current version' of the form was used in the study as this provides an assessment of the child's behaviour over a recent period of time and from the parent's perspective. The test consists of 40 yes/no questions appropriate for both verbal and non-verbal children, with higher scores indicating a greater number of social and communication difficulties. SCQ scores above the cut-off point of 15 indicate ASD and deviant social and communication patterns (Berument et al., 1999). Wiggins et al. (2007) found that the sensitivity and specificity of the SCQ was maximized at lower cut offs of twelve when used with younger children using non-verbal communication. Researchers have also reported the tool's strong discriminative and concurrent validity irrespective of the IQ level of children with ASD (Chandler et al., 2007).

3.4.7 Quantitative outcome measures for caregivers of children with ASD

The Adult Wellbeing Scale (AWS) and Parenting Stress Index-Short Form (PSI-SF) were used to assess primary outcomes on wellbeing and parenting stress. All the participants (teachers and parents) answered AWS and only parents answered PSI-SF. AWS (Snaith et al., 1978) is an eighteen item self-inventory with a four-point rating scale from (yes, definitely) to (no, not at all). The questions cover four subscales: Depression, Anxiety, Inwardly Directed Irritability (IDI), Outwardly Directed Irritability (ODI). The depression and IDI raw scores above 6 indicate anxiety, ODI above 7 & 8 respectively

indicate clinically elevated levels. Internal reliability, convergent validity and construct validity tested using factor analysis showed that the total score of this tool was psychometrically sound for evaluating the wellbeing of caregivers. The total score section was found to be reliable with a good internal consistency (Cronbach's α 0.87). However, the subscales were reported to be questionable (Pepping, O'Donovan & Davis, 2013).

PSI-SF is a brief version of the Parenting Stress Index (Abidin, 1995). This is a thirty-six item self-inventory and uses a five-point rating scale from 1 (strongly disagree) to 5 (strongly agree). It has three subscales: Parental Distress (PD), Parent-Child Dysfunctional Interaction (P-CDI) and Difficult Child (DC). PD and DC raw scores above 33, PCDI scores above 27 and raw total scores above 90 indicate clinically elevated levels of stress. With high internal consistency for both the total scale (Cronbach's α = 0.92) and the three subscales (0.81: Parenting Distress; 0.89: Parent-Child Dysfunctional Interaction and 0.88: Difficult Child) and good external criterion validity (0.86), this is a good tool for assessing parenting stress.

3.4.8 Qualitative methods of data collection

During caregivers' sessions, semi-structured interviews were used to collect the experience of the therapists and the caregivers during the sessions. Open ended questions were sensitive to the process and changes they may have noticed in themselves during the intervention. After every session the caregivers were encouraged to verbally reflect on their experience. Art work and movement experiences were considered as reference points to generate follow-up questions. The interview schedule of the therapists and caregivers can be found in Appendix II.

For children, the interview style was dependent on their abilities. It varied from open ended to simple binary choice questions or one-word answers to questions. Various options for communication were provided, for example, pointing to pictures, or standing on yellow or blue blocks to indicate if they were feeling happy or sad. At the same time, it allowed the informants freedom to express their views in their own way. The strength of semi-structured interviews is in providing trustworthy qualitative data (Bernard, 1988).

Participant observations through 'observer-as-participant' (Johnson and Christensen 2010: 209) and retrospective analysis of video recordings of the sessions were conducted. The retrospective video observation allowed the researcher to view the

data from a distance. The researcher actively took part in all the sessions as a participant, offering technical help to the therapist and co-facilitation support whenever necessary. The researcher was involved in the therapeutic process as closer contact with the participants of study were believed to have greater impact of the research on the researcher. It was aimed to implement reflexivity throughout the process (Shaw, 2010). The bi-focal positions where the researcher shifted from zooming in to microscopic detail or to zooming out to indefinite were consciously shifted and the researcher was aware of the biases. For instance, the researcher was mindful of physical position during the sessions. The researcher joined the circle and moved empathetically with the participants. During dyadic configurations, she would generally wait for the participants to choose their partners and in case of odd number of participants she would fill in the gap. During reflective process, the researcher avoided any leading questions and she would mindfully shift to an observant's role during interviews. The researcher's involvement in this way is criticised from the point of view of quantitative research, however the process allowed the researcher to gain an understanding into participants' interactions, meanings and viewpoints (Delamont, 2004). This embodied experience enriched the subjective data of the therapeutic process, while at the same time measures were taken such that it would not compromise the other methods of data collection. Participant observation was maintained by video recording of all sessions, and acted as a means for documenting the journey of the groups. It acted as a reference point by capturing how well the sessions met the objectives, and created a platform for retrospective analysis of the content (Asan & Montague, 2014).

3.4.9 Arts-based methods of data collection

An arts-based exploration was followed in this study to draw on self-experiences and understand the embodied experiences of the therapeutic process. During the interviews, caregivers were provided with art materials with which to record the session, after taking a moment to consider how they were feeling at that moment. Caregivers were further asked to reflect their experience in their artwork. The children were also encouraged to make a mark or create artwork or clay models as a way to reflect their state of mind and to non-verbally record the impact of individual sessions (Hervey, 2004). Movement-based data was also collected using the embodied artistic inquiry approach (Hervey, 2012). The therapist encouraged participants to provide a movement response to significant moments of the session. This helped the researcher to observe participant movements, and to acquire some understanding of how it felt to be in that movement, to

experience that particular feeling or image, in that particular body. The movements were reflected back to the participant and the accuracy of the reflection was checked by asking if the reflections brought out the essence of their movement. Movement annotation (Levy & Duke, 2003) was also done using the video clips of these sessions.

3.5 Data analysis and synthesis

Diverse ways of processing the different types of data sets were used. All three ways of analysing or synthesising the different data sets, namely the quantitative, qualitative and arts-based data, are described below.

3.5.1 Quantitative data analysis

In the current study 23/26 children attended 70% or more sessions. The other 3 participants did not complete the intervention either because they did not accept it, or because they found it difficult to adjust to a change in their routine. Only one participant dropped out clearly stating that he liked science experiments more than dancing. Some children missed sessions due to illness, class trips, other school events, or the unavailability of the teaching assistants to escort the children with high dependency needs to the sessions. However, all outcome measures were obtained from all 26 participants and data from all 26 participants was included in the statistical analysis. Thus, the inclusion of data in the final analysis utilised an intention to treat (ITT) approach (Abraha et al., 2017; McCoy, 2017). The definition of ITT has remained inconsistent across literature. However, ITT can be understood as a principle, utilised in the analysis of randomised trials to protect against bias by conserving the benefits of randomisation, viz. balancing both known and unknown factors and eliminating selection bias (Bell et al., 2014). As per this principle all the participants who were originally allocated to DMP and control groups were considered for analysis regardless of their attendance and compliance to the DMP intervention and the assumption was that propensity for a data point to be missing was completely random. With regards to the caregivers, all 37 participants who filled up the pre-therapy questionnaires completed the post-therapy assessment. Despite having questionnaires-based data completed from all the caregivers, only ten out of twenty-one participants from the DMP intervention group actually attended 70 % of the sessions. This led ITT to be considered in the first instance for caregivers' data (AWS and PSI-SF). However, there was poor attendance in the intervention group for parents in particular, with seven out of eleven dropping out (11-7=4). Because of this, a per

protocol (PP) approach was chosen for inclusion in the final data set for PSI-SF scores. PP analysis included the data of the participants who strictly adhered to the protocol in the analysis as this data can potentially offer an estimate of the true efficacy of an intervention among those who completed the intervention programme as planned (Ranganathan, Paramesh & Aggarwal, 2016). Hence, for PSI-SF data of participants who attended at least 70% of the sessions from the experimental condition and age, gender, location matched data from control condition were considered. Nonetheless, in this context, there was a risk for distorted representation of the real life situation as it is likely to show an exaggerated treatment effect while considering only those who attended the intervention (Ranganathan, Paramesh & Aggarwal, 2016). Knowing the reasons for the high number of participants dropping out of the intervention group is important to actually reflect the acceptability of the intervention. Schulz, Altman and Moher, in the CONSORT 2010 statement, in fact, argue that both ITT and PP results should be reported in all RCTs. Therefore, to balance the approach to minimising bias while getting true efficacy of the intervention in those who attended the intervention, both ITT and PP approaches were used for caregivers' data to allow readers to interpret the effect of the DMP intervention.

3.5.1.1 Statistical analysis of children's data

All data from the 26 participants who completed the study were analysed using the Statistical Package for the Social Sciences version 25 for Windows (IBM, 2019). Figure 3.8 illustrates the crossover design as it was applied in the current study. As all conditions were met for conducting the parametric tests, a one-way ANOVA was performed to test for significant differences in pre-intervention scores for SDQ and SCQ at t1 for Group 1 and Group 2. This was to determine whether there were any differences in baseline scores between the two groups before receiving either intervention. Further, by considering additional covariates two separate ANCOVAs were performed on the data from period 1 (i.e. before crossover) to test for differences in SCQ and SDQ scores between those receiving the DMP intervention and the control group, following the intervention period, while controlling for pre-intervention scores. The participants' mode of expression (categorised as verbal and non-verbal) was entered into the model as well as the interaction term between groups (DMP intervention/control).

The intervention effects were calculated for the crossover design. Specifically, carry-over effects as well as intervention and period effects for SDQ and SCQ scores were assessed using the approach outlined by Jones and Kenward (2003). As shown in Figure 3.8 group 1 consisted of children who received intervention A (DMP intervention)

first followed by intervention B (control group consisting of standard care) [i.e. A then B]. Group 2 involved children who received intervention B first followed by intervention A [i.e. B then A]. All measures observed in the crossover analysis i.e. X_1 , X_2 , Y_1 and Y_2 were post-intervention scores and the timepoints indicated the four points in time at which each group was assessed for all the outcome measures in the study. Carryover effects were calculated by comparing the sum of values over both intervention periods between group 1 ($\sum X_1 + \sum X_2$) and group 2 ($\sum Y_1 + \sum Y_2$) using a 2-sample t-test. The intervention effect was tested for by comparing the difference between intervention A and intervention B for the 2 groups. For group 1 the differences were calculated for after time period 1 minus after time period 2 (i.e. $X_1 - X_2$), while for group 2 the differences were for after time period 2 minus those after time period 1 (i.e. $Y_2 - Y_1$). The period effect measured whether there was a change over time irrespective of intervention. Period effects were calculated by comparing the difference between period 1 and period 2 for the 2 groups. For group 1 the difference was calculated as $X_1 - X_2$ and for group 2 the difference was calculated as $Y_1 - Y_2$.

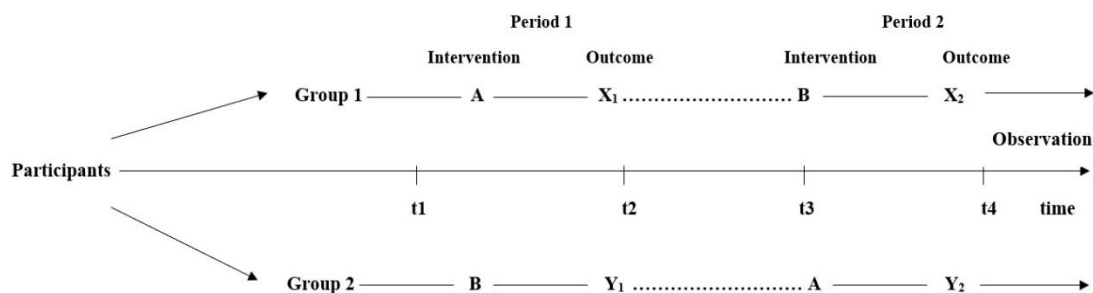


Figure 3. 8 Crossover design to test carry over, intervention and period effects. A=Dance Movement Psychotherapy (DMP); B=Standard Care; X_1 , X_2 , Y_1 , Y_2 =Post Intervention Measurement Timepoints. (Figure adapted from Welleck and Blettner, 2012).

Two repeated-measures ANOVAs were performed on the total data set, following a crossover to test whether the change in SCQ and SDQ scores differed between DMP intervention and control groups. The change in pre-and post-intervention measures was calculated for the DMP intervention and control conditions which were used as the two dependent variables in the model, classified as the within-subjects factor, intervention. A between-subjects factor was entered for group (group 1/group 2) which specifies the order in which participants received each condition (i.e. A then B versus B then A). This

analysis was performed to test whether the change in pre-and post-intervention scores differed between interventions received while controlling for the crossover design feature of the study.

As this was a pilot study, our measure for determining whether the DMP intervention was influencing our outcome measures was whether or not our change score reached our predetermined minimal clinically important difference (MCID). The MCID is often used in clinical intervention studies that adopt patient reported outcome measures. The approach allows us to conclude whether an intervention is having a clinically significant effect irrespective of the statistical significance value obtained (Jaeschke, Singer & Guytt, 1989; Cook, 2008). To calculate the change score equivalent to the MCID, the standard deviation of the baseline scores was multiplied by 0.2 (the small effect size) (Samsa et al., 1999). MCID was calculated for SCQ and SDQ *before* crossover. Eta squared was also calculated to determine effect size for all tests performed and then converted to Cohen's *d* using free online software by Psychometrica (Lenhard & Lenhard, 2017). An alpha level was used to set the standard and a level of 0.05 was chosen for determining statistical significance.

3.5.1.2 Statistical analysis of caregivers' data

A total of 19 parents completed the PSI-SF at pre- and post-intervention time points. Of these, eleven parents were assigned to the DMP intervention and eight to the control condition. A total of 37 caregivers completed the AWS at pre- and post-intervention time points; this figure includes both parents and teachers. Of this total, 20 caregivers were assigned to the DMP intervention and 17 to the control condition. One-way ANOVAs were performed to test for differences in pre-intervention PSI-SF and AWS scores between the DMP intervention and control conditions. Following this, two separate ANCOVAs were performed to test for differences in post-intervention PSI-SF and AWS scores between the DMP intervention and control groups. In the first ANCOVA post intervention AWS scores were entered as the dependant variable and pre-intervention AWS scores as well as number of sessions attended were entered as covariates in the model. Group (i.e. DMP intervention and control conditions) was entered as a fixed factor in the model. This analysis was performed to determine whether post AWS scores differed between those receiving the DMP intervention and those in the control condition while controlling for pre-intervention AWS scores as well as number of sessions attended by the caregiver. This latter covariate was entered in the model to account for the variation

in the number of sessions that the parents actually attended, used as a proxy measure of their engagement in the intervention. A similar ANCOVA was performed on PSI-SF scores. Here the post-intervention PSI-SF score was entered as the dependent variable, while pre-intervention PSI-SF score and number of sessions attended by the caregiver were entered as covariates in the model and group as a fixed factor with 2 levels (i.e. DMP intervention and control conditions). For both AWS and PSI-SF scores the MCID was calculated using the same approach as that used for SCQ and SDQ outlined in section 3.5.1.1. In addition, eta squared was also calculated to determine effect size for all tests performed and then converted to Cohen's *d* using free online software by Psychometrica (Lenhard & Lenhard, 2017). An alpha level of 0.05 was chosen to determine statistical significance.

Due to high attrition rate in the parents' data set, as an exploratory step, a Per Protocol (PP) approach was also used. As per the PP criteria set for the parents' data set, only four participants were eligible from the experimental condition to be included in the analysis of PSI-SF data. Due to this small sample size, non-parametric tests, specifically, Wilcoxon signed-rank test and Mann-Whitney U test were preferred for within and between subject's analysis. The Wilcoxon signed-rank test is the non-parametric equivalent of the dependent t-test and it was used to compare the paired data of pre and post DMP coming from the same group and indicated if there were differences within the groups attending DMP and within the group which received only standard care. The Mann-Whitney U test on the other hand compared the scores of the participants who attended DMP and the control group with standard care as usual. This is the non-parametric equivalent of independent sample t-test.

3.5.2 Qualitative data analysis

Qualitative data that were collected during the sessions of DMP consisted of five clusters of child participants and each cluster was offered ten sessions. So, in total the data is from fifty sessions for children. Each session lasted for forty minutes and the video of all the sessions constituted approximately 2000 minutes footage. In addition, there were four clusters of caregivers with five sessions for each cluster, giving a total of twenty sessions. Each session lasted for 90 minutes and the total video footage was for 1800 minutes. Movement response and reflection of the therapist after each session ranged from 1-4 minutes (on average 2 minutes) and the total sample (children and caregivers) was for 140 minutes. Adding up all children's, caregivers' and therapist's videos gave around 65

hours of video material. The contents were transcribed and extracted to a spreadsheet to meet the research questions in order to subject the content of these sessions to thematic analysis. Contents of all the sessions were considered. However, priority was given to the key moments in the video sample which the therapist noted for every session. In the next phase the transcripts were used for thematic analysis, a qualitative method used for identifying, analysing and reporting patterns (themes) within data (Riessman, 1993; Lapadat & Lindsay, 1999; Braun & Clarke, 2006). This process was intended to organize information, examine relationships and identify trends in non-numerical and unstructured data (QSR, 2017). Organisation of the extracted meaning from the data began with an open coding system where line-by-line reviewing of the data was used to gain the overall essence of the text and to generate the codes. Further, themes and major categories were formulated or synthesised on the basis of significant statements and meanings perceived by the researcher considering the context under which the data was produced. Selective coding was conducted to bind the sub-themes to those core-categories that were relevant. This organizing process of analysis was intended to be holistic, displaying the inter-relationships among these central themes and categories (Tesch, 1990). Several attempts were made to draw flow charts and figures in order to visualise the themes and logically link the concepts. Finally, a summary of the findings was constructed based on the qualitative findings by retaining richness in the final themes as well as showing the inter-relationships among these themes. This approach was adopted to gain a more holistic understanding of the phenomenon.

3.5.3 Arts based data analysis

The creative synthesis approach proposed by Moustakas (1990) was used to create, explore, understand, synthesise and express the meaning of the data. Through the process of ‘dialoguing’ with the data, as suggested by Wadsworth-Hervey (2000), the essence of the movement pieces experienced by the therapist and participants during the session were extracted and woven into a structured choreographic entity. The movement data was thus re-sculpted into an artistic representation through a dance which was performed and recorded by the researcher. The main purpose of this step was to develop an aesthetic rendition of the themes and essential meanings of the phenomenon. This process offered a ‘free reign of thought and feeling that supported the researcher’s knowledge, passion, and presence’ (Moustakas, 1990: 52). This method also facilitated the researcher to fill the work with personal, professional and literal value using arts-based work with narratives and metaphors as a mode of expression. The researcher responded to the

movement responses to the key movements and arts data provided by the therapist and participants through movements and drawings. These movement sets were then categorised under different themes and synthesised artistically.

Movement phrases from all sets of the gathered data were subjected to systematic analysis. This followed five stages of actions (Hervey, 2000).

- a) *Initial awareness* - at this stage significant movements were singled out based on aesthetic reasons or based on the intensity of the kinaesthetic feeling.
- b) *Decontextualization and intentional re-creation*- here the movements were repeated again and again and re-created from its original function. Some movements remained the same and some were improvised or transposed from their original occurrence in time, space and form.
- c) *Appreciation and discrimination*- the recreated and emerging movements were assessed critically based on aesthetic criteria and were verified to see if they were in-line with the research question.
- d) *Refinement and transformation*- emerging movement work was manipulated and adjusted until satisfied.
- e) *Recontextualization*- the newly created piece was purposefully positioned in the studio setting where the impact of the dance piece enhanced and facilitated the video recording to disseminate the work.

3.5.3.1 Artistic presentation

Aesthetically motivated and determined dance pieces or products of this inquiry were created and video recorded. These aesthetically driven pieces were not as cognitively explicit as the narratives that are given in the results section, but the dance pieces were intended to subtly bring out the essence of the inquiry and convey the emotions and themes to the viewers. Abstract and metaphoric images that arose spontaneously were nourished by using props to convey the experiences. While creating the piece, the researcher was aware of her aesthetic values, sensation, emotions and intuitions. In addition, she was also mindful that the quality and form of this piece were influenced by her dance background and rigorous training in one of the Indian classical dance forms called Bharatanatyam. However, she was open to play dynamically and move between the refined form and raw movements. The choice of movements was made by being sensitive to the aesthetic values of authenticity, geometrical body shapes, gestural clarity,

footwork and rhythmical patterns, body movements blending with the music, depth in the facial expressions, flow in the story/narration (Iyengar & Smith, 2020).

3.6 Trustworthiness

Several measures that speak to qualitative, quantitative and arts-based approaches have been used to establish the trustworthiness of this study. For qualitative and arts-based components of the study, credibility, transferability, dependability, and confirmability were considered (Lincoln & Guba, 1985). The credibility aspects were monitored by implementing prolonged engagement and persistent observation with the participants and also with the data. Another key element was triangulation process by utilising various sources (participant observation, video annotation, semi-structured interviews) to examine and verify answers to qualitative research questions. Here triangulation was not used between different types of research methods, rather it was restricted to within the different qualitative data sets. Peer debriefing and discussion with supervisors also supported to enhance the credibility of the qualitative and arts-based analysis. The next aspect on transferability was addressed by paying attention to detailed description of the study's settings, participants, procedures used to collect data and data analysis so that it helps other researchers assess whether the findings make sense in other similar contexts. In order to improve the dependability of the study, emphasis was given to the referential adequacy of the stored raw data and clarity in the description analysis, and interpretation to support step wise replication. Confirmability was achieved by taking measures such as paraphrasing and reflecting movements back to the participants to check if the researcher's understanding of the materials shared by the participants reflected what they actually intended. This ensured that the data spoke for itself, and was not based on assumptions of the researcher. Instead, the researcher's personal beliefs, assumptions and understanding of the events that unfolded during the course of the project were recorded in a reflexive journal which was maintained for the duration of the PhD study.

For the quantitative components of the study internal validity, external validity, reliability and objectivity were well-thought-out and upheld the trustworthiness of the study. While selecting the tools and research design, attention was given to the validity and reliability or internal consistency. Attempts were made to anticipate threats to internal validity and control some of the confounding variables during data collection. Further steps were taken through statistical measures to make sure that changes in the dependent variable are happening from only the independent variable, not from other confounding

variables. Other factors that could affect external validity such as participant selection, randomisation, situation, time and intervention were meticulously followed. While analysing the quantitative findings the researcher distanced herself from the data and viewed it as objectively as possible. Since this was a mixed-methods study, and in order to maintain an objective stance, quantitative data were analysed before diving into the qualitative data analysis process. Overall, in this mixed-methods study, through the steps described above, four values (namely: truth value, acceptability, consistency and neutrality) boosted the trustworthiness of the study.

3.7 Ethical considerations

This study involved children on the autism spectrum and their caregivers as participants. This, of course, raises ethical issues. Utmost care was taken to uphold the safety and dignity of the participants and the researcher while planning and implementing the research design. The intervention programme followed the code of ethics and professional practice (Appendix VI) provided by the Association for Dance Movement Psychotherapy (ADMP UK, 2013). Ethical Guidance for Undertaking Research with Children and Young People provided by Edge Hill University was also followed in order to safeguard the young participants and promote the good practice of research:

1. Choice: The participants' individuality and autonomy were respected throughout. Different factors such as intellectual ability, preferred mode of communication, language comprehension and expression ability were also considered while presenting the information about the research. Children were encouraged to attend a session and necessary time was given for them to experience and make a choice if they wanted to continue.
2. Consent: In the first stage the consent was taken from the gate keepers and legal representatives (parents) in order to avoid potential judicial challenges and research constraints as per National Children's Bureau ethical guidelines (Shaw et al., 2011). The children were given an assent form to express their will to participate as recommended by the European Commission (Chadwick et al., 2011). They were explained about all the foreseeable benefits, risks, confidentiality, safety, rights on withdrawal in simplest language using multisensory inputs (Chadwick et al., 2011). Adults were provided with participant information sheets designed in simple and easily comprehensible

language, and written consent was taken from them before the data collection. The letter was read out to them and they were given enough time to read by themselves. Their doubts (if any) were addressed before signing the letter.

3. Risk, Harm and Distress: Understanding that every project contains an element of risk, a risk assessment plan was developed (See Appendix VII). It considered such things as timescales; resource availability; technology; the research environment and other unplanned occurrences or unforeseen risks. To manage these risks four main options were considered.
 - a. Accepting the consequences of the risk. Risks were anticipated and mitigation plans were prepared. For example, if the project experienced unplanned absences of the therapist or the researcher (say, due to sickness, travel breakdown) a replacement plan was ready. To accommodate this extra time was also built in.
 - b. Transferring the risk. For example, the financial risk of no funding for the intervention programme was covered by dividing between the departments and research bursary fund.
 - c. Avoiding the risk. For example, having established that the likelihood of getting a large population of children on the autism spectrum and their caregivers being available to join the intervention programme is extremely low. So, a cross-over design was chosen.
 - d. Reducing the risk. Having acknowledged that the risk may occur, it was pre-planned to take steps to reduce its impact. So, to reduce the risk of drop outs in the intervention programme, we planned to start the intervention programme with a large number of participants and plan wisely for full commitment to the convenient logistics, time and place.

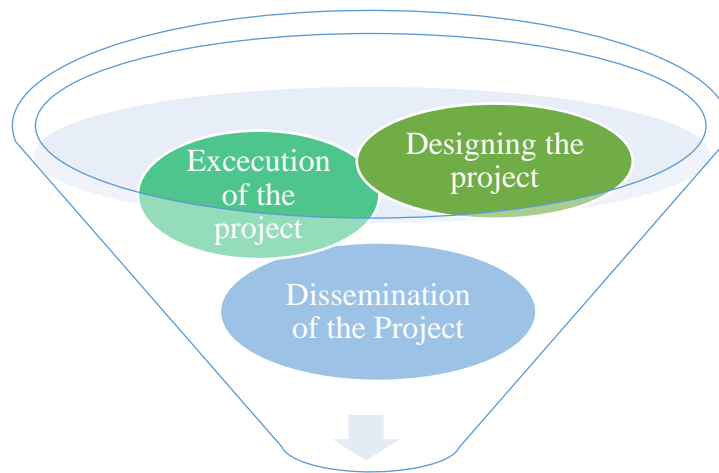


Figure 3. 9 Completion of the project with ethical considerations at all stages of the project

As shown in Figure 3.9, we ensured that the project did not harm or cause any problem to the participants, researcher, therapist and supervisors at any stage of the project. The ethical processes were kept in check by consulting the supervisory team regularly.

4. Monitoring and reporting of adverse or unforeseen events: In case of an adverse or unforeseen event, we made sure that the rooms had telephones to contact the school First Aid Officers or the Emergency Services. Adverse or unforeseen events including physical injuries or unsettled emotional vulnerability were reported to the departmental safety officer in the first instance and we had plans in place to follow up by the University Safety officer if deemed necessary. The researcher was also aware that where necessary the Research Ethics Committee would have to be notified of such events.
5. Time was another factor which was considered carefully in order that it did not cause fatigue and distress to the participants. The tests were kept very short (less than 10 minutes) with breaks at regular intervals. While scheduling the sessions it was seen to that the programme did not affect other regular activities of children in school. Sensitive materials which came up during the DMP session were handled delicately with care. Cool down was implemented at the end of the session and it was made sure that the participants were not left out in a vulnerable state. Safety of the client and the therapist was considered throughout the data collection stages.

6. **Benefit:** The research design aimed to bring immediate and future benefits to the participants directly and eventually to a larger community. The whole project was about the wellbeing of the participants. It was hoped that the DMP intervention programme would provide the participants a safe zone to express themselves and that would be it was beneficial to them.
7. **Privacy and Confidentiality:** The foremost goal was to build a trustworthy relationship and offer a safe environment where participants could express themselves. Video recording of the session was essential for movement analysis. Hence, prior permission was taken from the participants in the consent letter and time was provided to get accustomed to the presence of the camera so that the participants' responses were natural. It was ensured that the presence of the camera did not affect the session, and the recordings are now kept confidentially as indicated in the data management plan that can be found in Appendix VIII of this document. The video recordings were used only by the research team for analysis purposes. Data are stored securely according to the Data Protection Act (1998) for ten years. Pseudonyms were used. The information shared by the participants were not be disclosed unless it is considered harmful to themselves or to others. Sensitive issues (such as suicidal tendencies, child abuse) were discussed with the participants before disclosure and recommendations were made to the appropriate professional identified prior to the study in each school (e.g. year tutor, SENCO, safeguard officer, school nurse or GP).
8. **Dignity:** The study was conducted in a manner designed to avoid any sort of inconvenience, intrusion, embarrassment, coercion or distress to the participants. Cultural background, ethnicity, gender, religious beliefs, socio economic status of the participants were respected and were treated equally. The participants' role in the research is acknowledged and they have been thanked.
9. **Data Management Plan (See Appendix VIII):** A clear data management plan details the collection, storage and protection of data. The detailed report can be found in Appendix VIII.

All ethical decisions and procedures were overseen and approved by the Edge Hill University Ethics Panel within the Faculty of Arts and Sciences.

3.8 Summary of the methodology

To sum up, in this chapter various aspects of the methodology were outlined. It started with the description of the philosophical stance, pragmatism, that is adopted in the study. It was followed by a brief description of the overall structure of the study. It then delineated the methods involved in conducting the systematic review as phase I of the study. This was followed by the description of the mixed-methods design of phase II. The selection, allocation and delivery of the intervention were also described for children and caregivers separately. A battery of questionnaires for quantitative data, participant observation, video observation, semi-structured interviews for qualitative data and movement responses from the participants for arts-based data were used as methods of data collection in relation to the type of research questions. Justification for the choice of the tools and the methods were offered. The way in which the three different types of data analysis were implemented to unearth the answers, understand and interpret the diverse and rich data were laid out. This included the description of ITT approach for statistical analysis, steps involved in thematic analysis and the dialoguing process with the arts-based data. Finally, trustworthiness and ethical considerations were charted.

The next chapter will provide the findings of the systematic review that was conducted in the phase I of the study.

CHAPTER FOUR: FINDINGS OF THE SYSTEMATIC REVIEW (PHASE I)

Chapter four will present the results of the systematic review. At first, this chapter presents the number of studies found in each stage of the systematic search including a detailed account of step by step filtering of potential records; reasons for exclusion are also provided. After presenting an overview and basic characteristics of the studies included for the review, exhaustive description addressing the two research questions of the systematic review are given. Data extracted from the reviewed studies are presented in tables and the synthesised summaries provide details about the ways in which DMP has been used by the researchers in the past. Various outcome measures used and the findings of the studies on DMP for children with ASD are synthesised and discussed. The results of quality assessment of the reviewed studies and overall completeness of the systematic review are described towards the end of this chapter.

4.1 Findings of the systematic review

The previous chapter on methodology described how the search strings were formed and procedure followed to filter the studies. As shown in the PRISMA flow chart (Figure 4.1), the combined search formula step 1 AND step 2, produced 1,134 hits. These potential records from different databases were stored as different folders in Zotero software (2018). Out of 1134 records, 649 were irrelevant and were treated as noise. The remaining 485 articles were exported to the Covidence account. Covidence identified 162 duplicates and removed them from the list. This left the record with 329 articles for title and abstract screening. As shown in Table 4.1 Cinhal Complete followed by Psycinfo and Pubmed had most numbers of relevant articles. Handpicked searches where studies were searched from various universities' repositories and correspondence with researchers generated the highest record. However, most of them did not satisfy the study design criteria because they were unpublished Masters level dissertations. At the abstract and title level scrutiny 253 studies were excluded because they did not meet the criteria for study design (122), population (70) or intervention (61). Following the screening of 76 full texts, a further 67 studies more were omitted on the grounds of study design (54), population (6), or intervention (7). Some of the studies were excluded for more than one reason but were counted only once following the order of the criteria, i.e. study design, population and intervention. One of the included studies was a doctoral thesis (Samaritter, 2015). Three

out of four sub-studies of this thesis qualified to be included in the review. These three smaller studies were considered as a unity. Thus, the total number of studies in this systematic review was seven.

Table 4. 1 Number of hits against databases searched

Databases	Number of hits (Search string 1+2)	Number of articles imported to Covidence from Zotero (After removing irrelevant)
Academic search primer	17	13
CORE	40	1
PsyARTICLES	7	1
Emerald Health and Social Care Journals	4	0
PsycINFO	85	67
Proquest Health Research Premium Collection	227	11
ERIC	40	4
Wiley	25	4
PubMed	66	42
BioMed Central Journals,	12	0
Cinahl Complete	82	68
BASE	88	27
Science Direct	56	4
Handpicked searches from different university library (Antioch, Sarah Lawrence, Columbia, Drexel, Queens Margaret, Roehampton, Goldsmiths, Edge Hill, Derby)	385	237
Handpicked records		6
Total	1134(Total hits) - 649 (irrelevant)	485
Records left for title and abstract screening	485 (imported from Zotero)-165(duplicates removed by Covidence)	329

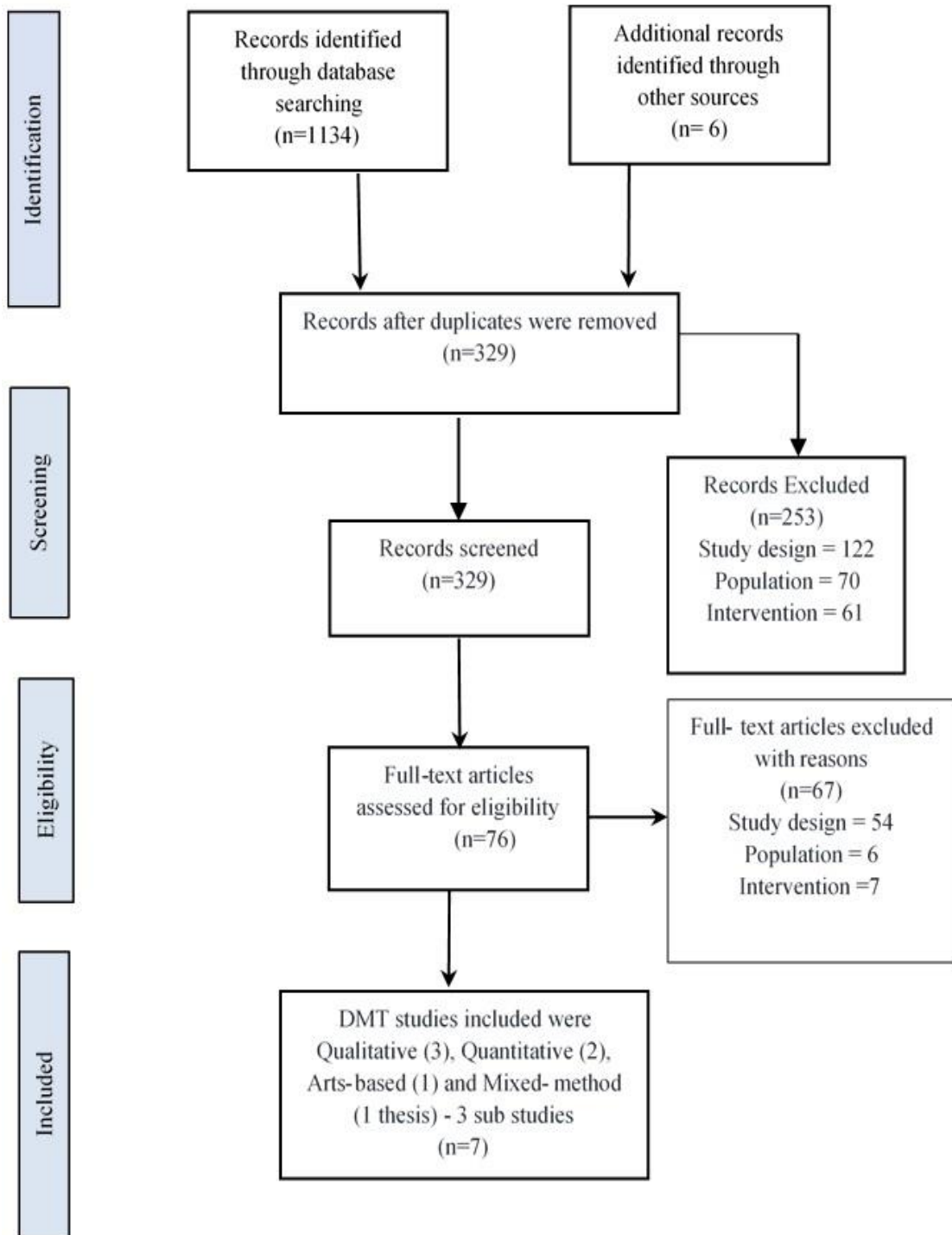


Figure 4. 1 PRISMA flowchart diagram

4.1.1 Overview of included studies

The seven studies included in the review are summarised in Table 4.2. With regards to the research questions that are addressed, some studies (Samaritter, 2015; Athanasiadou & Karkou, 2017) focused on the process of DMP while others described either the intervention techniques (Wengrower, 2010) or ways of evaluating practice (Houghton & Beebe, 2016); the remaining studies focused on outcomes (Hartshorn et al., 2001; Chiang, Chu & Lee, 2016).

The most recent of the seven studies included in this review was published in 2017 and the oldest in 2001. The studies were conducted in various parts of the world, though the majority were from the West (USA, UK and EU); one study was from Taiwan. Special education schools were the most common environments for DMP sessions to take place followed by clinical or hospital-based settings. In total, there were 142 participants across these seven studies. Sample sizes were small ranging from one to thirty-eight participants per arm (experimental and control). Hartshorn et.al. (2001), with an experimental research design, had the largest sample size: 38 participants in each of the two groups included, the experimental and the control group (totalling 76 participants). The second largest sample was in the Taiwan-based study (Chiang, Chu & Lee, 2016) which included 34 participants (18 in the experimental condition). Houghton & Beebe's (2016) video micro-analysis study involved an individual case that used small videoclips of the therapist and participant interaction from a session.

Table 4. 2 Author, place, participants and design.

Authors and Year	Country	Participants (Sampling size, Diagnosis, Age)	Study Design
Athanasidou and Karkou (2017)	England	N=3; all with ASD; Age range=6-7years (yrs)	Series of case studies (Arts-based)
Devereaux (2017)	New England, Keene, NH, USA	N=17; 15 children with ASD, one child with down syndrome and one child with cerebral palsy; Age range= not mentioned	Interpretive qualitative approach
Houghton and Beebe (2016)	Columbia University, New York, USA	N=1; ASD; 16yrs	Video Micro analysis
Chiang, Chu and Lee (2016)	Taiwan, Republic of China	N=34; all with ASD; Age range=2-4yrs	Quasi-experiment research design
Samaritter (2015)	University of Hertfordshire, UK and Netherlands	N=4; All with ASD; Age range=6.3-17.2yrs Mean Age=12.02yrs	Mixed-methods Design: Retrospective video analysis
			Mixed-methods Design: Retrospective video analysis
		N=4, all with ASD; Age range=11.9 -17.1yrs Mean Age=14.9yrs	Mixed-methods Design
Wengrower (2010)	University of Barcelona, Spain	N=3 (2 children with ASD and one child with PDD); Age range=3-8yrs; Mean Age=6.3yrs	Multiple case study Design
Hartshorn, Olds, Field, Delage, Cullen and Escalona (2001)	University of Miami, School of Medicine, Miami, Florida, USA	N=76, all with ASD; Age range=3-7yrs; Mean Age=5yrs	Experimental Design
Summary			
Year Range: 2001-2017;	Countries: EU, UK, US, Taiwan	N=142; Mean age= 9.1yrs (age not mentioned in one study)	QUAL-3 QUAN-2 MIXED-1(3), ARTS- BASED-1

Note. [EU – Europe; UK – United Kingdom; US- United States; N- No. of Participants; QUAL- Qualitative; QUAN-Quantitative]

In six out of the seven studies, the participants were children with a formal diagnosis of ASD, albeit the severity of ASD presented remained unclear. Studies with more than 75% children or adolescents of 16 years of age or below were included for the review. From the studies included, the average age of the participants was 9.6 years (age range = 2 to 16.7 years). An exception to these studies was the one by Devereaux's (2017), which involved 13 special educators reporting on their observations of DMP sessions for children with ASD. This study was included in the review because it described the contribution of DMP for children on the autism spectrum from the educators' perspective and was thus, answering one of the review research questions exploring the findings of DMP intervention for children with ASD.

The seven studies included in the review followed different methodological approaches. Specifically, one study followed an arts-based research design (Athanasidou & Karkou 2017); three were qualitative (Wengrower, 2010; Houghton & Beebe, 2016; Devereaux, 2017) and two were quantitative (Hartshorn et.al. 2001; Chiang, Chu & Lee 2016) studies. All three subsections of the thesis by Samaritter (2015) were conducted using a mixed-methods design.

4.1.2 Qualitative research question 1- Ways in which dance movement psychotherapists work with children on the Autism Spectrum

To address the first research question, we extracted information on therapeutic frameworks, techniques, overall processes that informed DMP intervention and the dosage in which the sessions were delivered (Table 4.3).

Therapeutic frameworks: This section considered the theories, principles and approaches that conceptually informed the DMP intervention. It was noticed that reporting the type of therapeutic approach adopted was not a widespread practice among DMP researchers as only three studies specifically described their approach and lens in which the therapy sessions were delivered (Chiang, Chu & Lee 2016; Athanasidou & Karkou 2017; Devereaux, 2017). The rest of the studies only reported either the structure of the session or the activities conducted during the DMP sessions. Although all seven studies included in the review have referred to various theories in their literature review section, it is unclear if those theories have really influenced the development and delivery of the DMP sessions or if they were referred to from a research perspective. However, for better understanding of the subject, the data extraction process of the present review considered all important theories mentioned in the studies' literature review as well as in their methods sections, distinguishing between the two.

Table 4. 3 Intervention characteristics

Authors & Year	Why	What	How	Who	How much, When and Where			Tailoring and modifications	How well
	Therapeutic frameworks	Techniques	Overall process	Therapist qualification	No. of participants in the group & Therapist to Client ratio	Dosage	Settings		Fidelity assessment
Athanasiadou and Karkou (2017)	<ul style="list-style-type: none"> • Persons centred (Rogers 1967) • Chace interactive model of DMP (Chaiklin & Schmais 1986) • Intersubjectivity theory (Meltzoff & Brooks 2007; Stern 2005; Trevarthen 2005)* • Kinaesthetic empathy (Berger 1972) • Sherborne Developmental Movement (Sherborne 2001). • Embodiment-Projection-Role model (Jennings 1999); 	<ul style="list-style-type: none"> • Sensorimotor-based activities (Scharoun et al., 2014). • Mirroring (Wengrower, 2010) • Moving in Synchrony • Purposeful Misattunement (Stern, 1985) • Use of props • Use of metaphors • Rhythmic movement explorations • Embodied play, symbolic play activities • Shaping circle and moving in or away • Relaxation play • Goodbye movements 	<p>Intervention programme structure: Four modules- with eight sessions divided unevenly (module 1- one session, module 2- three sessions, module 3 and 4- two each)</p> <p>Session structure: Loosely structured around warm up mid-face and closure.</p>	A licenced DMT practitioner	3 children and 1 adult	DMT, 8 group sessions, 50 Min once a Week	Special School	<p>Case 1:</p> <ul style="list-style-type: none"> • Therapeutic Holding Environment (Winnicott & Rodnam 2005) • Sensorimotor-based activities (Scharoun et al. 2014). <p>Case 2:</p> <ul style="list-style-type: none"> • Mirroring (Wengrower, 2010) <p>Case 3:</p> <ul style="list-style-type: none"> • Purposeful Misattunement (Stern, 1985) 	NA

Devereaux (2017)	<ul style="list-style-type: none"> • Child-centred approach (Rogers 1967) • Social engagement theories (Greenspan & Wieder, 1999)* • Relational interaction (Ogden, Minton, & Pain, 2006)* 	<ul style="list-style-type: none"> • Synchronistic rhythmic action • Self-expression movements • Building connection on movement level • by moving closer, reaching • Circle formation • Tapping, stretching movements • Expansive movements • Understanding, reflecting, expanding non-verbal expressions • Attuned improvisation • Use of music • Use of props • Relaxation techniques 	<p>Session structure: Warm-up Theme development Closure portion</p>	Registered or Board certified DMT	5 to 7 children and 1 or 2 adults	DMT, 30 Min, Once a Week	Special Education	1 child with Down's syndrome, 1 child with Cerebral palsy	NA
Houghton and Beebe (2016)	<p>Literature review refers to</p> <ul style="list-style-type: none"> • Disruption and repair (Beebe & Lachmann, 1994)* • Dyadic systems view (Beebe & Stern, 1977)* • Laban Movement Analysis (Bartenieff & Lewis 1980; Laban, 1956) 	<ul style="list-style-type: none"> • Interpersonal coordination • Imitation • Mirroring or Attunement • Synchrony • Use of kinesphere, different planes • Following the child's lead in the movement patterns, energy level, 	<p>Session structure: Unstructured movement exploration</p>	Final year master's DMT training at a program approved by ADTA	One child and one adult	DMT, 30 Min, one session	Multipurpose special school	Beginning-Movements directed as he was not able to follow and imitate later turned into mirroring	

	<ul style="list-style-type: none"> • Kestenbergl Movement Profile (Amighi et al., 2018) 	<ul style="list-style-type: none"> • amount of connection, direction • Intuitive and improvisational exploration 							
Chiang, Chu and Lee (2016)	<p>Creative movement play approach was developed using:</p> <ul style="list-style-type: none"> • Joint Engagement (Kasari et al., 2010)* • Body informed intersubjectivity (Lee 2014; Samaritter & Payne 2013) * • Child-centred approach (Rogers, 1967) 	<ul style="list-style-type: none"> • Imitation • Mirroring • Toy play • Movement play • Meaningful play routine • Facilitating sharing communication • Encouraging child's initiating communication • Managing child's emotional regulation 	<p>Intervention programmes structure: 10 modules with different objectives and overall process.</p> <p>Session structure:</p> <ul style="list-style-type: none"> • Reviewing the dyad homework • coaching effective caregiver-child interaction • Discussing handout on objectives, goals of the homework. 	Two licensed clinical psychologists and one licensed dance/movement intervention	Parent child dyad and each interventionist worked with 4 to 7 dyads separately	DMT, 20 sessions, 60 min, Twice a Week across two months	Clinical & research setting	Movement play routine Affective attunement Facilitate Joint Engagement State	2 independent evaluators for videotapes of pre, post 3 months follow up- Therapists- high internal reliability Cronbach's $\alpha=0.96$ Parents- moderate internal reliability
Wengrower (2010)	<p>Literature review referred to</p> <ul style="list-style-type: none"> • Psychodynamic - Developmental (Alvarez 1996) 	<ul style="list-style-type: none"> • Imitation (Stern, 1985) • Mirroring (Loman, 1998) 	<p>Session structure: Details not described explicitly.</p>	Qualified DMT	One child one adult	NA	Special education settings	NA	NA

	<ul style="list-style-type: none"> • Developmental individual difference relationship-based model (DIR) (Greenspan & Wieder 2006)* • Laban Movement Analysis (Bartenieff & Lewis 1980; Laban, 1956) • Kestenbergl Movement Profile (Amighi et al., 2018) 	<ul style="list-style-type: none"> • Attunement (Loman, 1998) • Empathic reflection (Sandel, 1993) • Use of transitional objects (Winnicott, 1971) • Exploratory movements and play • Sharing rhythm • Ritualistic actions 	Warm up and movement dialogue are mentioned in fifth session.						
Hartshorn, Olds, Field, Delage, Cullen and Escalona (2001)	<p>Literature review referred to</p> <ul style="list-style-type: none"> • Physiology of stress reduction and enhancing attentiveness (Field, 1998) 	<ul style="list-style-type: none"> • Hello song, • Clapping the syllables • Use of props- hoops, gym mats, tambourine, stickers • Jumping in and out of hoops, obstacle course, making different shapes, start and stop games • Behavioural class management techniques 	<p>Session structure:</p> <ul style="list-style-type: none"> • Warm up activity • Intermediary activities structured with task, role and space • Cool down 	Trained movement Therapists	3 to 8 children and 2 adults	DMT, 16 sessions, 30min, Twice a Week	School for children with Autism	NA	NA

Samaritter (2015)	<p>Literature review referred to- Interpersonal engagement theories from social cognition, social neuroscience, developmental perspectives.</p> <ul style="list-style-type: none"> • Theory of Mind (Baron-Cohen, Leslie & Frith, 1985)* • The weak central coherence theory (Firth, 1989)* • Executive functioning theory (Ozonoff, Pennington & Rogers, 1991)* 	<ul style="list-style-type: none"> • Open-ended movement explorations • Use of props and variation of movement actions as starting point of improvisation • Structured games for example martial arts forms, baseball, dodge ball actions of synchronisation, attunement and dyadic engagement • Witnessing Mode- Space for individual movement experience • Joint movement-creating sameness • Movement Dialogue – Sharing sameness and otherness • Other relational modes- stillness, short oral evaluations 	<p>Session structure:</p> <ul style="list-style-type: none"> • Opening • Warming up • Structured games and dance/movement activities • Open movement activities • Closure 	Researcher as Therapist (Qualified DMT Therapist)	One child and one adult	Shared Movement Approach (SMA) Intervention; 12 sessions,	Dutch Mental Health Care Centre (Clinical Outpatient Therapy)	NA	NA
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	Therapeutic frameworks	Techniques	Overall process	Therapist qualification	No. of participants in the group & Therapist to Client ratio	Dosage	Settings	Tailoring and modifications	Fidelity assessment
Summary	<ul style="list-style-type: none"> • Not all studies have mentioned the intervention approach explicitly • Person-centred approach, Social engagement and intersubjectivity related theories are most common 	<ul style="list-style-type: none"> • Mirroring-most common • Sensorimotor explorations creatively merged alongside the use of play techniques, rhythm and props 	<ul style="list-style-type: none"> • Overall structure described by only two studies • Session structure: Semi-structured most common 	<ul style="list-style-type: none"> • Qualified DMT • Experience of the therapist mentioned in only one study • Three studies with researcher as therapist 	<ul style="list-style-type: none"> • Three studies with one to one DMT • Three studies group sessions DMT • One study with caregiver-mediation 	<ul style="list-style-type: none"> • Frequency: Once or twice a week • Total: 8 to 20 sessions across-One and a half to two months • Duration- 30 to 60 minutes 	<ul style="list-style-type: none"> • 5 studies in special educational needs settings 	<ul style="list-style-type: none"> • No clear pattern-driven by the needs of each child 	<ul style="list-style-type: none"> • Mentioned by only one study

As shown in Table 4.3, the three studies that were explicit about their therapeutic approach, referred to person-centred or humanistic principles⁸ (Chiang, Chu & Lee, 2016; Athanasiadou & Karkou, 2017; Devereaux, 2017). In a humanistic approach of DMP, the focus is generally on strengthening clients' resources in the here-and-now (Karkou and Sanderson 2006). For the rest of the studies, details provided within the description of sessions and the literature review appear to have influences from the humanistic approach. For instance, in studies Wengrower (2010); Samaritter (2015); Houghton and Beebe (2016) references are made to kinaesthetic empathy, Chace interactive model of DMP (Chaiklin & Schmais, 1986), initiating the movements following the child's lead in the movement patterns and energy level resonate with the humanistic principles.

Apart from the humanistic approach, elements of developmental ideas⁹, psychodynamic¹⁰ and behavioural¹¹ thinking were also found in some of these studies. Three studies (Wengrower, 2010; Samaritter, 2015; Athanasiadou & Karkou, 2017) have referred to the relevance of developmental models such as Developmental Individual difference Relationship-based model (DIR) (Greenspan & Wieder, 2006) and Sherborne Developmental Movement (Sherborne, 2001) as relevant to DMP sessions. These developmental approaches allowed the therapists to determine movements, to engage with sensorimotor explorations, to support fundamental capacities for joint attention, to achieve regulation, and encourage children's development of a wide range of emotional, social and communicative skills appropriate to the stages of development and age. Traces of psychodynamic perspectives were found in two studies (Wengrower, 2010; Houghton & Beebe, 2016). A dyadic system view of communication (Beebe & Stern, 1977) and the psychodynamic-developmental model (Alvarez, 1996) mentioned in the latter two studies elucidate the nature of interpersonal process and interactive regulation in the dyad. Houghton and Beebe (2016); Wengrower (2010) have brought in psychodynamic thinking by viewing the movement interaction from mother-child lens and attachment

⁸ 'Humanistic' is an umbrella term used to refer to a number of different approaches to therapy (client/person-centred therapy is one such example - Rogers 1942), all of which focus on strengthening clients' resources in the here-and-now, value I-thou relationships, empathy and consider the client as leading the process of the work (Karkou and Sanderson 2006).

⁹ Developmental perspectives focus on providing interventions that are developmentally suitable to the skills and capacities of participants (Karkou and Sanderson 2006).

¹⁰ 'Psychodynamic' is a broad term which includes Freudian and meta-Freudian schools of thought, all of which believe in the existence of the unconscious, assume one's first years of life shape one's emotional life and attempt to make links with past experiences (Karkou and Sanderson 2006).

¹¹ A behavioural approach believes that all behaviours are *learned* through interaction with the environment and focuses on establishing observable stimulus-response behaviours with clear expectations of behaviours to specific stimuli (Barbera and Rasmussen 2007).

patterns. Influences from behavioural approaches were also found in two quantitative studies (Hartshorn et.al., 2001; Chiang, Chu & Lee, 2016). These studies focused on how behaviours and skills change, the way learning takes place and also stressed the role the environment plays in enabling new learning within the context of DMP sessions.

The most common trend prevalent in six out of the seven studies was the allusion to theories focusing on social engagement and interpersonal relationships. As indicated with an * in Table 4.3, eleven different theories have been reported to describe processes that are often associated with achieving: shared understanding, relating one situation to another, broad range of social roles and relationships, interaction between individuals and their environments from social cognition, social neuroscience and also from a developmental perspective. Among those eleven theories, the intersubjectivity theory (Stern, 2005; Trevarthen, 2005; Meltzoff & Brooks, 2007) used for describing relations between people, has influenced the development of two DMP intervention models called Shared Movement Approach (SMA) by Samaritter (2015) and Creative Movement Play approach by Chiang, Chu and Lee (2016). Intersubjectivity theory was also used to explain a core concept used in DMP called Kinaesthetic empathy (Jerak, Vidrih & Zvelc, 2018). Further, the same theory has encouraged Houghton and Beebe (2016) to look more deeply at disruption and repair within a dyadic system.

Within these different relational theories, three studies (Wengrower, 2010; Samaritter, 2015; Houghton & Beebe, 2016) have incorporated movement-based systems such as Laban Movement Analysis (Laban, 1956; Bartenieff & Lewis 1980) and Kestenberg Movement Profile (Amighi, Loman & Lewis, 1999) to analyze as well as to create movement based activities. DMP sessions widely incorporate play within movement activities. Two studies have explicitly mentioned the application of theories related to play in general (Chiang, Chu & Lee, 2016) and specifically; Athanasiadou and Karkou (2017) refer to a dramatherapy model called Embodiment-Projection-Role (Jennings, 1999). Overall, person-centred and developmental approaches with suffuse and overlap of social engagement, intersubjectivity theories and play theories were found to be most prevailing in DMP intervention for children with ASD.

Techniques: The focus here was on what practically happened during DMP sessions. The studies have consistently mentioned mirroring as one of the basic techniques. Many different terms referring to similar concepts have been used across these studies as a way of improving interaction: attunement; understanding, reflecting, imitation, expanding non-verbal expressions leading to attuned improvisations, affective synchrony,

movement synchrony, movement coordination, relational knowing, shared movement, reciprocal responsiveness/interaction and many more. In some instances, these terms have been used synonymously while some authors have distinguished between them. Wengrower's (2010) study investigated the difference between imitation and mirroring and found that the major difference between the two was in the quality of interaction. Unlike imitation, Wengrower (2010) argued that mirroring involves the therapist making similar (and not identical) body movements reflecting the essence of the movement of the client which are either coordinated in time or with a slight echo (Fitzpatrick, 2018). The assumption is that the moving partners experience in their own body the qualities of each other's movements to experience motor resonance and perceive better emotional understanding of each other leading to somatic relationship by connecting with attunement. In the past, the term attunement has been described as a component of mirroring that often goes beyond empathy and can be seen as a product of mirroring (Erskine & Trautmann, 1997; Trevarthen & Fresquez, 2015). The process of attunement is reported to have two levels (Jerak, Vidrih & Zvelc, 2018). At first, the moving partners are fully aware of the other person's sensations, needs, or feelings and the next step is the communication of that awareness (Jerak, Vidrih & Zvelc, 2018). Tortora (2010) identifies three subcategories in mirroring: modified mirroring, mirroring exaggerated, and mirroring diminished. In addition, misattunement, disruptions and purposeful misattunement have also been reported as part of the process and occasionally as useful techniques for regulating and introducing new movement vocabulary to children with ASD (Houghton & Beebe, 2016; Athanasiadou & Karkou, 2017).

The next set of most popular techniques as mentioned in all seven studies were related to sensorimotor explorations creatively merged alongside the use of play techniques, rhythm and props. Sensorimotor-based activities (Scharoun et al., 2014) involved open-ended movement explorations and structured games. Importance was given to spontaneous movement interactions and expanding the children's movement vocabulary. In some studies, opportunities were provided for body part identification and awareness through stretching, tapping, movements from martial art, baseball, dodgeball actions, jumping in and out of hoops, obstacle course, making different shapes, start and stop games and many more (Hartshorn et al., 2001; Athanasiadou & Karkou 2017; Devereaux, 2017). All these movement explorations were reported to be used playfully and to be linked to different types of play such as embodied play, symbolic play,

imaginative play, movement and rhythmic play, structured and unstructured play activities across all seven reviewed studies.

In addition, the reviewed studies made several references to the use of props such as hoops, gym mats, tambourines, stickers, elastic bands, many other toys and music have been documented. These props have been used for different purposes such as self-expression, sensory stimulation, sensory integration and relaxation; they were also used as starting points in movement improvisation, as transitional objects and also as concrete ways of connecting. Some of the studies have distinctly reported incorporation of relaxation techniques (Hartshorn et.al., 2001; Athanasiadou & Karkou, 2017; Devereaux 2017) while the rest of the studies have merged relaxation techniques with the use of props and music. Laban movement vocabulary such as body, efforts, shape and space were used along with body orientation, engagement and regulation were reported as important by many authors (Samaritter, 2015; Houghton & Beebe, 2016; Chiang, Chu & Lee 2016; Athanasiadou & Karkou, 2017). Behavioural class management techniques appear to be least popular as only one study has mentioned them as part of the intervention (Hartshorn et.al., 2001).

To sum up, particular attention was given to intuitive and improvisational exploration of movements with mirroring as the key technique in DMP sessions across all the studies.

Overall process: This section explored the DMP intervention programme structures spreading across research projects and the structure within each session. Chiang, Chu and Lee (2016) and Athanasiadou and Karkou (2017) were the only two studies to describe the overall structure. Chiang, Chu and Lee (2016), included ten modules and each module consisted of two sessions targeting various objectives. Athanasiadou and Karkou (2017) described four modules with eight sessions divided unevenly (module 1: one session; module 2: three sessions; module 3 and 4: two each). Houghton and Beebe (2016) reported that the intervention consisted of twenty sessions. However, further description of the course was not offered.

With regards to the structure of each session, Devereaux (2017), Athanasiadou and Karkou (2017), Samaritter (2015) and Hartshorn et al. (2001) had similar session structures. The sessions began with a warm-up, moved to theme development and/or structured/unstructured play activities and closed with cooldown activities. Unlike these four studies, the session structure in Chiang, Chu and Lee (2016), Houghton and Beebe

(2016) studies appeared different. Chiang, Chu and Lee (2016) showed traces of a behaviourist approach where each session consisted of reviewing the dyad homework film-taped by the parent, followed by effective caregiver-child interaction with guided practice, demonstration, modelling and feedback. The one-to-one session described by Houghton and Beebe (2016) was completely unstructured. The session began with child-directed movements usually leading to mirroring and improvisational exploration. Wengrower's (2010) study did not mention anything about the session structure.

Dosage: As shown in Table 4.3, three studies involved individual therapy sessions while three studies held group therapy sessions, all delivered by qualified dance movement therapists. Teaching assistant and care givers were also involved when groups were large (Hartshorn et al., 2001) and licenced psychologists were involved in the Taiwanese study (Chiang, Chu & Lee, 2016). In the latter study (Chiang, Chu and Lee 2016) there was also parental involvement with parents receiving training in caregiver-child interaction. The number of participants in a group session varied from three to eight with an average of five children per group. Studies with group therapy were delivered over one and a half to two months and sessions ranged from 30 minutes (Hartshorn et.al., 2001; Houghton & Beebe, 2016; Devereaux, 2017) to 60 minutes (Chiang, Chu & Lee, 2016). Sessions were delivered once or twice a week totalling between 8 (Athanasiadou & Karkou, 2017) to 20 sessions (Chiang, Chu & Lee, 2016) as shown in Table 4.3. There was lack of clarity on the dose and intensity of the therapy in the studies where the focus was on specific sections of the process of therapy against the outcome (Wengrower, 2010; Houghton & Beebe, 2016). Moreover, there was no clear trend or pattern that was noted to indicate the relationship between length of therapy and the benefits gained by the client group. In general, DMP dosage was not always theoretically grounded or in accordance with the aims of the intervention. Rather it appeared to be driven by logistics and availability of funding.

4.1.3 Qualitative research question 2- Data-collection methods and findings

This section synthesized information on how data were gathered and the results that were reported in the studies.

Data-collection methods: Qualitative, quantitative and artistic enquiry research methodology studies were considered. As shown in Table 4.4, video recording methods were used by the majority of the reviewed studies as it enabled particular sections of the session to be reviewed at a later point. For instance, Houghton and Beebe (2016) carried out a video micro analysis in real-time and in slow-motion to develop an extensive narration of the video clip, exploring key changes of the interpersonal movement sequences. Samaritter (2015) also used a retrospective video analysis where movement markers of interpersonal relating were coded based on Laban Movement Analysis (LMA) using ELAN software to develop an observation scale. In the only study with artistic inquiry as a research methodology, somatic responses and written reflections were complemented with video recordings of the sessions (Athanasiadou and Karkou 2017). The next popular approach after video recordings in these studies was collecting narratives and therapists' diaries. (Wengrower, 2010; Houghton & Beebe, 2016; Athanasiadou & Karkou, 2017). Semi-structured interviews of the parents and educators have also been utilised in the qualitative studies included in this review (Devereaux, 2017).

Table 4. 4 Methods, analysis and key findings

Author	Methodological approach	Methods of data collection	Analysis	Findings			
				Social and communication	Emotional	Physical and Sensory	Cognitive
Athanasiadou and Karkou (2017)	Artistic Inquiry	<ul style="list-style-type: none"> • Video Recordings • Somatic responses (including drawings of a body figure, and written and video recordings) • Written reflections 	<ul style="list-style-type: none"> • Thematic analysis • Dialoguing 	<ul style="list-style-type: none"> • Proximity with the group • Awareness of personal boundaries • Channelling energy • Entering the group relationships • Experiencing social dynamics and different levels of communication • Increased expressive and receptive verbal vocabulary 	<ul style="list-style-type: none"> • Self-Regulation • Stronger sense of ‘Self’ • Empathy 	<ul style="list-style-type: none"> • Reduction in stereotypical behaviours • Expansion in movement repertoire facilitating to differentiate oneself from the other object 	-----
Devereaux (2017)	Qualitative	<ul style="list-style-type: none"> • Person to person Semi-Structured Interviews 	<ul style="list-style-type: none"> • Thematic Analysis 	<ul style="list-style-type: none"> • Building awareness of both self and others • Unify the students as a group • Building connection with self and others 	<ul style="list-style-type: none"> • Improves regulatory behaviour • More relaxed and calm, • Soothing experiences • Use better coping process • Modify intensity of emotional reactions • More tolerant, more able to accept demands 	<ul style="list-style-type: none"> • Support or inhibit sensory needs • Influence of music choice on energy levels • Influence of props to address sensory needs and as ‘connection tools’ 	<ul style="list-style-type: none"> • Influence ‘on task’ behaviours – capacity to focus, concentrate

Author	Methodological approach	Methods of data collection	Analysis	Findings			
				Social and communication	Emotional	Physical and Sensory	Cognitive
Houghton and Beebe (2016)	Qualitative	<ul style="list-style-type: none"> • Video Microanalysis • Narrative of the first 80 seconds based on real time and slow motion 	<ul style="list-style-type: none"> • Frame by frame analysis • Generate drawings • Description of the selected sample 	<ul style="list-style-type: none"> • New perspective on movement conversation • Micro disruptions of the connections, missed opportunities for connections, critical points in interactions were identified • Disruption and repair were recurrent themes 	----	----	----
Wengrower (2010)	Qualitative	<ul style="list-style-type: none"> • Narratives of three DM therapists as they wrote them in their case study, therapy journals, treatment reports 	<ul style="list-style-type: none"> • Thematic Analysis 	<ul style="list-style-type: none"> • Gaining attention, trust and leaving one's expectations aside • Allows for kinaesthetic empathy • Create a shared playing space • To establish a relationship that implies a sense of mutuality, attraction and interest towards the other • Know the child better • Create a transitional space where play and bonding can evolve 	----	----	----

Author	Methodological approach	Methods of data collection	Analysis	Findings			
				Social and communication	Emotional	Physical and Sensory	Cognitive
Hartshorn, Olds, Field, Delage, Cullen and Escalona (2001)	Quantitative	<ul style="list-style-type: none"> • Video recording • Behaviours were coded and observed during the first and last movement sessions. 	<ul style="list-style-type: none"> • MANOVA- first and last sessions as the repeated measure. • Univariate ANOVAs on the individual behaviours. 	<ul style="list-style-type: none"> • Better Eye Contact- No Significant Difference • Social-Relatedness toward teacher- No Significant Difference • Less time resisting the teacher - Significant difference $F_{2,73} = 5.13, p < 0.01$ 	----	<ul style="list-style-type: none"> • Negatively responding to touch- Significant difference $F_{2,73} = 6.18, p < 0.005$ • Stereotypical behaviours- No Significant Difference 	<ul style="list-style-type: none"> • Increased on-task passive behaviour- Significant difference $F_{2,73} = 4.27, p < 0.05$. • On-task active behaviour- No Significant Difference • Reduction in wandering- Significant difference $F_{2,73} = 3.21; p < 0.05$
				Socio-Cognitive			
Chu and Lee (2016)	Quantitative	<ul style="list-style-type: none"> • Pre- and post-intervention and 3month follow-up • Semi-structured observations • Parent interview • Battery of child development assessments 	One-way analysis of covariance (ANCOVA)	Joint Attention and Joint Engagement Variables <ul style="list-style-type: none"> • Unengaged/other engagement state • Supported Joint Engagement–child initiated • Coordinated Joint Engagement-child initiated 	Pre-Post (Experimental v/s Control) <p>No significant difference for all three variables</p>	3 Months Follow up (Experimental v/s Control) <ul style="list-style-type: none"> • Significant difference ($F_{1, 31} = 5.84, p < 0.05$, partial $\eta^2 = 0.16$). • Significant difference ($F_{1, 31} = 4.49, p < 0.05$, partial $\eta^2 = 0.13$). • Significant difference ($F_{1, 31} = 4.47, p < 0.05$, partial $\eta^2 = 0.13$) 	

		<ul style="list-style-type: none"> • 15 minutes videotaped parent child interaction 	Mann–Whitney <i>U</i> test	<ul style="list-style-type: none"> • Supported Joint Engagement-parent initiated • Coordinated Joint Engagement–parent initiated • Joint Attention (Alternate gaze, showing) 	No significant difference for all three variables	No significant difference for all three variables
Author	Methodological approach	Methods of data collection	Analysis	Findings		
				Social and communication		
Samaritter (2015)	Mixed	Study 1) Retrospective movement annotation and analysis of video vignettes of interpersonal relating in dyadic DMP	<ul style="list-style-type: none"> • Laban Movement Analysis (LMA) and ELAN annotation software for movement coding • Friedman test • Wilcoxon’s Signed-Rank 	<ul style="list-style-type: none"> • Development of Social Engagement and Attunement Movement (SEAM) scale, with overarching themes (space, time, weight) and specific movement categories • Individual profiles of all four cases showed an increase within SEAM categories and an overall increase of the number of SEAM markers that could be recognized in the interpersonal movement actions. • Differences among repeated measures of the group average SEAM scores over time rendered Chi-square value $\chi^2 = 7.95$, which was significant, $p = 0.0028$. • Median scores of the group averages on the SEAM observation scale at the end of therapy were significantly higher than the median scores in the beginning of therapy $Z = -2.527$ and a p-value $p = .012$ 		
		Study 2) Contents analysis of the therapist’s actions	<ul style="list-style-type: none"> • The ELAN annotation Software for open coding and labelling video- 	<ul style="list-style-type: none"> • Four basic themes were identified for structuring DMP sessions for ASD and illustrated with examples <ul style="list-style-type: none"> a. Procedural structure of the therapy process 		

			material from clinical dyadic DMP	<ul style="list-style-type: none"> b. Structure of the sessions c. Relational modes d. Movement actions
		Study 3) Replication of Shared Movement Approach (SMA) intervention and outcome evaluation with SEAM scale	<p>Pre – post intervention analysis for questionnaires</p> <ul style="list-style-type: none"> b) Child Behaviour checklist (CBCL) c) Social Responsiveness Scale (SRS) d) Youth self-report (YSR) 	<ul style="list-style-type: none"> • Average Pre -Post Intervention outcomes for group of four showed a positive trend over all questionnaires. The gain factors (subtraction of Post- Pre therapy results) are given below <ul style="list-style-type: none"> a. YSR somatic =5.5 b. YSR social = 2.25 c. CBCL somatic =4 d. CBCL social = 4.75 e. SRS = 2
Author	Methodological approach	Methods of data collection	Analysis	Findings
				Social and communication
Samaritter (2015)			Friedman test	<ul style="list-style-type: none"> • Evaluation of the difference in the mean SEAM scores of four participants over time showed significant difference in all three SEAM categories (Chi square $\chi^2 = 16.893$, $p=0.0047^*$) <ul style="list-style-type: none"> a. Spatial categories over time Chi square $\chi^2 = 11.393$ $p = 0.044^*$. b. Weight categories over time Chi square $\chi^2 = 14.250$, $p=0.014$ c. Synchronisation categories over time Chi square $\chi^2 = 11,536$, $p=0.042$
			Wilcoxon Signed Rank test	<ul style="list-style-type: none"> • Median post treatment scores of the group averages on the social questionnaires were with $Z = -3.063$ and $p=0.002$ significantly lower than the scores of the pre-treatment. • Median post treatment scores of the group averages on the SEAM observation scale were with $Z = -2.524$ and $p=0.012$ significantly higher than the scores pre-treatment.
			Interrater agreement- Cohen's kappa	<ul style="list-style-type: none"> • Good interrater agreement with $k = 0.72$ over all SEAM categories. • The results for kappa on the individual categories showed balanced levels of agreement.

	Methodological approach	Methods of data collection	Analysis	Findings			
				Social and communication	Emotional	Physical and sensory	Cognitive
Summary	Arts- Based-1 Qualitative-3 Quantitative-2 Mixed-1(3),	<ul style="list-style-type: none"> Observing video recordings of the sessions is the most common method- 5 studies, followed by semi-structured interviews and questionnaires -2 studies 	<ul style="list-style-type: none"> Retrospective movement analysis for video recordings Thematic analysis for qualitative Statistical analysis for quantitative 	<ul style="list-style-type: none"> Most frequently addressed parameter. Improvement in <ul style="list-style-type: none"> Group connections Relationship with the therapist Awareness of self and others 	Improvement in <ul style="list-style-type: none"> Emotional regulation Coping mechanisms 	<ul style="list-style-type: none"> Decrement in repetitive movements Props, music and movements support or inhibit sensory needs 	<ul style="list-style-type: none"> Improvement in on task behaviours Improvement only during 3 months follow up in joint attention and engagement variables

Quantitative studies have relied upon movement or behavioural observations by trained movement observers with parameters such as duration and frequency of occurrence of target movements or behaviours; these observations produced numerical data (Hartshorn et.al., 2001; Chiang, Chu & Lee, 2016). Standardized questionnaires and test batteries were employed in two studies. Chiang, Chu and Lee (2016) study used tools such as Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 1994), The Autism Diagnostic Observation Schedule (ADOS; Lord, 2001), The Autism Diagnostic Interview-Revised (ADI-R; Rutter, Lecouter & Lord, 2003), Developmental Quotient and The Mullen Scales of Early Learning (MSEL; Mullen, 1995) to recruit the participants. For the actual data collection MSEL, sections of Early Social Communication Scales (ESCS) (Mundy, 2003) related to initiating joint attention, Reynell Developmental Language Scales (Reynell, 1990), structured play assessment and parent-child interaction tools were also used. Samaritter (2015) has used several instruments to assess the social behaviours outside the therapy context and to compare the results with the results of the observation scale she developed (SEAM): two parental questionnaires on social behaviour, the Child Behaviour Check List (Achenbach et al. 2008) and the Social Responsiveness Scale (Roeyers & Thys , 2010), as well as one self-report scale on social behaviour, the Youth Self Report (Achenbach et al., 2008). Samaritter (2015) was the only study to use self-reporting method as she had adolescent participants (Samaritter, 2015).

No tool was used more than once and hence the quantitative results were not suitable for meta-analysis. Overall, the preferred methods of data collection were through video observations and semi-structured interviews from clinicians, parents or educators' perspectives.

The reviewed studies addressed the contribution of DMP for children with ASD. Outcomes were grouped under the following domains based on literature themes:

- Social and communication: skills used to interact, both verbally and non-verbally to communicate messages, thoughts and feelings with others.
- Emotional: skills necessary for bonding, self-regulatory behaviour, displaying emotions, empathy and to cope with challenges.
- Cognitive: combination of several critical brain functions related to memory, judgment, intuition, attention, concentration, ability to learn and process information.

- Physical and sensory: abilities related to the whole body in terms of endurance, stamina, flexibility, speed, coordination, balance, sensory inputs and integration.

Social and communication: Six out of seven studies mentioned the effects of DMP on improving different social skills. Positive impact on awareness of personal boundaries, relationship with the therapist, entering group relationship, understanding of social dynamics and social relatedness were noted in many studies (Samaritter, 2015; Houghton & Beebe, 2016; Athanasiadou & Karkou, 2017; Devereaux, 2017). Significant improvement in Social Engagement and Attunement Movement (SEAM) observation scale and scores obtained on a social questionnaire administered pre-post therapy in Samaritter (2015) thesis. The measurement of social behaviours through questionnaires and self-report indicated that improvement was not limited just to the therapeutic setting; instead the participants were able to generalise it to their real life as well.

All qualitative and arts-based studies reported progress in overall communication (verbal and non-verbal). As non-verbal communication is predominantly used in DMP sessions, therapists have observed improvement in expressive and receptive oral vocabulary (Houghton & Beebe 2016; Athanasiadou & Karkou, 2017). It was cited that DMP provided opportunities for an increase in movement vocabulary (Samaritter, 2015; Athanasiadou & Karkou, 2017). In turn it provided scope for experiencing group dynamics and different levels of communication (Athanasiadou & Karkou, 2017). Case studies have reported that the children who did not show communicative intent in the beginning of the therapy improved to such a level where they initiated conversation by greeting the therapist (Houghton & Beebe, 2016). As a whole, qualitative, quantitative and arts-based studies suggest that DMP can play a significant role in improving different aspects under the social domain in children with ASD.

Emotional: Parents, educators and therapists have noted progress in emotional regulation (Athanasiadou & Karkou, 2017; Devereaux, 2017). Children improved in their ability to modify their emotional reactions. The coping mechanisms were enhanced as they had better control over their movements to increase or decrease the intensity of the movement. It was evident that there was improvement in awareness (self and others). It has also been reported that participants presented a better mood for the rest of the day after sessions (Athanasiadou & Karkou, 2017; Devereaux 2017).

Cognitive: Studies report that the participants improved in attention, concentration, on task passive behaviour and also on transition from one activity to another (Hartshorn et al., 2001; Devereaux, 2017). Statistical tests in Hartshorn, et al.'s (2001) study revealed

a reduction in the time that the children wandered in the room, showing that they had developed better abilities to focus. On task active behaviour and joint attention did not show any significant enhancement after therapy. In Chiang, Chu and Lee's (2016) study, the different types of joint engagement (JE) states between parent and child were studied. Improvements were seen only at the three months follow up stage in unengaged JE, child initiated supported JE and child initiated co-ordinated JE. No statistically significant difference was seen in parent initiated JE states at post treatment and follow up assessments. Only in Devereaux's (2017) study academic engagement has been reported. The teachers interviewed in this study reported that the DMP sessions facilitated transition into academic activities. It was also reported that children performed better in class after the session as their energy had been channelled. This helped them to sit and focus during the lessons.

Physical and sensory: Qualitative and arts-based studies (Athanasiadou & Karkou, 2017; Devereaux, 2017) described reductions in the self-stimulatory and stereotypical behaviours. The children appeared more relaxed and calmer. However, Hartshorn, et al.'s (2001) study did not find any statistically significant reduction in stereotypical behaviours.

In summary, various tools have been used to examine the contribution of DMP for children with ASD. Most frequently occurring outcomes fell under the social domain followed by cognitive, emotional and physical. There was only one study which mentioned academic engagement which again overlaps with cognitive, physical and sensory domains.

4.2 Results of quality assessment

The methodological quality of the two quantitative quasi-experimental studies (Hartshorn et al., 2001; Chiang, Chu & Lee, 2016) were appraised using the Cochrane risk of bias (Higgins et al., 2016). As the two studies adopted quasi-experimental designs, using age and level matched controlled groups and statistical testing of variables, they were categorised as intermediate level of evidence. These two studies were also assessed to have high risk of bias because selection for the experimental group lacked randomisation. Hartshorn et al.'s (2001) study, in particular, did have an element of randomisation in the distribution of the video samples for behavioural observation and analysis. However, this could not reduce the risk of bias as the group division was in line with the prevalent

culture in a clinical setting that prioritizes client choice, availability and convenience to attend therapy. Additionally, it was not possible to judge the risk of bias as there was insufficient information reported within the studies on detection bias and attrition bias. Whilst as for all types of psychotherapy, it is difficult to blind participants to the type of intervention, it appeared that in these two studies there were opportunities to blind for the outcome assessment. Hartshorn et al.'s (2001) study mentions that psychology graduate students rated the video. However, the description did not mention if they were blinded on the group information. Similarly, in Chiang et al.'s (2016) study, it is unclear if the clinicians administering the interviews and tests were aware of whether the participants were allocated to the control or the experimental group. This study introduced blinding while testing the fidelity of the interventionist to the treatment protocol; but there was incomplete information and reporting of the findings from other assessment tools used in the study. In brief, it is very evident from the figures 4.2 and 4.3 with red alert marks that the studies are highly biased.

The quantitative sections of the mixed-methods doctoral thesis (Samaritter, 2015) carried out assessments pre and post intervention on four participants; a control group was not available. Hence, this was categorised under low level evidence. Since the study did not follow a randomised controlled trial design, the Cochrane risk of bias (Higgins et al., 2016) was not regarded as an appropriate tool to assess its quality.

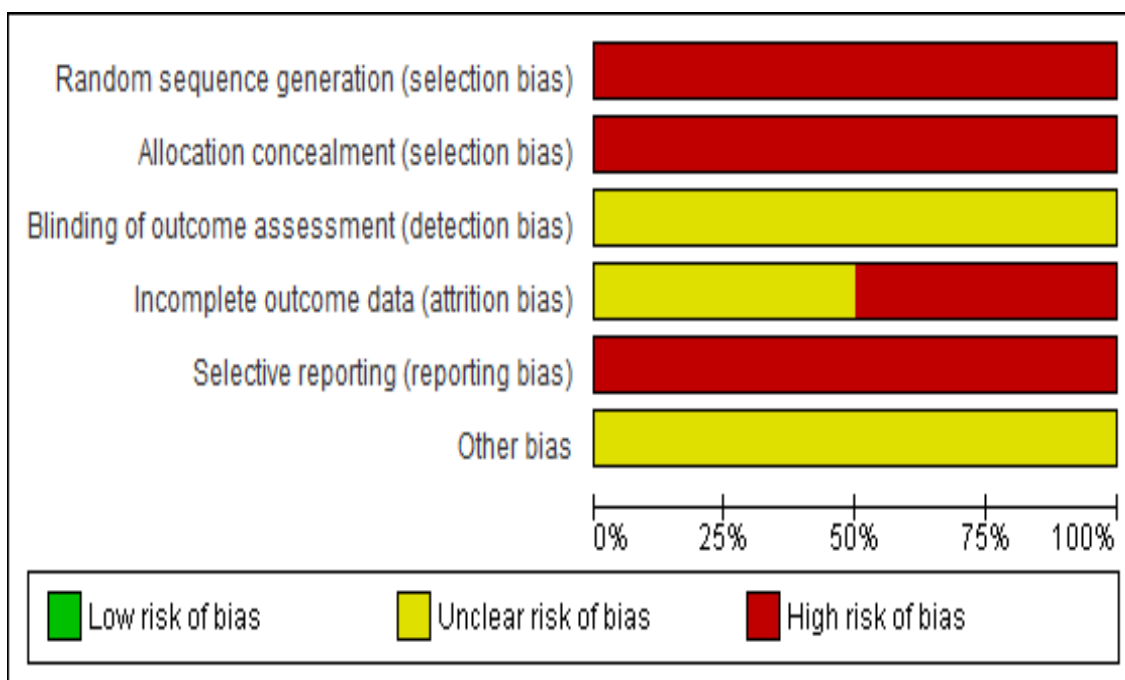


Figure 4. 2 Risk of bias summary: review authors' judgement about risk of bias items for both (quantitative) included studies

Table 4. 5 Grading for trustworthiness of studies (adopted from Cooke et al., 2010)

Athanasiadou and Karkou (2017)	A/B (The study credibility, transferability, dependability and confirmability are high as ‘triangulation’ was done.
Devereaux (2017)	A (The study credibility, transferability, dependability and confirmability are high as ‘triangulation’ was done.
Houghton and Beebe (2016)	C (Some flaws that may affect the credibility, transferability, dependability and/or confirmability of the study)
Samaritter (2015)	B (Some flaws, unlikely to affect the credibility, transferability, dependability and/or confirmability of the study)
Wengrower (2010)	C/D (Significant flaws that are very likely to affect the credibility, transferability, dependability and/or confirmability)

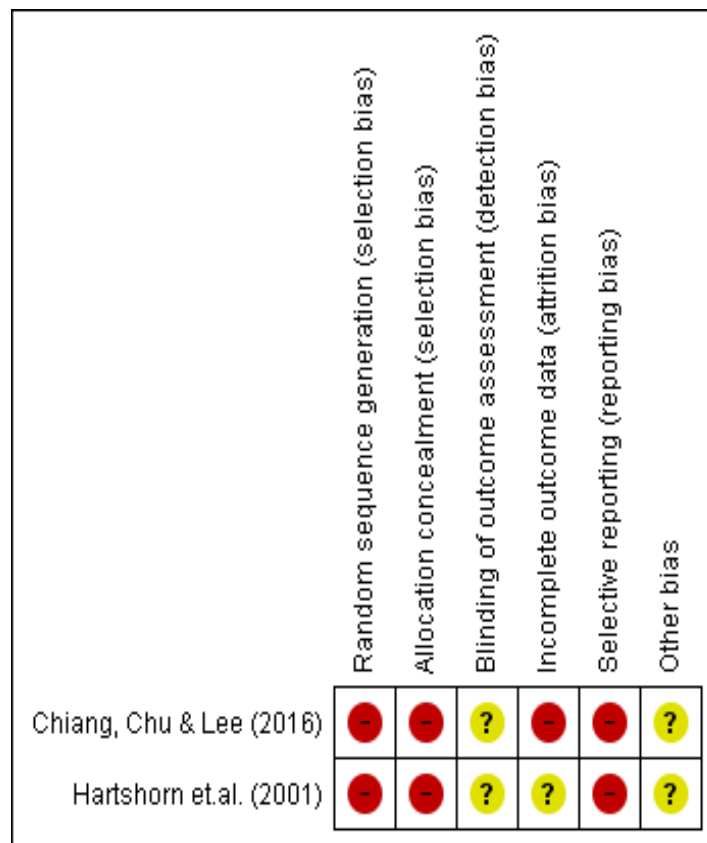


Figure 4. 3 Risk of bias graph: review authors’ judgements about risk of bias items for both (quantitative) included studies.

With regards to the qualitative and arts-based studies, the gradings looked at trustworthiness (adopted from Cooke et al., 2010). The quality appraisal for these studies is shown in Table 5. Devereaux (2017), Athanasiadou and Karkou (2017), conducted a credible study since the findings were grounded on clearly described methods. They cross-checked different types of data collected by employing triangulation for the interpretation of the results. Hence, that study received a high rating. However, in other studies such as Samaritter (2015), Houghton and Beebe (2016) and Wengrower (2010), as a result of insufficient reporting of children's demographic characteristics and contextual background information, it was unclear whether these findings could be transferable. The dependability and confirmability were rated as high for Athanasiadou and Karkou (2017), Devereaux (2017), Samaritter (2015) because the methodology was clear and adequately documented.

4.3 Discussion of the systematic review findings

This review gathered clinical procedures and research findings from seven studies on DMP with children with ASD involving a total of 142 participants. The number of studies included remained small with heterogeneous outcome measures and compromised quality. There were no RCTs found during the literature search and only seven studies met the relaxed criteria for inclusion. It is frequently argued in DMP that RCTs alone cannot capture therapeutic processes as the creative arts therapies emphasize creativity and subjective ways of knowing (Junge & Linesch, 1993). However, there was only one study with artistic inquiry (Athanasiadou & Karkou, 2017) which met the inclusion criteria. The small number of studies meeting the inclusion criteria reflects the dearth of research work in the field.

The synthesis of data relating to the first qualitative research question (how do dance movement psychotherapists work with children with ASD?) revealed that humanistic and developmental approaches delivered through semi-structured sessions using play-based sensorimotor activities and mirroring techniques are the most common ways of working with children with ASD. These approaches are in agreement with Nind (1999) who supported the need for interventions with minimal instructions or teacher direction, and more dependent on intuitive responses. The approaches and techniques are on a par with case reports, documentaries and reports by pioneers in DMP such as Adler (1968), Erfer (1995), Kalish (1976), Loman (1995) and Siegel (1973) in propounding the body-informed and non-verbal interpersonal approaches that attempt to meet the children

at the level they are and to facilitate expressive relationship with the environment. Behavioural theories are minimally referred to in DMP which is noteworthy especially given the client population and the prevalence of behavioural thinking in existing literature (Pierce and Cheney, 2017). It is possible that DMP is indeed offering a new approach that complements existing interventions.

There are similarities in the DMP approaches across the age range of ASD population. Marchant et al. (in preparation) in her systematic review on DMP with adults with ASD, synthesized that person-centred approach with techniques such as mirroring, Baum Circles, sensory integration, synchronisation, six-part story making, dyadic leading and following, as well as moving together, breath work and relaxation exercises, props and verbal processing. The differences in the approaches for the younger population with ASD were the use of developmentally appropriate play-based activities alongside other DMP techniques with the focus on joint attention and other cognitive prerequisites for communication. Marchant et.al (in preparation) also reports that the studies she reviewed were predominately structured with the exception of Mateos-Moreno and Atenciadona (2013) and Edwards (2015) who pertained to a semi- or un-structured framework. While in this review, the majority of studies have preferred semi-structured DMP sessions over fully structured or unstructured sessions. It can be deduced that DMP group sessions for children are most likely to be semi-structured for children with ASD and unstructured sessions are feasible while working on one-to-one. Both group and individual sessions appeared to be popular while working with children on the autism spectrum. However, there was no clarity and correlation between the severity of ASD and the type of session nor there was a clear trend between duration, frequency, intensity and progress made by children. It is alarming to DMP researchers to note that only two studies have reported on complete DMP intervention programme structure. Poor research reporting of the sessions has created several gaps in the findings.

In terms of settings, special education settings were the most common settings across the studies. Advantages of conducting studies within special education settings could be that attrition is minimised and there are more opportunities for consistent observations from different perspectives. Similar advantages have been reported in studies involving adults with ASD conducted in education institutions or specialist centres (Marchant et.al., in preparation).

With regards to the second qualitative research question (How do different studies examine the effectiveness and processes involved in DMP interventions? What are their findings?), the search results were in accordance with Vulcan's (2016) claim that the research available in relation to children with ASD often lean towards case studies. Although the studies included in the current systematic review revealed some positive outcomes, these results cannot be generalised since included studies were placed at the lower and intermediate level of evidence with varying methodological quality. The evidence we now have comes from controlled studies without randomization, which shape the evidence at an intermediate level. There were two such studies with different goals and outcomes. This led to high heterogeneity of the results, unconvincing evidence, and exertion in recognising key results. Since the studies did not have consensus in terms of the parameters measured, tools used and the output, there was a risk of *mixing apples and oranges* (Higgins & Green, 2008) leading to meaningless results if meta-analysis was performed. Hence, the outcomes were synthesized and mapped under broader domains, namely social and communication, emotional, cognitive and physical/sensory.

Improving social skill was a major area of interest in the reviewed studies; a substantial amount of evidence reports that DMP is potentially able to enable the development of relationships. This extensive interest stands as per the NICE guidelines (NICE, 2016) that value interventions that address the social-communication core features of ASD. Despite considerable extent of importance given to the core features of ASD in the reviewed articles, some of the claims were not fully substantiated with data. For example, serotonin levels, EEG activity, sensory motor mirroring and many others were proposed as probable reasons for change in social skills without linking them with data and appropriate tools for measurement. Hence, further explorations are required to look at the underlying factors bringing changes in the client group.

Similarly, communication was neither studied exclusively using standardised tools, nor did it stand independently as an objective of the intervention despite the fact that problems in communication are considered as core features of ASD. However, progress made in expressive and receptive communication has been highlighted in qualitative studies; communication appeared to act as a precursor to many other skills (Athanasidou & Karkou, 2017).

NICE guidelines (NICE, 2016) for children with ASD also highlight the importance of managing co-existing emotional issues leading to anxiety and depression in addition to cognitive areas such as increasing joint attention, joint engagement, on-task behaviours through play-based strategies. The findings from the present review on the

role of DMP in improving emotional regulation, awareness and anxiety coping strategies as perceived by parents, educators and therapists are promising. In contrast, findings relating to the development of cognitive skills and physical/sensory outcomes remained inconsistent, calling for further clarification. For instance, on task behaviour and joint attention did not show any significant enhancement after therapy in quantitative studies while qualitative studies did observe progress. In addition, Chiang, Chu and Lee's (2016) study, found improvements stage in unengaged joint engagement, child initiated supported JE and child initiated co-ordinated JE only at three months follow up and not immediately after the intervention. But the reasons for these inconsistencies are not clear.

Similar issues where findings from qualitative and quantitative findings contradicted each other were noticed in other domains as well. For example, improvements from brief moments of eye contact to sustained and meaningful eye contacts with the therapist (Houghton & Beebe, 2016; Athanasiadou & Karkou, 2017) and with the group members (Athanasiadou & Karkou, 2017) have been reported. By contrast, Hartshorn et al.'s (2001) quantitative observation on eye contact does not report statistically significant improvement. This could possibly be because of the nature of assessment and methodology of the research studies. In a natural context, eye contact varies within the content and meaning of the situation. Probably, quantifying the progress in terms of duration of the behaviours or actions sustained may not always reflect as the correct measurement of change. So, gaps in understanding the appropriate dosage, follow up findings and type of assessment tools that are valid and sensitive to pick up changes will need to be addressed for better clarity.

To compare the results of the present review with the other studies on the same topic, not many reviews were found in DMP and there was no review on this topic specifically focusing on children below 16 years. So, the current results were compared with findings of the reviews by Koch et.al (2014) and Scharoun et al. (2014). Koch et.al (2014) studied health-related psychological outcomes of DMP and reported DMP was as effective evidence-based intervention for children and adults with ASD. Similarly, the study by Scharoun et al. (2014) identified the success of DMP interventions in both individual and group settings for people with ASD. Unlike these two reviews, the present study does not share the same amount of confidence that DMP is an effective intervention for this client population due to the high risk of bias of the reviewed studies, extensive variability in methodology, limited and inconsistent usage of valid, standard tools for assessments and dearth of replicable outcomes. However, this study does acknowledge the *potential* in DMP to be an effective intervention for children with ASD.

To sum up the key contributions of DMP, social and emotional domains stand out among different parameters while communication and sensory domains are interwoven with the other domains. Improvements in core issues of ASD and comorbid problems such as making connections, awareness of self and others, emotional regulation, joint engagement, repetitive movements have been frequently reported. There is lack of clarity in the underlying factors that might have brought these changes. Furthermore, these findings are inconclusive due to the small sample sizes of the studies included in the review. Generalising the outcomes to the population is not therefore, possible leading to limited evidence on the contribution of DMP to children with ASD.

4.3.1 Overall completeness and applicability of evidence

This review has gathered information from various sources and considered studies with a wide range of methodologies. It maximized the extraction and facilitated in providing a clear picture on the contribution of DMP for children with ASD. There was no RCT among the studies that survived, and all seven studies included were published in the previous eighteen years from various parts of the globe, mainly the West (USA, UK and Europe). The review has also obtained a detailed picture on DMP techniques used, theoretical frameworks and structure of DMP sessions for children with ASD. Two major limitations of this review relate to the quality of the primary studies included. Quantitative studies Hartshorn et al (2001) and Chiang et al (2016) had many flaws with respect to randomization and also there were threats of the Hawthorn effect ¹²(Payne & Payne, 2004) as the studies did not offer any alternative intervention for the control groups. Two qualitative studies gained good scores on quality assessments and were considered trustworthy (Athanasiadou & Karkou, 2017; Devereaux, 2017). The studies have also not mentioned the attrition rate and dropping out of participants and this might skew the outcomes to some extent in Hartshorn et al's (2001) study. However, lack of clarity in reporting methodological procedures might have affected the trustworthiness of other studies (Hartshorn et al., 2001; Wengrower, 2010; Houghton & Beebe, 2016). There were several differences in the included studies, conceivably confusing outcomes, and thus limiting the generalizability and validity of the findings (Hartshorn et al 2001; Samaritter, 2015; Chiang et al., 2016). Poor reporting of DMP intervention in many studies made it difficult to extract clear patterns and evidence (Hartshorn et al., 2001; Wengrower, 2010;

¹² The Hawthorne effect occurs when the participants alter their responses or modify an aspect of their behaviour in response to their awareness of being observed or evaluated.

Houghton & Beebe, 2016). The studies should have explained important factors such as: intervention characteristics, methodological pitfalls, challenges in the stage of recruitment and implementation of interventions, attrition rates, sufficient correlation between theory and outcomes. Overall, there were issues with quality for the studies reviewed. It is very necessary for the authors to adhere to the reporting guidelines to enhance transparency and the impact of the interventions (Hoffman et al., 2014). Although the findings of this review are inconclusive, they clearly highlight gaps in existing literature which need to be dealt in depth for future developments in research, policy and practice.

4.3.2 Potential bias in the review process

This review has been conducted by the doctoral candidate along with two more researchers one with DMP qualifications and another with play therapy qualification. In the writing up of the review, the rest of the supervisory team was involved who had psychology qualifications. The inclusion of members in the research team from diverse backgrounds intended to reduce bias bringing in different perspectives and expertise.

Some of the limitations of the review were that unpublished studies and research articles in languages other than English were not included due to time and resource restraints. This could have led to a potential risk of bias. Furthermore, a funnel plot analysis designed to check for the existence of publication bias in systematic reviews was not possible due to low number of published studies included (Higgins & Green, 2011). One more issue influencing the external validity of this review could be the PICOS inclusion criteria set to identify studies. The way DMP was defined for the purposed review i.e with a clear psychotherapeutic process and intent has limited the included studies. For example the study by Ramachandran and Seckel (2011:151), which outlined the basis of ‘synchronized DMP to simulate mirror neurons’ was excluded because the authors described a DMP practice that parted from a conventional approach: children with ASD were invited to look into a room of mirrors, all located at varying angles to facilitate numerous allocentric views (Fidalgo & Martin, 2016).

4.4 Summary of the review

The systematic review suggested that DMP can potentially promote various aspects of wellbeing in children with ASD; however, evidence for its effectiveness remained inconclusive. For example, there was a need for studies that used standardised and validated tools for evaluation which were appropriate for the population. The review also suggested that there was no evidence on long-term effects on children's development and sustained benefits short term. Follow-up studies which assessed outcomes after a year, or more, were also needed. Researchers should also consider including economic analyses and acceptability measures as they can provide more realistic picture for practice implications and can connect research with policy, training and advocacy (Uttley et al., 2015). Additional attention needs to be given on setting the inclusion criteria on severity and comorbidity of ASD. Future studies could also consider exploring the relationship between particular approaches of DMP and diverse severity of ASD. Individual v/s group interventions for children with ASD also need to be researched so as to support clinical guidelines that take these issues into account. Overall quality and quantity of studies must grow markedly in this topic to make a substantial shift in what we know so far. Well-designed, detailed studies on the impact of DMP for children with ASD are warranted. Before well designed RCTs are conducted and given the limited explanations of the key therapeutic factors that bring change, attention should be given to further understanding the therapeutic process. It was inferred from the review that qualitative and arts-based research designs that focus on the therapeutic process could be useful with regards to this issue.

CHAPTER FIVE: DEVELOPMENT OF INTERVENTION PROTOCOLS AND FIDELITY ASSESSMENT

This chapter will bridge phase I of the study with phase II. The systematic review findings on other available literature in DMP research and relevant experience were used to develop two evidence-based intervention protocols for children with ASD and their caregivers which were used in phase II. At first, critical thoughts on the need for the development of intervention protocols are discussed considering arguments relating to evidence-based practice (EBP) in mental health care and critique on manualised interventions from a clinical practice perspective. Next, comprehensive explanations of the process of developing DMP protocols for children with ASD and their caregivers are given. Drawing upon earlier studies, there are descriptions of key principles, techniques and session structures. Later on, an overview of the practical aspects of the implementation of the protocols are described. The last section is dedicated to the report of methods, findings and discussion of the fidelity assessment of the protocols.

5.1 A critique on the need for intervention protocols

Drawing upon some of the key inferences from the review, a foundation was laid for the development of intervention protocols. The American Psychological Association (APA) has recognized over 350 treatment manuals (Department of Health & Human Services, United States [HSS], 2015; Kazdin, 2015). The National Institute for Health and Care Excellence in the UK has also been promoting manualised interventions as an influential institution to enhance impacts of clinical practice and mental health care policy (Norcross, Beutler & Levant, 2005; NICE, 2011). However, clinical practitioners have claimed that such standardized approaches might limit the possibilities and make it unreasonable to act on the individual characteristics of different clients (Garfield, 1996; Marshall, 2009; Hucker & McCabe, 2012; Forbat, Black & Dulgar, 2014). This longstanding tension between manualised and non-manualised intervention is no different in creative arts therapies where intuitive and open-ended psychotherapeutic practices are celebrated. In DMP, manualised approaches are very recent developments and have evolved as a way to secure the application of effective research with client groups such as schizophrenia (Papadopoulos & Röhrich 2014; Martin et al., 2016; Bryl & Goodill, 2019), depression (Pylvänäinen, Muotka & Lappalainen, 2015) and adults with ASD (Hildebrandt, Koch & Fuchs, 2016). In 2018, Truijens et al. conducted a systematic review to investigate the value of manualised psychotherapy and found that, empirically, there was not enough

evidence to support that manualised interventions were more effective than non-manualized approaches. This captures the idea that it is not the presence or absence of manualisation that matter for more effective interventions. However manualised intervention protocols are vital for replication and dissemination. Hence, to balance arguments for and against manualisation, the protocols in this study were constructed in such a way that they would lay out only the principles, objectives and generic principles of the intervention. Activities, tasks and techniques were not manualised to allow the therapist to respond with flexibility to the needs of each group (Rolvsjord, Gold & Stige, 2005). It was assumed that this would allow the therapist to balance structure with personal experience and to creatively and intuitively tailor the sessions to meet the needs of the group and the individuals within these groups (Rolvsjord, Gold & Stige, 2005). This makes way for the protocol to be closely linked to clinical practice.

5.2 Intervention protocol for children

The process of the development of this intervention protocol was layered in several stages comparing the therapeutic process to the movement of the see-saw to get to a balanced state of wellbeing. This was in accordance with the definitions of wellbeing presented by Dodge et.al., (2012) where wellbeing is viewed as the balance point between an individual's resource pool and the challenges faced. As shown in Figure 5.1, at first, the combination of theoretical foundations, synthesised findings of the systematic review and clinical experience of the therapist led to the development of the intervention protocol. This was implemented in the current study as a pilot intervention with five clusters of children with ASD in two different locations. Next, the video footage of sessions 3, 6 and 9 delivered across all five clusters were reviewed by the researcher, the therapist and an external expert to assess the adherence or fidelity of the sessions with the protocol. The outcome of the fidelity assessment was then fed forward to the protocol for refinement and future implications in a larger RCT. All these stages are described in detail in the following sections.

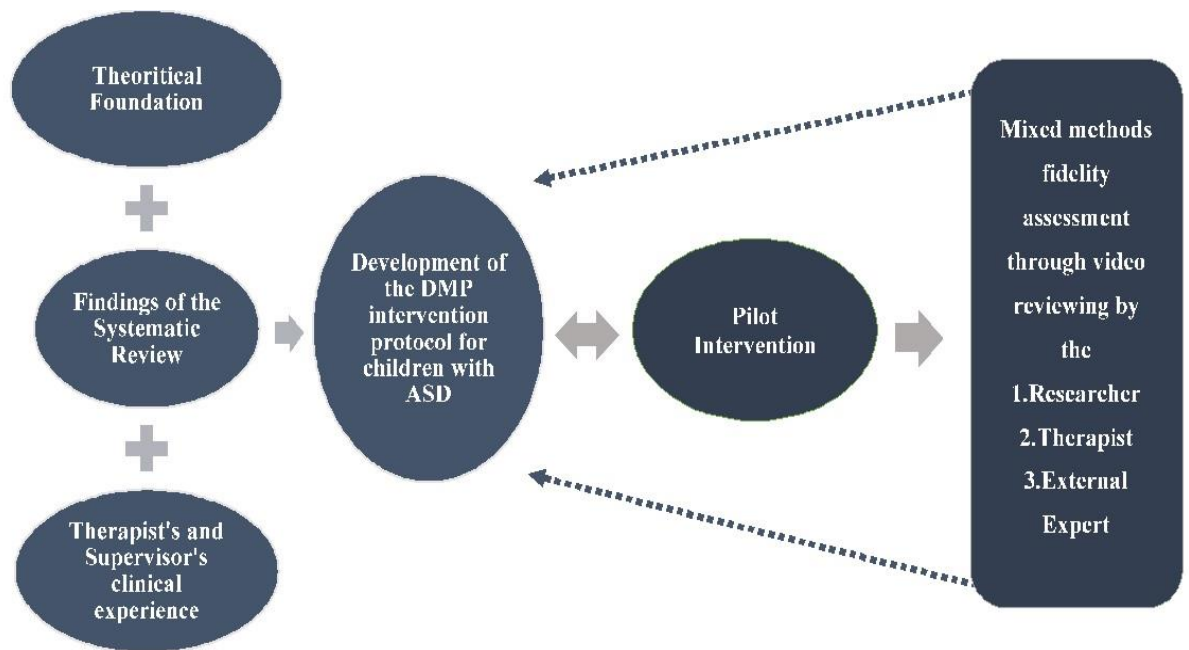


Figure 5. 1 Development of intervention protocol for children.

5.2.1 Therapeutic principles

The protocol consisted of eight principles (shown in Figure 5.1) which guided the process of the DMP intervention. Some of the principles were generic to a psychotherapeutic process and some of were customized specifically considering the nature of the client population of this study.

1. Focusing on therapeutic relationships: The therapeutic relationship is regarded as one of the key factors for therapeutic change. Emphasis here is on the internal, dyadic and group level exchanges of information and meaning (verbally and non-verbally) between the client and the therapist in relation to the group (Karkou & Sanderson, 2006). The therapist was encouraged to be present fully in the here-and-now of the interaction and the 'real' or 'I-you' relationship (Clarkson, 1994; Karkou & Sanderson, 2006: 64). Along with the psychotherapeutic view in the relationship, we acknowledged the active engagement with the arts in a 'triangular relationship' and celebrated the presence of the arts as a medium among the participants and the therapist (Karkou & Sanderson, 2006: 65).
2. Approaching participants with warmth: This was greatly influenced by the humanistic trend in DMP. The therapist was encouraged to support the development of the participants with warmth and enthusiasm. This stood as the bottom-line attitude during the interaction.

3. Adopting an empathetic attitude: The participants were approached compassionately. The bodily attitude for the experience of empathy was viewed from a sensory perspective by giving importance to kinaesthetic perceptions of increased warmth and deeper breathing. As human beings we may never fully know the other's emotions (Stein, 1989; Parviainen, 2002; Stein, 2002; Ylönen, 2004). However, it was presumed that the therapist's perceptions and awareness of these sensations would enable her to get to know the participants and share their feelings. This did not mean that the therapist would get to know more about the lives of participants than they do themselves (Casey, 1987; Parviainen, 1998, 1999). From a post-modern view, the stance of not knowing was also appreciated (Anderson & Goolishian, 1992; Heikinheimo & Tasola, 2004; Malinen, 2004).
4. Working with participants from where they are: The aim was to find and share some common ground and working alliance between the participant and the therapist with the best interest of the participants. The approach was to 'meet' the participants at their level and mutually accepting equal power. To empower the participants and increase the value of the intervention, children were encouraged to make choices and intervene or even reject the therapist's suggestions and/or artistic inputs.
5. Working with existing strengths: This principle stood by the idea that every child has an inbuilt or innate spectrum of abilities and prevailing strengths. The preoccupation with the human potential encouraged the non-directive nature of DMP. As stated in the three studies included in the systematic review (Wengrower, 2010; Samaritter, 2015; Houghton & Beebe, 2016), the therapist was invited to initiate the movements following the child's lead in the movement patterns and resonate with the interests and energy levels.
6. Considering attachment patterns: The systematic review observed that theories of attachment were considered to view the dyadic system of communication (Beebe & Stern, 1977). Hence, in this protocol, the therapist responded sensitively to provide a secure base (Bowlby, 1988) and a 'holding environment' (Winnicott, 1960: 589) from which the children could explore the world. As emphasised by Ainsworth (1967) importance was given to the timing within which the therapist responded promptly and appropriately.

7. Supporting sensory motor development: Relevance of developmental models such as Developmental Individual difference Relationship-based model (DIR) (Greenspan & Wieder, 2006) and Sherborne Developmental Movement (Sherborne, 2001) were noted in the systematic review. These developmental approaches encouraged the therapist to determine movements, to engage with sensorimotor explorations, to support sensory integration, achieve regulation and encourage children's development of a wide range of emotional, social and communicative skills appropriate to the stages of development and age (Ayles, 2005).
8. Focusing on enhancing social skills: The most common trend prevalent within six out of seven studies was the allusion to theories focusing on social engagement and interpersonal relationships. Achieving shared understanding, relating one situation to another, a broad range of social roles and relationships, interaction between individuals and their environments from social cognition, and social neuroscience were considered.

5.2.2 Intervention structure

The intervention lasted for ten sessions divided across four modules with a frequency of two sessions of 40 minutes every week. The systematic review revealed that the studies delivered the sessions once or twice a week totalling between eight (Athanasiadou & Karkou, 2017) to 20 sessions (Chiang et al., 2016). Considering the schedule of the SEN schools, resources, and time restrictions to complete this doctoral study, ten sessions fitted well within one term. The themes for the sessions, objectives and progression order of the modules were set out as shown in Figure 5.2. Movement play activities were assembled mostly on sensory motor activities, using tools and items to explore and sense the environment in the body's space and time (Ayling, 2012). The broad features of the therapy package ranged widely from individual work to group work with gradual transition using dyadic work. Much attention was paid to the development of different types of play and use of sensory inputs-based props. Session objectives ranged from identifying their strengths to working on embodied movement experience of role playing.

Module one comprised of two sessions (Introduction and Exploring the Space). The sessions were designed with an intention to introduce ourselves, convey the safety and ground rules using pictures and simple movements or words. Making choices and experience agency for their presence and participation, activities to mark off the sessions,

opening and closing rituals were introduced. Participants were familiarised with the camera and the space by the creation of a warm and secure therapeutic environment. At this stage children were encouraged to move in embodied solitary and parallel play (Parten, 1932). These physical experiences were aimed to support the development of the body-self to enhance the formation of body-image. The activities created opportunities for the children to be able to 'live' in their bodies and to feel confident about moving in space. These objectives aligned with the first five principles and were maintained throughout. The objectives and overall structure of the intervention were described in only two studies included in the systematic review (Chiang et al., 2016; Athanasiadou & Karkou, 2017). This first module consisting of two sessions in the current protocol is similar to the concept of Athanasiadou and Karkou's (2017) first session.

Module two consisted of three sessions. These three sessions were all about exploring different ways of moving individually and identifying personal strengths. Attention was more on *what part of the body is moving (body awareness)?* and *where is the body moving (spatial awareness)?* Gradually the children were introduced to moving in their personal space with a range of props of their choice. Moving with an object was preparation for moving in relation to a person. In the next stage, children were invited to work in pairs. Partners were chosen playfully in random and they were invited to share a prop while mirroring each other. The studies reviewed emphasised mirroring as one of the basic techniques used in DMP for children with ASD, and this technique was used across these sessions extensively. The emphasis was on *in what interactive context is the person moving (relationships)?* In this stage children moved from exploratory play where things are tried out and tested, to more patterned and organised play with objects, and then to dramatized, projective and associative play (Parten, 1932; Jennings, 1998). These sessions were built as a progressive system starting from the senses and moving up towards interaction. These stages were intended to make the participants mindful and aware of their own body first and then eventually their attention was drawn to external objects and finally to a person. These objectives were chosen in this order considering the stereotypical characteristics of children with ASD and the Sherborne Developmental Movement (SDM) method developed from the work of Veronica Sherborne (Weston, 2012). Each session brought variations in movement qualities and provided opportunities for creative expression. All the sessions contained the experiences of all the main elements of SDM. However, the degree and intensity to which the attention was given to each element varied across the sessions.

Module three comprised sessions six to eight. From the sixth session onwards, emphasis was given to group work by inviting all the participants to share one prop, take turns, collaborate, and create movement sequences as a group. The activities in these sessions emerged based on the level of readiness in the participants to be involved in the group as the sessions introduced movements with more social play elements. The sessions encouraged children to develop their own movement narrative structures or imaginative stories which have a beginning, a middle and an end. The sessions aimed to increase their capacity for improvisation or free movement-based play. After mirroring, sensorimotor explorations creatively merged with the use of play techniques. Rhythm and props were the most popular techniques mentioned in all seven studies included in the review. Sensorimotor-based activities (Scharoun et al., 2014) involved open-ended movement explorations and structured games. Importance was given to spontaneous movement interactions and expanding the children's movement vocabulary (Hartshorn et.al., 2001; Athanasiadou & Karkou 2017; Devereaux 2017). The use of props in the movement sessions was informed by the concepts of symbolic play, imaginative play and role play. Here non-realistic objects, actions or ideas were used to represent and sometimes revisit familiar and unfamiliar events. Scope was to explore their imagination through real and familiar, to completely fantasied movement expressions (Alvin, 1975, 1991; Karkou and Sanderson, 2006). Children were invited to move according to their chosen one role or multiple roles, plans and sequences by using inferencing and prediction for their highly imaginative themes (Westby, 2013). Traces of some of these methods were found in most of the studies included in the systematic review, although detailed descriptions were not available (Samaritter, 2015; Chiang et al., 2016; Athanasiadou & Karkou, 2017; Devereaux, 2017)

Module four consisted of two sessions. In these last two sessions participants experimented with movements by recollecting their journey. They were encouraged to map their feelings, thoughts and associated emotions to the past sessions using a range of emojis on the floor. We walked through the sessions and emojis and stopped when we found the emoji that we were looking for and expressed those emotions through movements for the rest of the group. The group would try to guess what they were expressing through movements. Depending upon group's abilities children were invited to try different ways of moving using a six part story structure. It aimed to concretise the creative and abstract exploration towards a self-narrative by identifying values and future implications to their overall wellbeing. We also examined different parts of their journey,

ending with the creation of an art piece, clay model or short movement sequence of their journey based on the group's choice and abilities. Opportunities were created to practise new ways of being, refine, change or retain, reflect, share and bring the group process to an end.

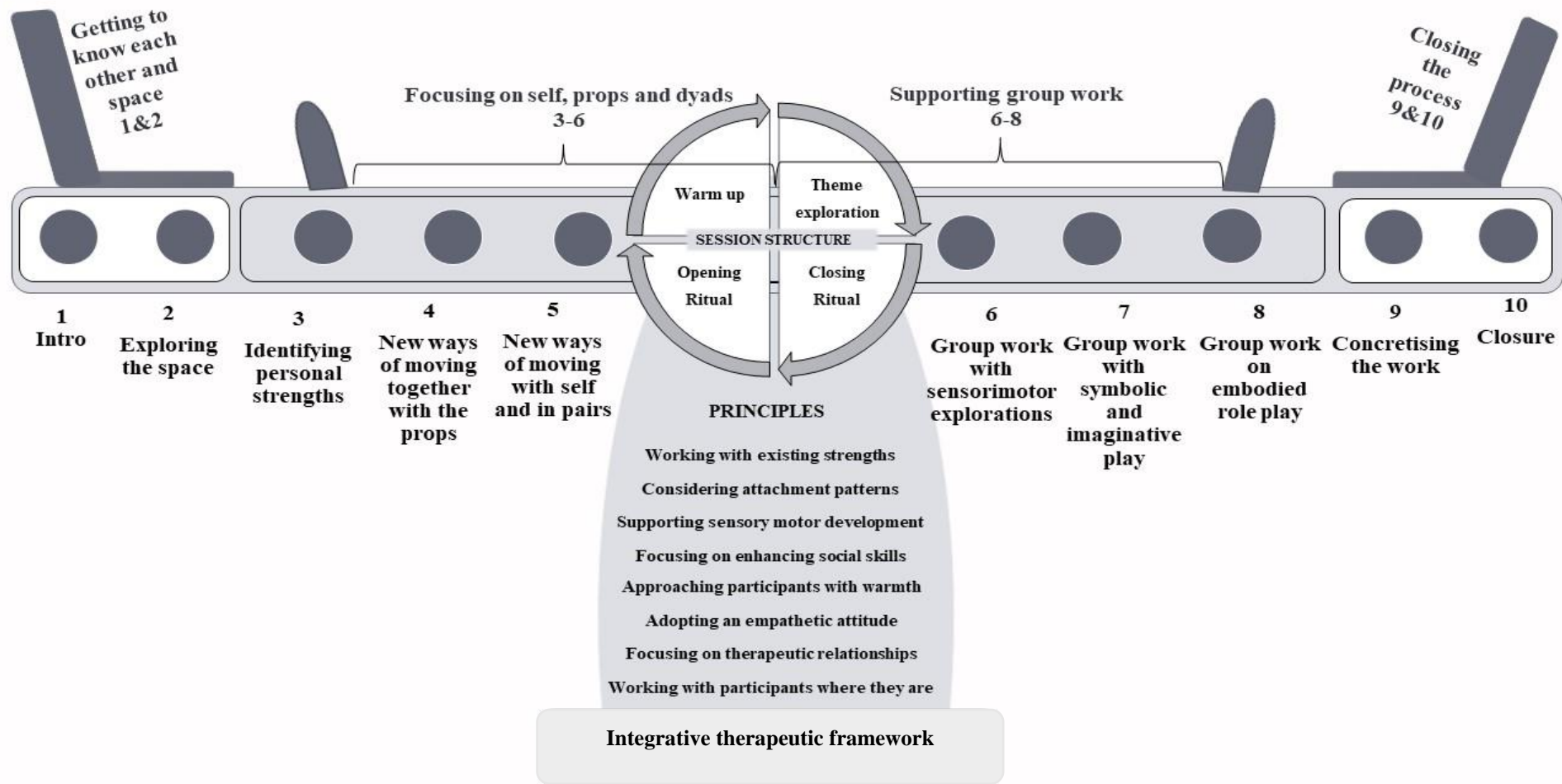


Figure 5. 2 Representation of the integrative therapeutic DMP framework for children with ASD

5.2.3 Session structure

With regards to the structure of each session, research-based practitioners have described similar session structures. The sessions began with a warm-up, moved to theme development and/or structured/unstructured play activities and closed with cooldown activities. The structure of the sessions was similar to those proposed previously (Hartshorn et al., 2001; Devereaux, 2017; Samaritter, 2015; Athanasiadou & Karkou, 2017) and used additional rituals such as using non-verbal expression to show how they are at the beginning and the end of the session as part of the data collection process. This included simple tasks such as choosing different coloured bean bags and putting them into the circle if they were happy, using gestures, movements and creative marks on a calendar to mark off the sessions in the beginning and at the end. The overall frame of both the process and the session structure was regarded as a holding structure (Winnicott, 1960) for the therapeutic contact.

5.2.4 Session materials

Keen attention was given to the use of props and objects in the protocol considering the meaning and related theories. Laban movement vocabulary such as body, efforts, shape and space were used along with body orientation, engagement and regulation were reported as important by many authors in the literature review (Samaritter, 2015; Chiang et al., 2016; Houghton & Beebe, 2016; Athanasiadou & Karkou, 2017). The props were sometimes seen as an extension of the body, part of the body and sometimes as an external object as the props are adaptable with any part of the body. They were also used as starting points for movement improvisations, as a way of projecting self-expression and exaggerating the movements to enhance the impact of the expression. Thus, these props acted as a bridge between in-out and out-in movement of expressions and experiences. DMP practice does not expect any skilful act to manipulate the objects. Hence, this led the children to try something new in many ways with a wide range of movements by containing them safely. The aim was to overpower the flow of emotions beyond the mechanical qualities such as the momentum, energy, dynamics of the objects to surprise ourselves with new possibilities. The participants were encouraged to experience the fun of moving with the flow and against the flow of the props as a way for sensory stimulation, sensory integration and relaxation. The reviewed studies made several references to the use of props such as hoops, gym mats, tambourine, stickers, elastic bands, many other toys and music have been documented. In this protocol, we observed the sensorial

qualities of the props while choosing the props and a range of props were integrated into kit so that they were readily available. Examples include: *tactile manipulations*, such as, variety in garments (scarves, soft blankets), feathers, balloons, ribbon, bubbles, clay; *proprioceptive adaptations*, such as, weight of small and large balls, hoops, bean bags, space within body socks, tunnels and rocking swings created using parachute and stretchy bands; *auditory stimulation*, such as, instrumental music with varied tempo and mood, high and low frequency noise makers and musical toys; and *visual materials*, such as, colourful objects including glittering ball, stickers, images, torch with variations in light.

5.3 DMP intervention protocol for caregivers

Unlike the protocol for children with ASD, due to dearth of research in the area of DMP and caregivers of children with ASD a systematic review was not feasible. So, the intervention protocol for the caregivers was developed from three major sources, following a similar process as it was for children with ASD (Figure 5.3). The first source was the outcomes and themes that emerged from the preliminary small-scale study conducted in India before this PhD project (Aithal et al., 2019; Aithal, Karkou & Kuppusamy, 2020). The second source was the findings of ongoing parallel projects on depression (called Dancing the Blues and Arts for the Blues – Parsons et al., 2019; Haslam et al., 2019) led by the director of studies of this doctoral study. The third source was a systematic review on depression by Karkou 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, the windmills may not be able to function efficiently and may face challenges due to several reasons. Hence, the protocol was intended to use dance movement psychotherapy (DMP) in enhancing factors that determine effective functioning of parents and other caregivers such as teachers when the direction of the wind is unfavourable.

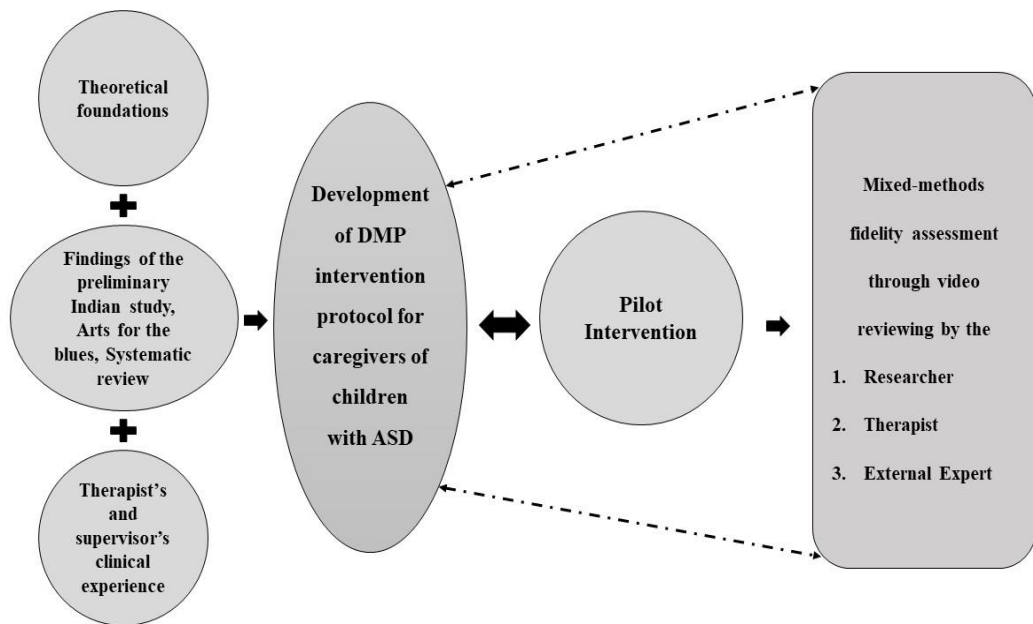


Figure 5. 3 Development of the DMP intervention protocol for caregivers

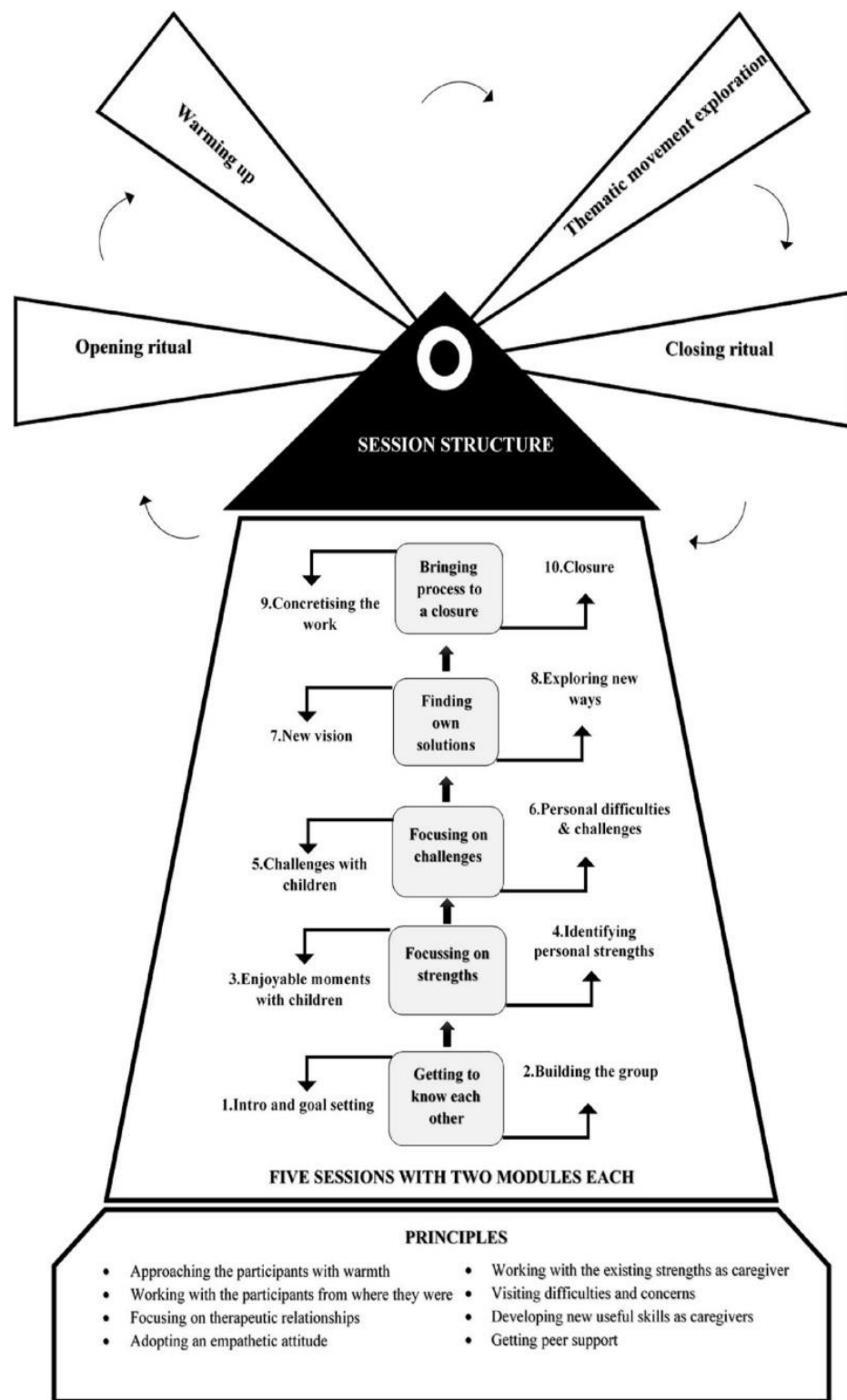


Figure 5. 4 Description of the protocol for caregivers of children with ASD

As shown in Figure 5.4 the sessions were designed at three levels for fidelity and replication functions. The grounding layer of the intervention protocol was the theoretical principles acting as the binding thread and grounding point to the whole therapeutic processes.

5.3.1 Therapeutic Principles

- 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 influencing factors to express themselves (Aithal, Karkou & Kuppusamy, 2020). They also reported the warm and welcoming environment eased them to be child-like, to dance without being shy and to share their emotions in a non-judgmental and a trusting atmosphere. In addition, literature review of Arts for the blues project identified unconditional positive regard, full psychological ‘contact’, ‘holding’, comfort and reassurance, inclusivity comfort and containment in therapy space or organisation as frequently occurring words as therapeutic factors (Parsons et al., 2019).
- Working with the participants from where they are: This principle aimed at the therapist ‘meeting’ the participants by adapting oneself to reach the level of the participants (Karkou & Sanderson, 2006). The starting point would be the place where the participants are at and the starting point is not led/directed by the therapist. Parsons et al (2019) noted ‘working with the ‘now’ to allow the participants to start from with present capacities.
- Focusing on therapeutic relationships: Building a trusting therapeutic alliance was identified to be fundamental to the process by Karkou et al (2019) and Parsons et al (2019). Therapists were encouraged to 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. They revered 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 identified by Karkou et al (2019) and Parsons et al (2019), the intention with this principle was to get to the roots by unearthing and resolving the past experiences, issues and concerns. It was considered vital for the participants to reflect on their life events which were impactful, long-term patterns, emotions, coping styles and attachments in the past for self-understanding of what they are now.
- Developing new useful skills as caregivers: 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, correcting their thoughts, beliefs and behavioural patterns. Karkou et al (2019) and Parsons et al (2019) as well identified learning skills to manage self as one of the major themes in their review. In this study, it was implicitly and explicitly anticipated that the new skills would not just be limited to only the caregivers, but also to be used with their children.
- Getting peer support: The support from the group members was a critical component of the therapy process (Aithal, Karkou & Kuppusamy, 2020). Earlier studies showed that informal social support to parents brings positive results in them and children. It also identified social elements of DMP facilitated to get support from the peers and helped the participants to experience a genuine connection with others and self-identification, acceptance and validation at mind and bodily level. Hence, facilitating peer support was as incorporated as one of the principles.

5.3.2 Intervention structure

Initially, the intervention was planned as ten separate sessions. However, due to the time restraints and the participants' difficulty to commit, the number of sessions were brought down to five. The duration of each session was doubled with each session being also a module. In this way we were able to deliver our full plan and reduce the number of visits made by the participants. The themes, session objectives and progression order of the modules were set out as shown in Figure 5.4. 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. The first session aimed at establishing safety and ground rules through a clear explanation of process. Using trust building group exercises and ice breaking activities the sessions intended to work towards fostering a warm and secure therapeutic environment and get to know each other. This session also aimed at explaining about confidentiality and identifying what the participants wanted to achieve out of these sessions by encouraging them to set up an intention. This session was believed to be foundational or primary to further the therapeutic process. These objectives aligned with the first principle and it was intended to maintain this throughout.

Session 1 (indicative materials used and techniques): The sessions were tailored based on what the participants brought to the group. Hence, these are just indicative elements and the sessions were not meant to be mere 'activity-based'. In this session there were playful, mindful and movement-based icebreakers, creating body rhythms, passing the leadership to lead the movements while the rest of the group echoed the movements, sharing props such as scarves and colouring materials.

The second session was all about exploring inner self to identify personal strengths and enjoyable moments with children. It was intended to make the participants mindful and aware of their internal and external contextual resources and strengths. These objectives were supported by the findings of the preliminary study in India where the participants reported that DMP facilitated them to recognise several personal and external resources such as child-related, family-related, socio-cultural and political factors supporting their wellbeing.

Session 2 (indicative materials used and techniques): Mirroring was one of the key techniques that was introduced. 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.

In the third session, participants were invited to get to the root, unearth personal difficulties, internal conflicts and challenging aspects as a caregiver. They were encouraged to confront challenges creatively. 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 project. In the preliminary study conducted in India, the sessions where the participants expressed their challenges were vital stages for their transformation.

Session 3 (indicative materials used and techniques): This 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.

The fourth session was meant to experiment with thoughts and actions to tackle the challenges faced by the caregivers while recollecting their strengths identified earlier during the journey. They were encouraged to find alternative movements and think of something other than their usual patterns, try different ways of being with a new vision for life to use their capabilities sensibly. 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).

Session 4 (indicative materials used and techniques): Options to choose from a range of props such as ribbons, pom pom, balls, bean bags, balloons, scarfs, parachutes, bubbles, sticks, noise making objects etc were provided to create their own obstacle course. The participants would find different ways of traveling and later take the rest of the group with them in their journey. The group provided their experiential insights on sharing their own

obstacle course journey with others and also being part of the journey of the rest of the group members' journey. As a group we reflected on the learnings about different strategies used by the participants to get through the obstacle course from a movement perspective.

In the final session, time was given to recognise, integrate and celebrate the work done in the previous session back into their lives. It aimed to concretise the creative and abstract exploration towards a self-narrative by identifying values and future implications to their overall wellbeing. We also aimed to add different parts of their journey and culminate it by creating a short choreography of their journey. The decision to incorporate in the protocol was made as the preliminary Indian study findings showed co-created choreography brought some happy and at times pleasantly surprising moments when they viewed and appreciated the co-created movement choreographies. Opportunities were provided to practise new ways of being, refine, change or retain, reflect, share their vision and bring the group process to a smooth end. A theme called 'rebirth' emerged from preliminary study in India relating to these objectives and the Arts for the Blues project recognised these elements under the theme called 'integrating useful materials'.

Session 5 (indicative materials used and techniques): Flash cards were used as the starting point for creating movement narratives. In addition, a wide range of props were offered to generate movement structures. A six-part story technique was adopted to a movement session to support the structuring of the movement narrative. Opportunities were provided to refine and produce their 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.

5.3.3 Session structure

Each session encompassed four distinct segments which related to the objectives and sometimes overlapping with each other. The first section was the *opening ritual*: This part served to make the shift from outside life towards the therapy session by connecting to the participant's narratives and directing their attention towards the movement session. The participants were invited to provide a movement response on how they felt at that moment and those responses were considered as part of arts-based data.

The next section was the *warming up*: It aimed to enable interaction between participants and also draw their attention towards their bodies. In this section the therapist supported the exploration of movement elements by introducing movements.

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 can unfold. Starting points for improvisations were found in the use of props or in the variation of movement actions. The participant's movement actions form the basis for movement exploration. The therapist approached these movements as dance material and examined them for their kinaesthetic qualities.

The final section was the *closing ritual*: During this part, movement experiences were meant to close the movement themes of the session and to make the transition to everyday life. The space was opened for reflections on movement experiences, thoughts or feelings that may have been brought up by the group and what they wanted to take away from the session and implement in their week until we meet next time. The participants were invited to offer their movement response to how they were feeling at the end of the session and it was counted in for the arts-based data.

5.4 DMP therapists

A qualified and ADMP UK registered therapist facilitated all nine DMP clusters with children and caregivers at two different locations. The therapist was an experienced female DMP practitioner and a sports psychologist. The therapist was encouraged to: bring the whole 'self' in the session; maintain a non-judgemental environment; balance between evidence-based therapeutic structure and flexibility in experience-based instincts; make clinical judgements based on theoretical framework and prior experience; retain boundaries and safety but intervene if needed; follow the general structure of the DMP session; and share and discuss any concerns and challenges during supervision.

5.5 Drawing from the clinical experience of the supervisor and therapist

Once the preliminary structure of the intervention protocol was developed, two workshops and discussion sessions were carried out with therapists and other arts therapy practitioners. Different ways in which the objectives can be delivered in the sessions in relation to different case scenarios were planned ahead. Various clinical dilemmas that might have occurred in a heterogenous group setting and different ways in which the

therapist may have responded in such situations adhering to the principles were considered. Once the pilot intervention began, the sessions were clinically supervised by the director of this study and a qualified clinical supervisor. Interesting, challenging and significant situations and participants of different groups were reflected and discussed during clinical supervision and strategies to further the therapeutic processes were decided.

5.6 Description of the implementation of the DMP intervention protocols

As mentioned earlier in methodology chapter, there were five clusters of children with ASD and four clusters of caregivers from two SEN schools who participated in this pilot intervention study. School A was a special school and college for children and adolescents with moderate to severe learning difficulties that also offered ASD-specific education. Three clusters of children with ASD and two cluster of caregivers participated from this school. School B was a specialised school for ASD and the children were mostly verbal with mild to moderate ASD. There were two clusters of children and two clusters of caregivers from school B. DMP was new to both the schools. The structure of the setting in terms of space, light, acoustics and floor were not ideal for DMP. In addition, there were several instances of double bookings and sudden interruptions. So, there were several instances where the rooms had to be changed although a consistent room was requested as a prerequisite to deliver the sessions. In school A, the room that was assigned for DMP sessions was a children's library. It was the central part of the school structure. Hence there was a constant movement of people and increased the probability for distractions. It was a spacious room with good acoustics, floor and lighting. However, there were furniture and book shelves which were open and at children's easy reach. This was attractive for couple of children only in one of the clusters. In school B, the assigned room was away from the regular classroom. This reduced the amount of distraction. This room was small with good lighting and poor acoustics. Some of these elements made it easy to deliver the sessions. But there were many challenges that had to be addressed to implement the intervention protocols in this environment. In both the schools the children in each cluster belonged to different classes. Hence, for every session one of the huge tasks was to bring them all together from different parts of the school. Their arrival to the session was dependent on teaching assistants' availability and schedule. This added to the amount of uncertainty in the configuration of the clusters. Several measures were taken

to reduce distractions and providing structure. For instance, a carefully chosen arrangement of furniture and props ensured the safety of the children, the therapist and enhanced the engagement of children. Some of the strategies and modifications were successful and sometimes were beyond control. Adaptability, creativity, tenacity and prediction abilities were tested at every stage. Regardless of these practical challenges, nine DMP clusters were successfully completed. The following paragraphs provide a general overview and acceptance of the intervention of all the clusters.

Cluster 1 - children: This consisted of five children (age range 8-13 years) with moderate to severe ASD. They primarily used non-verbal communication and the children presented a range of energy levels, interests and strengths. The group started with having two children in the centre of the room and the rest scattered at the periphery. Some of the objectives that were initially planned had to be simplified. The participants who were scattered coming together as a compact cluster was one of the significant changes noticed in this group. The children appeared to have liked the sessions. Although there were no verbal responses, children's excitement while entering the sessions, children pointing to the room and dragging the teaching assistants to take them to DMP space even after the termination of the sessions were observed while working with subsequent clusters. These non-verbal expressions revealed a lot about their appreciation and acceptance of the sessions.

Cluster 2 - children: The cluster was composed of five children (age range 8-13 years) with mild to severe ASD. The dispersion within the cluster was very evident in terms of sensitivity and tenderness to aggressive and raw expressions. Two children wanted strict structure and discipline while two others appeared to prefer mess. So, emotionally holding them together was difficult. The therapist and the researcher had to switch between two extremes to balance the cluster. Embodying different animal movements and movement explorations with parachute were reported to be their favourite parts of the whole DMP programme.

Cluster 3 – children: This cluster was actually formed of four children with moderate to severe ASD. However, only three children attended regularly and the fourth child joined intermittently and stayed only for a short while. The cluster maintained gentleness in their movements throughout. The general tendency of the group was to sink to the floor with lethargic energy. The groups' much-loved parts of the sessions were reported to be movement play with the body shadows, wrapping body with the parachute and rolling on the ground.

Cluster 4 – children: This cluster initially started with six children with mild to moderate ASD (age range 8-9 year) later ended up with three children with high energy and enthusiasm to dance. There was a lot of competition amongst them. All the three children had fairly good verbal skills. One child had mitigated echolalia and another child kept repeating the word ‘Pikachu’ as that was his favourite cartoon character. So, in the sessions Pikachu was our starting point and we improvised several characters from there. Playing the wolf game where the children took turns to move as a hungry wolf who would hunt during dinner time and the rest would try to escape was something that the group expressed to be the best and they wanted to play and improvise with that before switching to any other activity from the fourth session onwards.

Cluster 5 – children: This was a cluster of six children (age range 8-9 year) with high energy, very expressive diagnosed with mild ASD. Emotional regulation was something that would reach two extreme ends of high or low mood. The children bonded very well in the beginning and blew up after the 7th session probably due to the change of location and separation anxiety. Closing the sessions peacefully was way off as they expressed extreme anger, distress and pain to depart. They described running under the parachute and dancing in pairs with a hat and a cap with the face of a duck as their special parts of the intervention programme.

Cluster 6 – parents: This was a cluster that initially started with six parents looking after children with moderate to severe ASD. However, only two participants remained in the group. Bringing all of them together at one place was extremely challenging for several reasons. The therapist described the group as ‘lukewarm’, and the responses from one of the participants were generally concrete and dry. Encouraging them to actively engage was difficult. One participant expressed that DMP is not something for him, and the second participant described busting the balloon was her treasured part out of the full DMP intervention programme.

Cluster 7 – teachers: This was a cluster of teachers which started with five people and ended up with three. This cluster had participants with mixed interests and abilities. Some of them could respond to creative material and some of them needed concrete instructions. The energy and enthusiasm of this cluster oscillated. There were several factors which interrupted the flow of the sessions and the last session was conducted after a break in between. The group enjoyed body rhythm-based group activity and celebrating success moments with the children.

Cluster 8 – *parents*: Similar to the pattern of the other two clusters, this cluster started with six parents but only two of them remained until the end. However, the two participants actively engaged in the process. There was a good rhythm in which the cluster progressed and the participants expressed genuine interest to work on their self-development. The two participants appreciated exploring positive moments with children.

Cluster 9 – *teachers*: This cluster consisted of seven teachers in the beginning and towards the end three of them remained in the group. Many members expressed interest to be part of the sessions. However, work commitments and events at the school meant that not all participants could remain in the cluster. The cluster was very cooperative and involved during the sessions. This cluster appreciated engaging in the verbal reflective process.

5.7 Fidelity assessment

The DMP intervention protocols described earlier were conducted with narrowly defined client groups of children with ASD and their caregivers. In spite of the strict inclusion criteria and being formally homogeneously defined clusters, the developmental stages and emotional needs of the children varied immensely. This brought a significant amount of heterogeneity within the clusters of children. Contrastingly, although teachers and parents had different roles to play in children's life, their collective emotional needs appeared homogenous. Regardless of a significant variance or negligible difference, the intervention protocols were aimed to be consistent across the clusters of participants to allow for further replication of the study and fidelity assessment while still to provide space to meet the needs of the participants. The adherence to the protocols were assessed through inter-rater reliability analysis of the retrospective video ratings and annotations of what were observed as evidence of adhering to the protocol in the videos.

5.7.1 Ratings questionnaire

An assessment of the adherence to the two DMP intervention protocols (children and caregivers) were carried out separately through online questionnaires completed by three raters (See Appendix X and IX). The questionnaires consisted of 12 questions and the questions covered five different aspects of adherence to:

1. the therapeutic principles
2. the provision of DMP session objectives

3. the structure and progression of therapy through four sections
4. the use of appropriate tools/props
5. 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 ranging 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, provide any additional information or observations that they noticed in the videos as evidence to support their subjective perception of evidence that the principles and other criteria were followed as per the protocol.

5.7.1.1 Raters

The adherence of the sessions to the intervention protocol was assessed by three people:

Rater A - The dance movement psychotherapist delivered the sessions and played a key role to tailor the sessions to meet the needs of the group.

Rater B- The researcher 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 delivery of the intervention.

Rater C- The second researcher was 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 protocols' fidelity assessment since, unlike rater A and B, she was not involved in the planning or execution of the intervention programme.

5.7.1.2 Procedure

The raters were asked to watch the video clips of the sessions 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 to have an equal distribution of video samples across the full intervention programme, video of sessions from the beginning (session 3), middle (6) and the end (9) were selected out of ten sessions of DMP for children across all five clusters to be

consistent. Similarly, for the caregivers DMP intervention programme which lasted only for five sessions in total, just the initial (2) and the end (4) parts of the video clips were selected for the analysis. The children's video clips of every session lasted for around 40 minutes each while the caregivers' video footages were around 60-70 minutes each. The total duration of the children's videos review was around 10 hours and caregivers' footage was approximately 8 hours.

For children's DMP sessions, each rater gave a score to each of the twelve questions asked, for three different sessions (i.e. sessions 3, 6 and 9), for the five different groups that took part in DMP intervention. This yielded a total of 180 different observation points for each rater. For the caregivers' sessions each rater responded to twelve questions, for two different sessions (i.e 2 and 4), for the four different groups that took part in the DMP intervention. This produced a total of 96 different observation points for each rater.

5.7.1.3 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. So, the maximum scores across the sessions and raters for each question in children's questionnaire was 180 and for caregivers 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). The plot 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 and thus, if both raters are in complete agreement, on average, is what our mean difference would be. 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's 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 (B – C) for the children's sessions and the adult's sessions.

Furthermore, the qualitative remarks and observations from all the three raters were grouped together under the five categories of the questionnaire to understand what aspects in the video made them identify if there was evidence or no evidence to indicate the sessions adhered to the intervention protocol.

5.7.2 Quantitative results of fidelity assessment

All the questions in both the questionnaires except for question 9 (meeting the objectives of the session) in the caregivers' questionnaire were noticed to have 75% and above adherence. The ratings of question 9 on meeting the objectives of the session in caregivers' questionnaire showed 66.66% adherence, which was the lowest of all while question 2 (starting from where the participants were) was the highest with 92.7% adherence. In the children's questionnaire, question 7 (opportunities for sensory motor development) had the highest adherence score with 97.77% and question 6 (considering attachment patterns) was the lowest with 75% 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 (B – C) for the children's sessions and the caregivers' sessions are shown in Table 5.1. Bland-Altman plots were created for each of these comparisons and can be seen in Figure 5.4 for children's sessions and Figure 5.5 for adults' sessions.

Table 5. 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 children’s sessions and caregivers’ sessions.

	<i>Mean difference</i>	<i>Standard deviation of \bar{d}</i>	<i>Limits of agreement</i>		<i>One sample t-test</i>	
	\bar{d}	s	$\bar{d} - 1.96s$	$\bar{d} + 1.96s$	<i>t-score</i>	<i>P-value</i>
Children						
A – B	0.01	0.92	-1.79	1.81	0.162	0.9
B – C	-0.2	0.98	-2.12	1.72	-2.747	0.01*
A – C	-0.19	1.01	-2.17	1.79	-2.502	0.01*
Caregivers						
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

The results shown in Table 1 indicate that for children’s ratings, rater C appears to be scoring systematically lower than rater A (mean difference = -0.19) and rater B (mean difference = -0.2), while almost no difference in ratings score is found between raters A and B (i.e. mean difference = 0.01). Results from the one-sample t-test show that the difference between raters A – B is not significant ($P=0.9$), though significant results were found for A – C ($P=0.013$) and B – C ($P=0.007$). However, the difference between rater C and the other two raters is very small i.e. with a maximum mean difference of -0.2. This suggests a high level of consistency across all raters when measuring the adherence to the therapeutic protocol, insofar as the children’s sessions are concerned.

For ratings of adherence to the therapeutic protocol for caregivers’ sessions, 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 across both children and adults ratings. 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 5.5 for children and Figure 5.6 for adults.

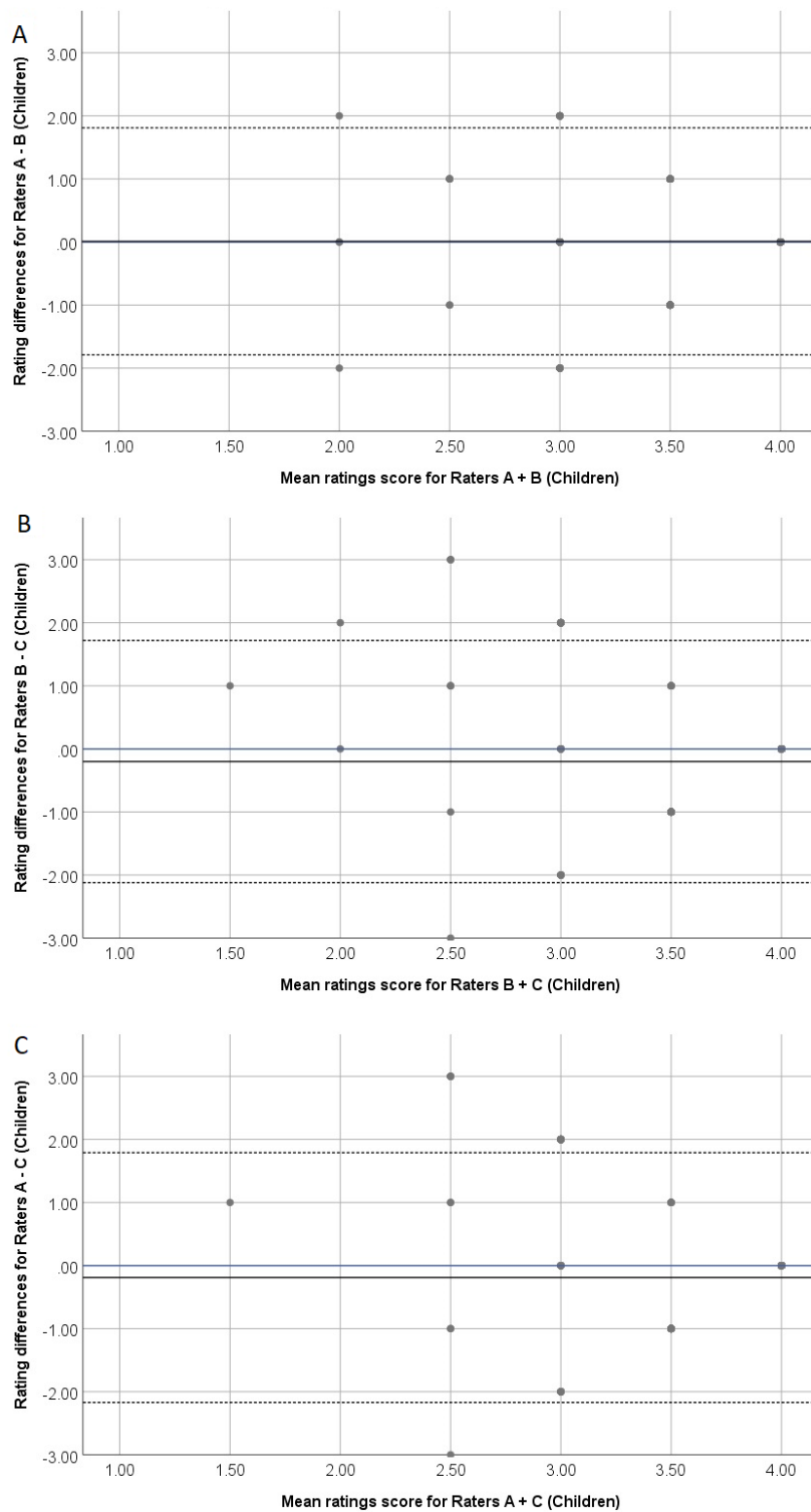


Figure 5. 5. Bland-Altman plots showing the mean difference between raters (thick black line) along with the upper and lower limits of agreement (dotted lines) for children's sessions.

The difference between rater pairs is plotted against the mean score for the pairings, A – B (graph A), B – C (graph B) and B – C (graph C).

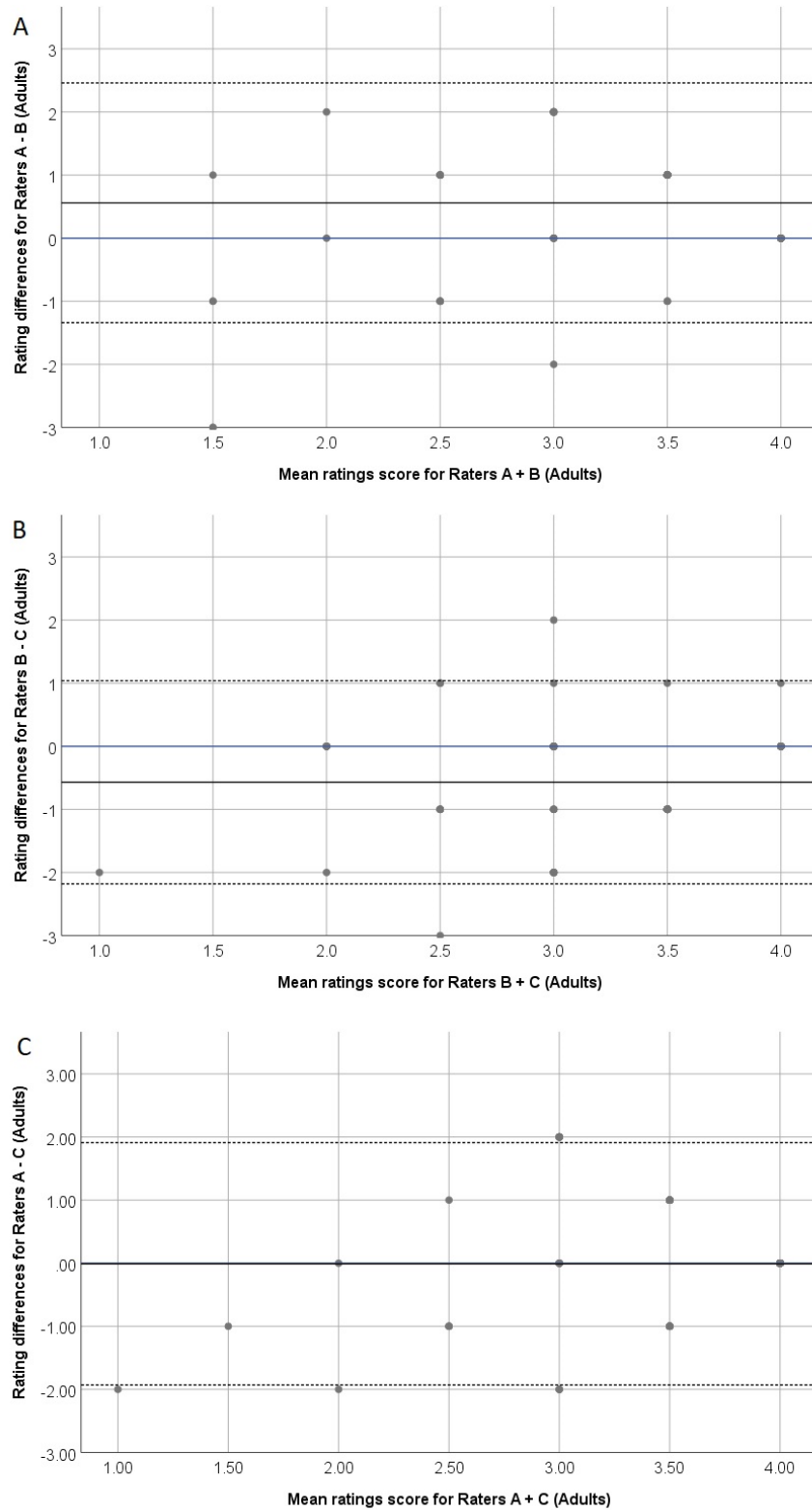


Figure 5. 6 Bland-Altman plots showing the mean difference between raters (thick black line) along with the upper and lower limits of agreement (dotted lines) for adult's sessions. The difference between rater pairs is plotted against the mean score for the pairings, A – B (graph A), B – C (graph B) and B – C (graph C).

5.7.3 Qualitative results of fidelity assessment

Looking at the observations noted by the raters for the both the protocols, several factors that indicated the adherence to the principles and factors, actions and circumstances obstructing adherence were grouped together.

5.7.3.1 Adherence to the principles

For the question about evidence that an appropriate therapeutic environment was created with warmth, the raters observed gentle invitation from the therapist to engage. Lively encouragement and mirroring were noted as some of the positive indicators. The cold, inactive presence of some of the teaching assistants (TA), interruptions by school, directive commands such as *'sit, stand up, say happy'* by TAs were noted as factors deviating the session away from the principle.

The next question sought evidence that sessions approached the participants from where they were. This had mixed indications. The difference of opinions came between the external rater and the therapist for children's protocol. The external rater C noted that the following were appropriate: keeping the tasks simple, providing opportunities to talk about their feelings without pushing them and allowing the participants to stay within the feelings of happiness or sadness without going *'too deep'* into them until they were ready. Contrastingly, the therapist and the researcher have documented several instances where this was not possible throughout the sessions. The lapses came when the energy level of the group was too high and meeting them while they were at the peak was something beyond the capacity of the facilitators. Purposeful misattunement from the group and some coaxing/directing were needed due to level of chaos. The therapist also expressed that *"it is hard to always be inviting children at the periphery and engage. But S (researcher) spent most time there to 'meet' clients"*. Whilst for the caregivers' protocol, it was found to have similar opinions.

The third principle (enabling a positive therapeutic relationship/alliance) was observed to be present across the sessions with children and caregivers. However, the degree to which it was experienced by the therapist and the factors observed by the external rater C varied. The rater C pointed out that good eye contact, comfort in the physical proximity, children being able to close their eyes by trusting the environment and children allowing the therapist to sail with them were some of the indicators of a

positive therapeutic relationship. She also highlights that on one occasion while playing with the torch light, *“the fact that they were not worried to switch off the lights and be in the dark, may show how much children trusted the DMPs and they had developed a safe and secure relationship”*. The therapist and the researcher rater B, were more specific in documenting that the extent of therapeutic relationship varied across clusters. The therapist’s remarks indicate that with two clusters she noticed strong relationships throughout. But, with the other three clusters it was experienced occasionally. For instance, the therapist has expressed difficulty holding and containing the anger of one of the participants in cluster five. With regards to the caregivers, it was observed that one of the teachers’ clusters connected well. But the researcher noted that some of them were *‘insulated’* and expressed some resistance to connect.

All three raters indicated that the session adopted an empathetic attitude. For example, in one instance a child did not want to join the activities, but was sitting covered within his blanket. Rater C described, *“It was nice to see the therapist who brought the group parachute on him. So instead of asking him to join the group, the group goes and ‘find’ him where he felt comfortable. I believe that's a very empathetic action”*. Another example noted by the researcher was when one of the children got really angry, the therapist with a quiet and calm tone of voice, reassured him that it is okay, gave him time and space to calm down. She showed to him that she accepted him in the group as he was, unconditionally. This allowed the child to come back when he was ready and verbalise his feelings. However, there were many instances where the indicators of presence of empathetic attitude were not explicitly clear or uncertain. Rater C mentioned *“I am not sure here, I observe kindness and warmth, but not necessarily empathy. Potentially this is because I only have experience with mainstream schools where children express openly their feelings and experiences and there are clear opportunities to show empathy”*. Adherence of this principle was clearly visible with caregivers mainly through acceptance of emotions and experiences that parents brought in the group. It was detected by the external rater in one of the clusters that *“Participants seemed to be hesitant at the beginning, but gradually they have shared more and more about their own stories, with confidence and openness”*.

The raters specified that the sessions worked with existing strengths of the children and caregivers. In one cluster it was observed that children took turns, pretended roles, came out of their comfort zone and worked as a group but at the same time as individuals each one had something to offer to the group. The heterogeneity was in a way

celebrated. Rater C commented *“the child on the wheelchair was encouraged to be an active member of the group by inviting him to make his own sounds and movements”*. The therapist reflected saying *“perhaps I was pushing them to be too cognitive some of the time. I should have restrained that”*.

The indication that the session considered attachment patterns of children was reportedly something difficult for an external rater to observe while reviewing the video. The external expert mentioned *“Potentially, indirectly, because of the escalation of the argument that gave opportunities to express emotions that might have been repressed”*. The researcher noted that when children displayed secure attachment the group functioned well. However, when children displayed insecure avoidant, insecure ambivalent and disorganised-controlling patterns, group seemed to dissipate and the facilitators had to vary their roles to suit the different styles.

All three raters recognised that there were plenty of opportunities for children to develop sensory-motor skills through the activities, movement qualities introduced and the materials used. The external rater observed that *“Lots of opportunities for sensory-motor development, especially under the parachute and being able to cover or hide their whole body. It felt adventurous and safe at the same time”*. Therapist and the researcher acknowledged that this was the only principle that was evident across the sessions regardless of the abilities and interests of the children.

Several moments during the sessions were observed to be enabling opportunities for social interactions among children. However, all the raters observed various layers and degrees of existence of this process across clusters and sessions. Constant variations and growth were distinguished. The therapist claimed *“lots of challenge for them to accommodate others' differing needs. Lots of social interaction sometimes competitive sometimes playful.”*

Another principle on caregivers getting peer support was observed to be blooming in full extent only in one cluster and to some extent in another cluster and in two other clusters it was negligibly present. The attendance and engagement of the participants were fluctuating drastically and, in some cases, a group never formed. Work dynamics and trusting work relationships appeared to be critical with teachers. The external rater C commented *“the teachers did not look close to each other and as a result, I am not sure if peer support was enabled”*.

Adherence to the last two principles on developing new useful skills and visiting challenges as caregivers were observed to be maintained intermittently. The therapist reported *“Particularly, the sharing seems very powerful in this group. I think being able to learn new ways of being, discovering new ways of expressing how they feel (non-verbally) may be a very powerful skill for the teachers.”* Further, in some clusters the researcher and the external rater opined that there was scope for further exploration and acknowledged the limitation with the duration and number of sessions. *“The two sessions I watched left me with the sense that there were more things that could be done with these adults, perhaps if the sessions were a bit longer”*.

5.7.3.2 Adherence to structure and progression of therapy through four sections

All the raters had similar observations with regards to the structure, pacing and flow in the sessions. The overall structure remained intact, although the pacing between certain sections varied with the participants’ involvement. A common observation was that flow in the sessions were not always possible. It was dependent on the emotional availability and health of the therapist. In addition, the responses from the participants, their involvement and energy had an impact. For instance, in one of the sessions the therapist reflected *“it felt a bit slow-paced to me”*. The external rater mentioned *“The pace here felt much more appropriate, though this might also be because of the overall vibe of this group”*.

5.7.3.3 Adherence to objectives of the session

Many facets of information emerged in the observations made by the raters on adherence to the objectives of the session. For the caregivers’ protocol the responses were unanimous that the objectives were not met up to the expected level during sessions. There was much scope for development. However, with regards to the children the sessions were in line with the objectives but the raters found it highly challenging to identify if the session was able to cater for the diverse abilities of the children. It was contentious when ‘objective’ was viewed from uniformity and linear progression lens. The external rater mentioned *“I am not confident that this goal was achieved, but children do look more focused on their tasks”*. The researcher noticed that for cluster 1 and for some children in cluster 2 and 3, some of the objectives such as imaginative play were too ambitious. Some of the objectives were appropriate for children at a certain developmental stage. Although they were progressing, some of them could go up to only some point.

5.7.3.4 The use of appropriate tools/props

All the raters were in agreement that appropriate tools/props were used in the session. The researcher and the therapist have expressed concerned about the hygiene of the props with children with tendency to chew and suck the objects, especially when sessions were back to back.

5.7.3.5 Use of appropriate language for instructions in-line with the principles

Regarding the evidence on the instructions being consistent and clear, it was observed by all three raters agreed that the instructions were simple from the facilitators. However, it was challenging at times to manage the teaching assistants and it has been noted to sometimes create power imbalances. It was also observed that clear communication was not always achievable due to the acoustics and had to be louder than usual to be heard with the music on and draw the attention of the children. In addition, the therapist mentioned “*it was sometimes difficult to understand if some of the children were able to understand some instructions*”. However, this was not an issue with the caregivers group.

5.7.4 Preliminary discussion on fidelity assessment

Having considered both the advantages and disadvantages of manualised and non-manualised, these protocols intended to implement a *flexibility within fidelity principle*, which speak to individualization within an intervention protocol (Kendall et al., 2008). There is substantial evidence to indicate that children’s protocol was implemented with 75% and above adherence and caregivers’ protocol was adhered most of the times with 75% and more accuracy. From the statistical analysis of the inter-rater agreement there appears to be more agreement between raters for the children’s sessions, with a maximum mean difference of 0.2 between raters, in comparison to the ratings for the adult’s sessions, with a maximum mean difference of 0.57 between raters. 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. Taken together the results for children’s and adults sessions show that rater A (the dance movement psychotherapist) appears to be in complete agreement with at least one of the research raters i.e. rater B for the children’s sessions and rater C for the adult’s sessions.

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

protocols are mostly in consensus with each other especially with the children's protocol (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 (Rausch & 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 better 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.

It is also evident that agreement of the scores is closer in the children's sessions with a maximum difference of 0.2 point and all the questions with 75% and above adherence on the rating scale than the sessions with the caregivers. Including the qualitative remarks to the scale of adherence has aided nailing down why and where the differences in the opinions were occurring. These differences and poor adherence scores point out to the areas which require further attention and guide to decide on the course of action for amendments.

With regards to the principles of children and caregivers' protocols, it was noticed that some of the principles were not all always possible to be followed. They were dominant in certain sessions depending on the objective of the session. For instance, in the caregiver's protocol, one of the principles was on *visiting challenges*. This was dominantly explored in the third session. The videos reviewed were session two and four which could explain the disparity in the opinions. Another example is *peer support* as one of the principles in some sessions became baseless because of poor attendance. Hence revisions in the principles section could look at retaining only those principles which can

be applied in all the sessions and the specific ones can be moved to the category of objectives (Noar, Benac & Harris, 2007).

From the qualitative remarks, several factors that influenced the sessions' adherence to the principles were noted. These factors appeared to impact either positively or negatively. For instance, the school environment, space and logistics when not ideal for therapy can negatively impact the process and research outcomes (Bandur, 2012). Similarly, the role of Teaching Assistants in children's sessions are also debatable. Some of the children were highly dependent on Teaching Assistants for communication and their personal hygiene. At least up to the point where a good rapport was built between the children and therapist, Teaching Assistants were essential to translate what children were communicating. Despite briefing and instructing them about the therapeutic approach, very few of them could actually gel with the therapeutic attitude. So, to reduce the number of Teaching Assistants and their involvement in the sessions the protocol with children could potentially add informal and rapport building visits or sessions before actually starting the intervention. Contrastingly the presence of the researcher as a co-facilitator complemented and supplemented containing heterogenous clusters by extending two extra hands, eyes and ears to the therapist. Sometimes with children with insecure attachment patterns, the therapist and the co-facilitator held two contrasting qualities to balance equal proximity with all the participants. For instance, when the therapist worked at high level the co-facilitator reached down to children sitting at low and mid-levels. Also, while the therapist challenged and confronted the participants to move out of comfort zone with strong quality, the co-facilitator acted as a cushion and brought in soft nurturing qualities. So, it is highly recommended to have co-facilitators to capitalise strengths, balance the dynamics of the group process, conserve energy, provide mutual support and maximise diverse skills and resources (Freedman & Diederich, 2018).

Looking at the annotations by raters on the objectives of the children's protocol, it was evident that the linear progression after a point in the protocol may not be applicable to some children in a heterogenous cluster. So, an amendment that would be potentially useful is adding a non-linear or multi-layered objectives to the protocol (MacKay, Knott & Dunlop, 2007; Leung et al., 2016). One of the main features in ASD is that the developmental stages do not follow a typical trend. Hence, having a layered approach by considering developmental layering across social, emotional, behavioural, and cognitive aspects of ASD might become important when developing an intervention protocol for

children with ASD (MacKay, Knott & Dunlop, 2007; Leung et al., 2016). These layered objectives within a session can uphold and celebrate the diversity and heterogeneity in the spectrum and yet be able to adhere to the protocol. Although the scores on meeting the objectives of the caregivers' protocol are poor, it appears that the issues is not with the objectives as such, rather the problem was probably in the execution which was severely affected due to circumstantial uncertainties in the environment.

All those participants who have attended the sessions expressed their appreciation for the presence of these sessions and have shown some general acceptance of the intervention. The issues related to attrition, engagement and attendance were influenced by several internal and external factors such as degree of denial, acceptance, socio-cultural views, political factors and many others. The changes that could be made to the protocol to control these factors will be addressed in chapter seven after corroborating these observations with the outcomes of the intervention. In addition, several inferences that have emerged with regards to the duration, frequency, group configuration and other structural aspects of the protocols will be discussed later in the thesis.

5.7.5 Strengths and limitations of the fidelity assessments

The questionnaire has included both Likert scale and space to add remarks on the questions from three different stand points of the respondents. This has provided inputs on the fidelity from multiple lenses by demonstrating inter-rater reliability and providing the attitudes of respondents (Gwet,2014). The assessment findings demonstrate that intervention protocols allow for therapeutic relationship, adhere to a structure and at the same time be creative and intuitive in the process. Thus, providing room for consistency and creativity simultaneously to address the unique characteristics of the participants.

The use of video for reviewing has be advantageous to view multiple times and code them reliably (Waltz et al., 1993). Some studies seldom used a selection of video clips to assess the fidelity (e.g. O'Malley et al., 1988). However, Bryl and Goodill (2019) have recommended that adherence checks to happen no less than every other session considering the complexity in the intervention process and the newness of intervention protocols in the field of DMP. So, the current assessment has selected non-randomly video clips of every alternative session. Furthermore, 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 highly recommended to include fidelity assessment hours in future funding applications.

In future studies, the fidelity assessment questionnaire could also include a rating scale of the therapist's competence and satisfaction (Webb, DeRubeis & Barber, 2010). Here, competence is not meant in terms of qualifications but rather factors such as emotional availability, physical health and other variables impacting therapist's performance during a particular session, which could be unique to DMP. This in a way could document the ethical accountability on how much of oneself was the therapist able to provide on a particular day considering all the circumstantial pressures and its impact on the outcome of the study.

Overall, the intervention protocols were developed with a long and extensive process that involved multiple steps and operations, from initial idea, theory building, piloting the intervention, reviewing and integration of the reviews to feedforward. The mixed-methods fidelity assessment also demonstrates the transferability of these protocols to a larger context. At the time of the study, there are no published DMP intervention protocols for children with ASD and their caregivers. These protocols after incorporating the amendments recommended earlier in the discussion, will be useful for larger multi-centred studies with different therapists and also can aid funding applications. The protocols could further incorporate elements on cultural competency, sensitivity and credibility which are discussed in chapter seven. The protocols can be taken forward to clinical practice by developing a training manual to pass it on to the therapists working with this population for real world utility.

5.8 Summary of intervention protocols and fidelity assessment

Considering the insights from the literature review, preliminary research in India and clinical experiences two protocols were developed specifically for children with ASD and their caregivers. The protocols adopted an integrative therapeutic framework considering several principles from the studies reviewed that were woven together in one protocol. The study also used the session structures that were used by earlier studies. Close attention was given to transparently present the depth and breadth of these protocols. TIDieR guidelines (Hoffmann et al., 2014) (Appendix III and IV) were followed throughout, offering growing opportunities for replicable DMP intervention-based studies for these two client groups. At the same time, the uniqueness of the protocols rested on their openness for tailoring and modifying practices according to the personal

styles of the therapists, the needs of the groups and various clinical contexts. Further, by doing this, it promoted the presence of DMP practice in studies of effectiveness in ways in which the flexible and responsive character of the field could remain intact. Thus, as a result, it promotes research in the field of DMP.

The fidelity assessment conducted by calculating inter-rater reliability and qualitative remarks on video footage of the sessions showed good agreement among the raters. The agreement was particularly better in children's protocol. The remarks were further used to understand the reasons for the difference in opinions and several amendments were suggested.

CHAPTER SIX: FINDINGS AND INITIAL DISCUSSION OF PILOT INTERVENTION (PHASE II)

This chapter presents the outcomes of the DMP pilot intervention for children with ASD and their caregivers. The chapter is organised in three main sections. The first part provides information on findings related to children. At first, basic demographics of the child participants recruited to this study are provided. It is followed by the quantitative, qualitative and arts-based results for children. The second part is dedicated to the findings from the caregivers' data set. The third section of this chapter presents two case vignettes included to indicate the bidirectional influence of wellbeing of caregivers on children and vice-versa. Preliminary discussions accompany relevant sets of findings. This approach of presenting results and discussions side by side is quite uncommon. However, considering the diversity of the data and methods used, it was decided to introduce discussions at this early stage of reporting to unpack the inferences and meanings from specific findings throughout the presentation.

6.1 Results from children with ASD

The sample constituted of children with ASD from two SEN schools located in two large cities in the North West of England.

6.1.1 Baseline characteristics of children with ASD

The total sample of children with ASD considered in the statistical analysis included 26 children (21 males) aged between 8-13 years (Table 6.1). Gender disparity in the sample is clearly evident as 81 % of the sample constituted of males. All 26 participants were British citizens with 19/26 being white. Location 1 had a balance between the participants from white and black ethnicity. But, in the second location there were none with Black ethnicity. Most (24/26) understood English as their first language, with the remaining two being native Spanish speakers. Looking at the children's preferred mode of expression, at baseline it can be noted that around 62% of the population were verbal. Especially in location 2, most of the children used spoken language and the difference between their chronological age and verbal expressive language was negligible. Most of the children here presented greater difficulties in pragmatic language where the difficulty was limited to conversation initiation and maintenance. However, location 1 had many children who preferred non-verbal communication. These children used Makaton with simple content words or no words at all.

As per the ratings on the Childhood Autism Rating Scale (CARS) administered by the researcher, at baseline 7/26 were classed as having mild difficulties, 12/26 as having moderate and 7/26 as severe (Figure 6.1). The following criteria were to categorise: (i) mild if they required support and faced difficulties in social situations only; (ii) moderate if the children required substantial support and (iii) severe when children required very substantial support to carry out basic daily living tasks. Many children fell under the moderate category and there were equal numbers of children with mild and severe ASD. ASD severity of the children in location 1 was much higher than in location 2. Participants had no previous experience with DMP, but they had taken part in arts sessions as part of their school activities. They were neither familiar with the therapist nor the researcher who was the co-facilitator before the start of the sessions. Teaching assistants took part along with children. The number of teaching assistants and people varied according to their availability, school's schedule and participants' needs.

Table 6. 1 Descriptive statistics of the participants' (children with ASD) background characteristics

Demographic Variables		Location 1	Location 2	Total
Age (mean years) and range		11.53 (8-13)	9.77 (8-12)	10.65 (8-13)
Gender (n) F- Female M-Male		11M; 2F	10 M; 3 F	21M; 5F
Severity of ASD (n)	Mild <i>Requiring support-substantial support</i>	1	6	7
	Moderate <i>Requiring substantial support</i>	6	6	12
	Severe <i>Requiring very substantial support</i>	6	1	7
Preferred mode of expression (n)		4 Verbal. 9 Non-verbal	12 Verbal 1 Non-verbal	16 Verbal. 10 Non-verbal
Ethnicity (n)	White	6	13	19
	Black	7	-	7
	Asian and Others	-	-	-
First Language		English-11 Spanish -2	English-13	English-24 Spanish-2
70% attendance		12	11	23

6.1.2 Quantitative results (Children)

Strengths and Difficulties Questionnaire (SDQ) and Social Communication Questionnaire (SCQ) were the two outcome measures used for measuring the impact of DMP intervention on children with ASD. Means and standard deviation for SCQ and SDQ scores pre- and post-intervention before and following crossover, separated by DMP intervention and control groups is shown in Table 6.2. Across all groups the average SCQ scores were higher than the SCQ cut-off score (i.e. mean SCQ > 15). Similarly, mean scores for the total SDQ score were three times higher (i.e. 18.31 at pre-intervention across all participants) than the normative data of typically developing children in Britain i.e. mean=6.6, SD=6.0 (Meltzer et al., 2003). Results from the one-way Analysis of Variance (ANOVA) which was conducted to check if the baseline scores of both the groups were similar, revealed no significant difference in either SCQ or SDQ scores at pre-intervention between DMP intervention and control groups ($p>0.05$).

Table 6. 2 Means and standard deviations (bracketed) for SCQ and SDQ scores pre- and post-intervention by group and intervention and as total.

Tests	Groups	DMP intervention (A)		Standard Care (B)	
		Pre-intervention	Post-intervention	Pre-intervention	Post-intervention
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
SCQ score	Group 1 (A-B)	19.30 (3.16) ¹	17.50 (3.89)	17.20(4.87)	17.00 (4.76)
	Group 2 (B-A)	17.81(4.41)	16.19 (4.72)	18.00 (4.59)	17.94 (4.31)
	Total	18.55 (3.78)	16.84 (4.30)	17.60 (4.73)	17.47(4.53)
SDQ score	Group 1 (A-B)	18.60 (4.03)	16.90 (4.07)	17.20 (4.10)	16.50 (4.10)
	Group 2 (B-A)	17.56 (3.09)	15.19 (4.32)	16.94 (3.64)	16.75 (3.92)
	Total	18.08 (3.56)	16.04 (4.19)	17.07 (3.87)	16.62 (4.01)

[SCQ = Social Communication Questionnaire; SDQ = Strengths and Difficulties Questionnaire; SD = Standard Deviation; DMP intervention (A) = Dance Movement Psychotherapy Intervention; Control condition (B) = Standard Care]

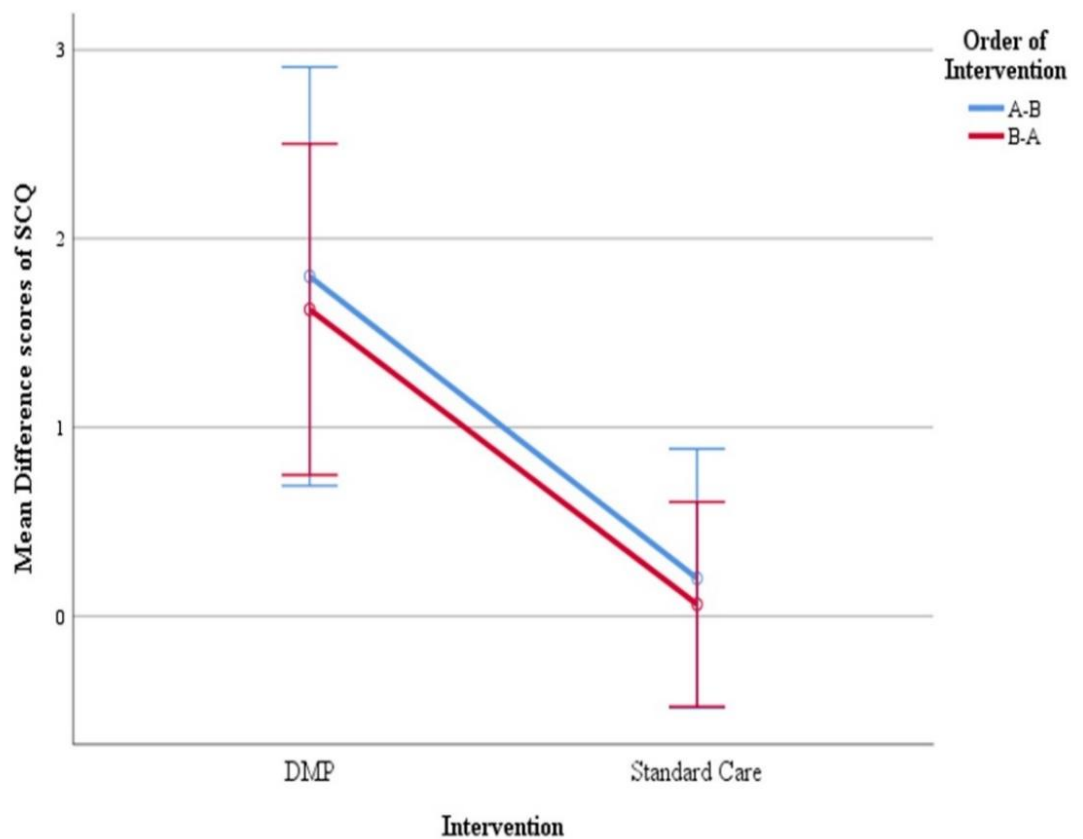
¹Note that scores shaded grey represent the data set before crossover was applied (Period 1).

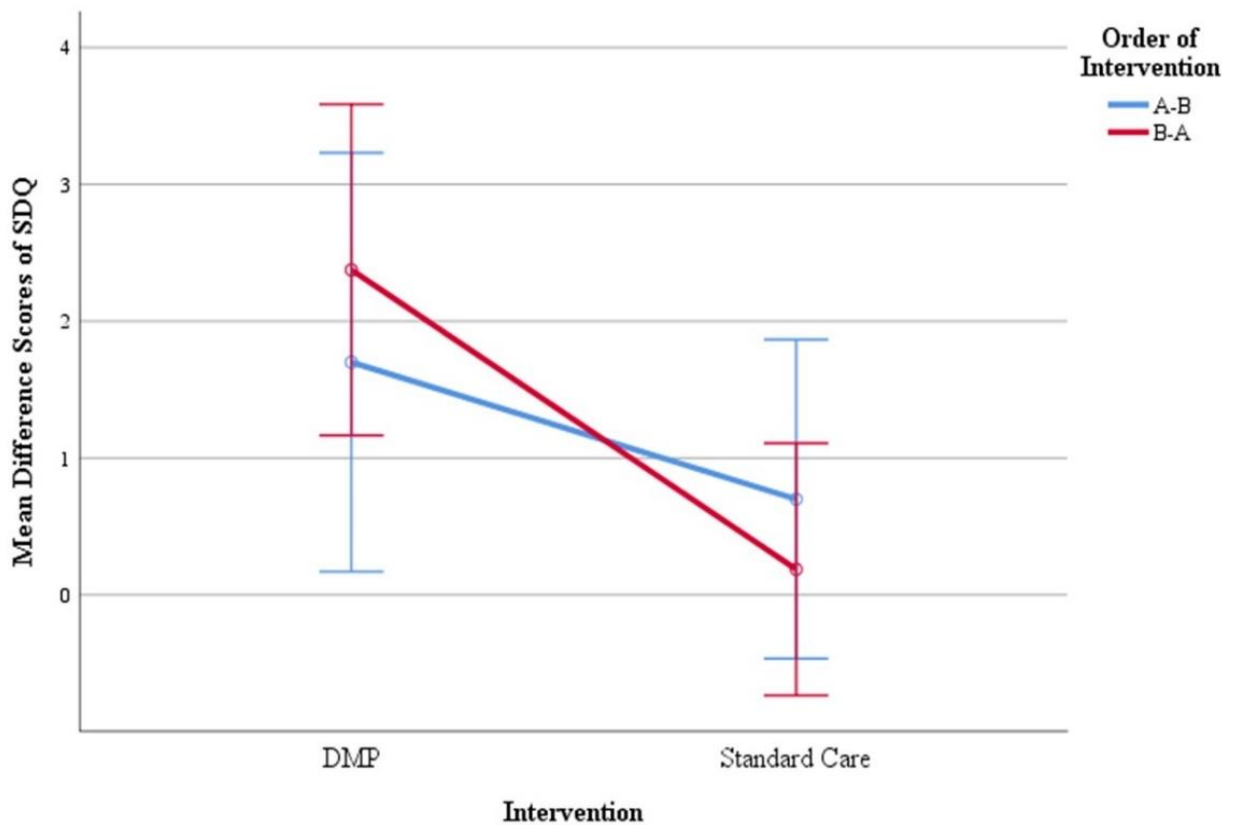
Results from the 2-sample t-tests performed to determine significant carryover, intervention and period effects for the crossover design showed no significant carryover or period effects for either the SCQ or SDQ ($P>0.05$). A significant intervention effect was found for SCQ ($t_{24} = 3.067$, $P=0.005$). The mean difference in intervention effect was 2.25 (95% CI: 0.74, 3.76). No significant intervention effect was found for SDQ; however, this was close to the boundary of significance ($t_{24} = 1.895$, $P=0.07$). The mean difference in intervention effect for SDQ was 1.96 (95% CI: -0.17, 4.10).

Findings from the Analysis of Covariance (ANCOVA) with mode of expression (verbal v/s non-verbal) as a covariate showed significant differences in SCQ between DMP intervention and control groups before crossover was applied ($F_{1,21}=15.715$, $P=0.001$, $\eta^2 = 0.002$, Cohen's $d = 0.09$). Specifically, those in the DMP intervention group presented lower SCQ scores following the intervention period than those in the control group (standard care). Results showed no significant difference in post-intervention SDQ scores between DMP intervention and control groups before the crossover design ($F_{1,21}=1.853$, $P=0.2$, $\eta^2 = 0.0001$, Cohen's $d = 0.02$). Mode of expression and the interaction term group*mode of expression were not significant in the ANCOVA model for either SCQ or SDQ ($P>0.05$). Although, the results from the ANCOVAs showed that the DMP intervention was having a significantly greater effect than standard care on SCQ scores but not on SDQ scores, the Minimal Clinically Important Differences (MCIDs) indicated that the intervention was achieving the MCID, as assessed between pre- and post-measures, for both SCQ and SDQ outcomes for those taking part in the DMP intervention but not the standard care (control group). MCIDs were calculated for SCQ and SDQ scores *before* crossover. Results showed that for SCQ the mean difference between pre- and post-intervention score was greater than the MCID (0.816) for the DMP intervention group (i.e. $1.8 > 0.816$), but not for the control group (i.e. $0.06 < 0.816$). Similar results were found for SDQ scores with the mean difference in pre- and post-intervention SDQ score being greater than the MCID (0.762) for the DMP intervention (i.e. $1.7 > 0.762$) but not the control condition (i.e. $0.19 < 0.762$). These results suggest that whilst the difference in post-intervention scores for SCQ and SDQ between DMP intervention and control groups was not significant, the mean difference in pre- and post-intervention scores for the DMP intervention but not the control condition achieved the MCID for a small effect size.

Results from the repeated measures ANOVAs which were performed on the total data set *after* crossover show that the change in pre- and post-intervention SCQ scores

differed significantly between DMP intervention and control groups ($F_{1,24} = 13.891$, $P=0.001$, $\eta^2 = 0.367$, Cohen's $d = 1.523$). Those in the DMP intervention group showed a significantly greater change in SCQ scores than those receiving standard care (i.e. 1.69 versus 0.12, respectively). The effect of the intervention on change in scores did not differ between the order (i.e. A then B / B then A) in which the interventions were received ($p>0.05$). Results also showed that the change in pre- and post-intervention SDQ scores differed between interventions ($F_{1,24} = 7.963$, $P=0.009$, $\eta^2 = 0.241$, Cohen's $d = 1.127$); specifically, those in the DMP intervention group showed a significantly greater change in SDQ score than those receiving the standard care (i.e. 2.12 versus 0.38, respectively). The effect of intervention condition on the change in SDQ score did not differ between the order in which interventions were received ($P>0.05$). Figures 6. 2 a & b present line graphs showing the mean difference in pre- and post-intervention scores for SCQ (Figure 6.1a) and for SDQ (Figure 6.1b), separated by the order of interventions received. It is evident from the figures 6. 1 a & b that the mean differences between pre and post scores are greater when the participants received DMP intervention. So, the lines going downwards indicate that the mean differences between pre and post-test scores were smaller when no DMP intervention was given.





The blue line represents the order of interventions A (DMP intervention) then B (standard care) and the red line represents the order of intervention B then A. Blue and red vertical lines, parallel to Y axis, represent error bars with 95% confidence intervals.

Figure 6. 1 Mean difference in pre- and post- intervention scores for SCQ (a) and SDQ (b), separated by the order of interventions received.

6.1.3 Preliminary discussion on quantitative results (Children)

Quantitative Research Question 1: What is the contribution of DMP practice towards the development of wellbeing of children on the autism spectrum?

This section discusses the research question on the effects of DMP on the wellbeing of children with ASD. As indicated in the literature, the strengths and struggles of children with ASD are unique (Mottron, 2017) and this DMP-based study was designed to work with existing strengths to promote their wellbeing. This study was piloted to evaluate the impact of the DMP intervention protocol described earlier in chapter five on social, communication and overall psychological wellbeing of children with ASD after ten DMP

sessions using a crossover research design. Minimal clinically important differences (MCID) were achieved *before* crossover for both outcome measures used in the study i.e. social communication questionnaire (SCQ) and strengths and difficulties questionnaire (SDQ) in the DMP intervention group. Differences in post-intervention measures for SCQ but not SDQ were significantly higher for those in the DMP intervention compared to the control group. Following the application of the crossover design however, results did show that the change in SCQ and SDQ scores from pre- to post-intervention were significantly greater in the DMP intervention group than controls. Overall, the results show that the DMP intervention was having a clinically and statistically significant effect on the key outcome measures used in the study with stronger effects on social and communication aspects.

Findings reveal that from a parents' perspective (assessed using the Social Communication Questionnaire; SCQ) children have gained from the short-term DMP intervention on social and communication abilities, when controlling for the child's preferred mode of communication. Similarly, improvements were observed from the teacher's perspective, as assessed by the SDQ, which is a measure of emotional, conduct, hyperactivity, peer relationships and pro-social behaviour also when controlling for the child's preferred mode of communication. This reflects that regardless of the heterogenous spectrum of abilities presented by children with ASD, DMP has been successful to further social and communication aspects of the children within a short period. This is likely because the non-verbal elements promoted in DMP cannot only enhance non-verbal expressions but can facilitate verbal communication as well. The results are coherent with the notion that the creative arts, in general, encourage social communication, which may otherwise be impeded by sensory, motor and social difficulties (Sharda et al., 2018).

Theoretically, DMP for individuals with ASD has been extensively informed from theories of intersubjectivity and embodied simulation theories (Hildebrandt, Koch & Fuchs, 2016). Trevarthen and Delafield-Butt (2013) argue that variations in body movements, motor control and processing sensorimotor information influence affective engagement and emotional regulation. A dysregulation of emotional perception and expression may often manifest as peculiar behaviours, anger, aggression, depression, anxiety, self-stimulation or even as self-injurious behaviours (Mazefsky & White, 2014). Subsequently, people in general find it difficult to understand and respond to their exaggerated or understated expressions. Thus, emotional dysregulation can turn into a

barrier for relationships and communication between individuals with ASD and others. It might be possible that DMP could have provided opportunities for children to engage affectively in these sessions enabling emotional regulation and opportunities to communicate with others. These findings are in line with the outputs of the earlier studies included in the systematic review (Samaritter, 2015; Chiang et al., 2016; Athanasiadou and Karkou, 2017; Devereaux, 2017).

Neurobiologically, researchers have noticed that participation in the arts would engage a multimodal network of brain regions with increased functional connectivity among bilateral primary sensory cortex, subcortical and motor regions (Hyde, et al., 2009; Nair et al., 2013) and lowered over-connectivity between sensory-association areas (Rudie & Dapretto, 2013). Recently studies in music therapy for children with ASD supported the association between bottom-up integration of sensorimotor brain networks and improvement in social functioning after 8-12 weeks of music therapy (Sharda et al., 2018; Janzen & Thaut, 2018). Although, a direct connection between the effects of DMP interventions and changes in the brain has not yet been demonstrated, considering the similarities of music therapy and DMP, a similar impact can be assumed after DMP intervention. However, these assumptions need to be substantiated with evidence in future DMP studies to understand the neural mechanisms that might be contributing to the improvements in SCQ and SDQ measures observed in the children following the DMP intervention.

To sum up, the DMP intervention has had a positive impact on social, communication and overall psychological wellbeing of children with ASD as measured on SCQ and SDQ, with greater and consistent impact on SCQ scores.

6.1.4 Qualitative findings (Children)

Qualitative data of children from five clusters across ten sessions were considered for the qualitative analysis. The number of participants in every session varied; ranging from maximum six to just two participants. The data for the analysis largely included retrospective video observations, therapist's reflections and very little from semi-structured interviews of children. The themes that emerged were coded at different levels after examining the excerpts of fifty DMP sessions. The focus of the analysis revolved around exploring the views of the therapist, researcher and participants on the contribution of DMP towards wellbeing. The themes were categorised under three main categories: **Individual Transformation Process** (five sub-themes); **Group**

Transformation Process (six sub-themes); **Overall process and outcomes of DMP** (seven sub-themes). All the themes are described in detail in the following sections.

6.1.4.1 Individual transformation process

This theme focused on how the changes were observed in children, individually across the period of time. As mentioned in the baseline characteristics, the participants presented a variety of abilities. In addition, each child in this heterogenous group responded differently during the process. As show in figure 6.2 five distinct states emerged during the data analysis. Some common observable behaviours and actions were coded for each category. In figure 6.2 the upward pointing triangle represents the growth in the existential experience of the participants closer to the state of wellbeing while the inverted dotted triangle shows the declining trend. The central dotted axis signifies the balance between the two trends. The stages or state of being categorised under five sub-themes were not fixed or permanent. Hence, a zigzag pattern was used to show the dynamic nature of this process in figure 6.2. The space in between the stages to positively make a shift from one state to another were noted as the key phases of transformation in children. These positive shifts in the state of their being are shown as the firm blue lines climbing upwards in the zigzag pattern and the dotted line are the undesirable decline. Over the ten sessions, it was noticed that some children had taken a drastic jump from their baseline state to another and had started showing consistency in their growth. The progression was non-linear. In many instances the changes observed were transient as these children showed exponential sudden profoundness in their responses and vice versa. This varied according to the context. The fluctuations with climbing upwards and plunging back patterns after a momentary shift in the state of being were common. However, those momentarily experiences were also significant during the process as many such temporary experiences were assumed to be important to integrate and enduringly setup to the next phase in addition to learn to cope and revert back from fall. In the following sections the phases of transformation are described with references to key observations and responses of the children. Revelations made by the participants are quoted with abbreviations such as C (number) for children, R (session number) for researcher and D (session number) for dance movement psychotherapist.

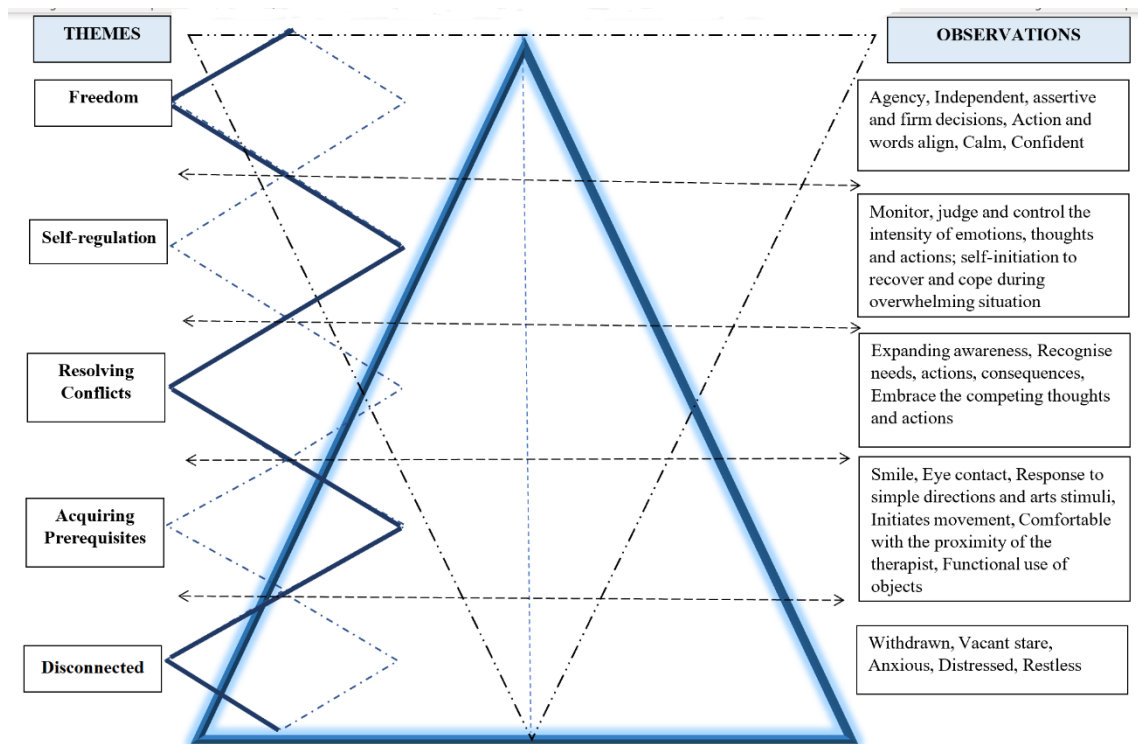


Figure 6. 2 Themes related to individual transformation process

a. *Disconnected to acquiring prerequisites*: One of the patterns of transformation was noticed from the state of being disconnected to a state where children showed some basic awareness of their existence in the space. The code *disconnected* was used when children appeared preoccupied, withdrawn, stared vacantly, anxious, distressed, restless and lost in their own world without being aware of the surrounding. Two children from cluster 1 and 2 each (C3, C5, C7, C8,) and one child from cluster 3 (C13) were predominantly in their own bubble. Their movement qualities generally lacked the component of weight with direct gaze, sudden and bound movement patterns. These children recognising their body, presence of other people with responses such as smile, eye contact and following simple directions were significant qualities of transformation into the next phase of prerequisite behaviours. For instance, C3 was one of the participants from cluster 1. The researcher described the experience of moving with him felt like “*gusty whirlpool gliding across the space*” (R2). This boy who was restless ran across the periphery of the room in the initial few sessions. Any object around him including his palm went into his mouth. As per therapist’s observations “*I have noticed C3 is doing constant sucking rhythm with his mouth. He is very much at that very early developmental stage*” (D3). By the 6th session, he started recognising his own body and the therapist. This was evident when he prompted the therapist to continue stroking his legs with a feather. In the final session, he calmly laid down in the centre of the room. He joined the circle with the rest of the group

and involved in the clay moulding without swallowing the material. The therapist with a pleasant tone of surprise said “*We have seen a big change today. Such a drastic difference. C3 was in one place, relaxed, humming and calm*”(D10).

b. *Acquiring Prerequisites to Resolving Conflicts*: Another pattern of transformation that was observed among the participants was from the fundamental state of being to a stage where they were seen to be expanding their awareness, recognising needs, actions, consequences, differences in the competing thoughts and actions. The children at this stage, appeared to be recognising and addressing their opposing demands, impulses and aggression. This pattern was observed in one child across all the clusters at some point of time during DMP sessions (C1, C9, C11, C14, C20). Movement qualities were generally shifting from attacking qualities such as sharpness, heavy and sudden to gentle, light and sustained. For instance, a boy from cluster 2 (C9) who participated in the first two sessions with enthusiasm and involvement, started demonstrating his power over the researcher. He always wanted to move being a lion and attack the researcher; who was smaller to him in appearance. Initially it was playful. Eventually, his playful movements manifested as a bully with unsafe aggression towards the end of 6th session. The researcher, along with the intervention of the therapist used several props as a shield and confronted his way of testing boundaries, strength and the different sorts of consequences which manifested louder than his fears. Towards the end of 9th session, he still wanted to be moving as a lion but the props used by the researcher had turned into his cubs (coloured bean bags) where he was found cuddling and caressing them saying “*my red baby, blue baby...*”(C9).

c. *Resolving Conflicts to Self-regulation*: This was the phase in which most of the children from location 2 and couple of children from location 1 were oscillating between. This phase appeared to be highly volatile as transformation shown in one context was not usually transferred or generalised to other contexts. Movement patterns and expressions were from two extreme polarities. The fluctuations were observed in terms of their mood and energy levels, which at some point would simply getting amplified, magnified and even distorted at or the vice versa. The therapist described such sudden surge of high voltage during sessions as “*difficult to contain*” (D 5, 6, 10). Hence the sessions encouraged the children to monitor, judge and regulate the intensity of emotions, thoughts and actions. These were introduced through movement-based explorations during the sessions and children were successfully able to monitor, articulate the emotions, thoughts and prevent the tendency towards extreme overwhelming situations in some occasions.

However, self-initiation to recover and cope during overwhelming situations were noticed in very few children in certain occasions.

For instance, most of children from cluster 4 and 5 were consistently able to introspect, express through movements and add words to articulate their thoughts, sensations, emotions and feelings. C15 articulated and showed that he was experiencing tingling sensations through wavy movements of a stretch cloth, C16 depicted that she was feeling highly energised by bouncing the bean bags up high to hit the ceiling, C19 expanded the stretch cloth to its maximum capacity and lifted it high to show the intensity of anxiety he was experiencing. Some of them were even able to judge and express whether they wanted to continue feeling the same way or wanted to bring in any change and what could potentially be done to bring in the change. C18 expressed he wanted to be in solitude for some time, C21 pointed to a feather as his “*magic wand*” which could sooth and calm him down. C14 who could not regulate the frequent utterance of the word “*Pikachu*” in the initial few sessions, managed to regulate the repetition towards the end of 8th session. The frequency of repeated utterance from 30-40 times per session had come down to just 2 -4 times in the last three sessions.

d. Self-regulation to freedom

This pattern of transformation was observed only in a couple of children from cluster 3 and 5 (C16, C10). They displayed clarity and maturity in their expressions where their actions and intentions aligned with each other. Unlike this, C19 who was able to monitor his emotional fluctuations and express what he was experiencing was not always able to cope with the intensity of his emotional expressions. C19 was very affectionate and was overly attached to the group from the beginning. However, it appeared that the anxiety of the sessions coming to an end deflected as anger and it manifested as fights between the participants who had built a strong bond. In sessions 9 and 10, C19 yelled and slandered at the therapist, researcher and one of the participants (C16). The therapist said “*I wonder about his family situation. He wants to kill everyone. We need more time. It’s not something to be dealt within ten sessions*” (D10). C16 however, reported that she was shattered by his outburst of anger towards her and expressed that she was left puzzled. She kept asking “*What wrong have I done? Why is he angry at me?*” (C16). In the last session, she took a step towards moving away from “*why me?*” to understanding the perspective of the other end. She expressed that she was hurt and took initiative to cope and come out of it without holding back or deflecting the pain through unhelpful channels. She drew a growing flower with rain, sunshine and rainbow and said “*it is getting*

stronger and it is well protected by the rainbow”(C16). Later she enacted the story of the flower and even depicted movements of how the flower would sustain when there is a storm.

6.1.4.2 Group transformation process

This second theme revolved around how individuals who were part of a group interacted, influenced each other and transformed as a group during the sessions. The theme captured keeping the five clusters as the frame of reference. But attention was given to how each child in the cluster contributed to the group process. Two main themes and six sub-themes emerged during the data analysis: **Intrapersonal and Interpersonal**. It was observed that both the themes had bidirectional influence and cyclical in nature. These themes were depicted as a spiral diagram (See Figure 6.3) with six nodes or numbers representing sub-themes. The double-sided arrows in Figure 6.3 show that each individual offered something to the group process based on their individualistic nature and received in return. This continuous exchange of information was thus interpreted as the significant part of the process of change.

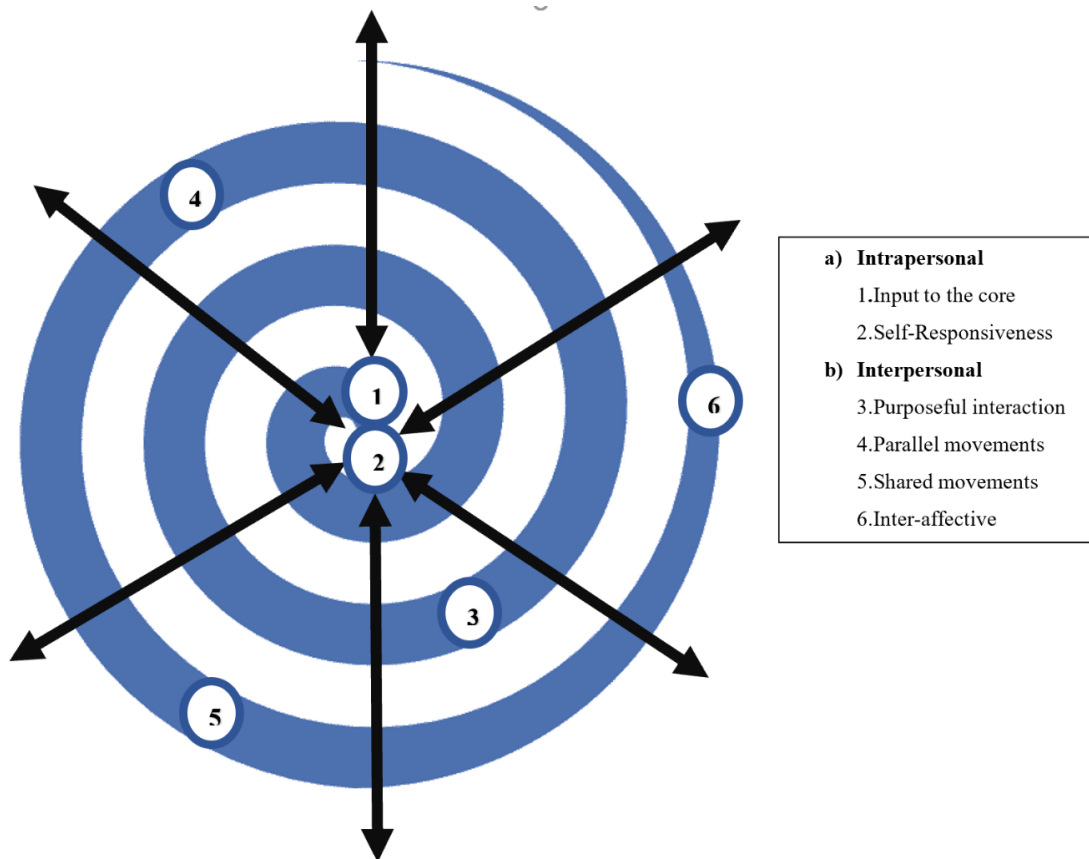


Figure 6. 3 Themes related to group transformation process

The therapist's movement and verbal responses, recalling her journey with cluster 1 from group transformation point of view, was interpreted with a metaphor of a spider creating a web. Her movement and verbal responses displayed that the group transformation occurred very gradually where she had to pull different strings and join them all in together. She represented herself as the first strong bridge line which was laid across the top. Referring to some children as anchor points, she added frame threads. She said "*I had to change different directions up far and out of reach. The direction was bit unclear and did not know which way to go with it. The middle of the process had sort of more flow but felt a bit stretched, extended beyond the comfort zone from place to place. And it was like fuuuuu (a deep sigh) draining!*" By the 5th session, radii were then fixed to the central hub as children were gravitating to the centre from the periphery. She constantly checked every angle to ensure there were enough spokes. An auxiliary spiral was then laid down from the centre outwards by largely using a shared large prop which was not sticky but acted as the framework. After reaching this point the therapist took a short breather and observed that the central hub was formed and replaced with a few neat strands. By 7th session her response was "*towards the end it was sort of graceful, controlled and evenly distributed. After bringing together, feeling like able to contain*". Contrastingly, for cluster 5 she reported, "*Not much effort was required in the beginning. They bonded really well. I think from the day (7th session) we shifted to this smaller room, they started fighting for space and at last fell apart. See (pointing to the signing off calendar) could not contain them in the end*" D(10).

a) Intrapersonal

This main theme consisted of responses where children were observed to be getting in touch with their own self. It had two sub-themes.

Input to the core

The inner most layer of the spiral in Figure 6.3 shows how personal movement experience formed the core part of the group process. Even if there was only one stimulus the participants perceived it differently depending on the abilities, previous experience and many other factors. However, getting in touch with the 'self' was observed to be different in children during the sessions. This was the state of being aware of one's own body movements in the environment. Some children responded to auditory and visual stimuli. However, most of them asked for tactile and proprioceptive stimuli. For instance C2 wanted the music to be constantly louder, C3, C17, C19 expressed desire to stroke

their bodies with different props. Most of the children frequently wanted to be wrapped tight with the stretch cloth and do rocking movements. *“I love it”*; *“I want to go next”* were some of the responses from children to express their interest.

Self-Responsiveness

This theme captured how differently the participants reacted to the DMP environment and contributed to the group. The mode in which the children expressed their reactions and the intensity in which they expressed determined the impact on the rest of the participants. For example, the responses from C4, C5, C9, C13, C15, C16 and C19 were enlarged, exaggerated and captivated the therapist’s attention very frequently. Although not explicitly, their reactions were leading the course of action of the rest of the group. If anyone of them has had a bad day or a meltdown with an uncontrolled emotional outburst before the session, the whole group used to get impacted through it. There were participants whose expressions were subtle and yet contributed to the group significantly. Their role appeared to be significant in binding the loose ends of the group together. For instance the therapist identified C5 as the *“anchor”* of the group while C13 was described as the *“magnet”* to bring the rest of the group concentrated at one point. C15’s flamenco dance step and acrobatic movements attracted the spotlight. An example of subtle response is C14’s soft and gentle movements in between highly energised movements which were helpful for settling the group.

b) Interpersonal

This theme focused on the relational coordination between the therapist and participants and also among the participants. This was further divided into four sub-themes.

Functional interactions

This was the theme where the interaction between participants and therapist happened only when the children wanted something from the therapist. C2 initiated an interaction with the therapist only when she wanted the music to be louder or to change the music track from slow tempo to highly charged music. The therapist said *“she exactly knows whom to ask and who holds the control. She could have gone to the TA. But, she dragged me to the speaker” (D2)*.

Parallel movements

These were the movements although relational, happened in two different planes and did not intersect at any point. This pattern of interaction was seen predominantly in cluster 4

where the participants competed with each other. If C13 performed two skilful movements, C14 would do four. Both of them sought full attention all the time. The therapist after the session 3 said *“these two split me into halves”* (D3).

Shared movements

This pattern of interaction was noticed among the participants when they were ready to share the props and space to create a movement with equal contribution. This theme was seen frequently after 5th session in cluster 1, 2, 3 and 4. However, cluster 5 was exactly the opposite. Some of the participants were ready to assimilate some movements from the other moving partners. They were able to recognise the movement patterns and manipulate those patterns to respond to the moving partner. For instance, C13 and C14 who were competing in the early sessions, by 7th session were ready to take turns to wear the duck-faced cap and mirror each other. The therapist noticed that *“C13 and C14 were cooperative and coordinated in their movements today”* (D7).

Inter-affective movements

This theme largely emerged when children were able to connect and relate to the emotions expressed by their parents. The children were observed to be developing to share common emotions, identify differences if they did not match, understand the position of the others and opened up for new possibilities of meaningful social interactions. This was observed to be developing largely in cluster 5 and 4. The participants in clusters 2 and 3 had reached a point where they were able to identify their own emotions and express using binary or multiple choice questions. For example, when asked to stand on yellow block if they were happy and blue if were feeling low, some children were able to introspect and indicate their state of being. Referring to C10, the therapist on 6th session mentioned *“ I knew he would choose blue. I could sense he wasn’t feeling that great today”* (D6).

6.1.4.3 Overall DMP process and outcomes

Based on the combination of certain changes noticed in children individually and as part of a group, seven outcomes of the overall process were abridged. This entire process was illustrated using the concept of a prism as a metaphor (Figure 6.4). DMP intervention was depicted as white light passing through prisms (children). As a combination of individual (fig 6.2) and group transformations (fig 6.3) described earlier, white light (DMP) passing from the air into glass, slowed down. Later, when it left the glass, it speeded up again and

underwent refraction into a spectrum of colours (outcomes). Although DMP intervention was a common input that was offered to children, depending on their diverse innate abilities and their group factors, a spectrum of were observed outcomes (VIBGYOR-derived from colours of the spectrum and the outcomes reflect the initials of the colours of the spectrum).

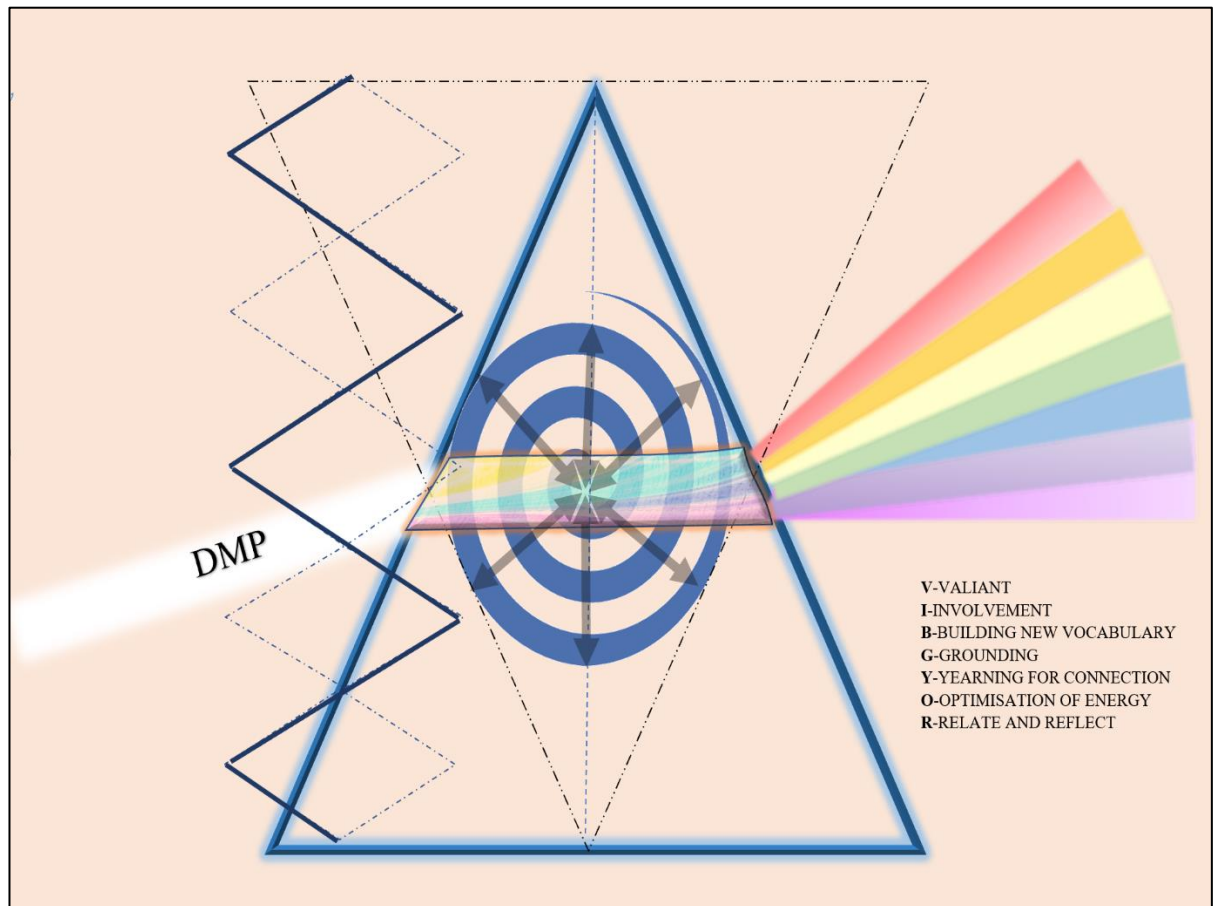


Figure 6. 4 Themes related to overall layered process and outcome

Valiant

It was observed that as DMP provided a safe place, children made valiant effort to step out of their comfort zone, confront their insecurities and tackle their fears. The therapist noted many courageous moments during the sessions such as C1 who used to hide under the table, volunteered to join the group; C5 who was frightened by the bursting sound of the balloon, came forward to play with it again; C13 breaking his strict routine to join the sessions, C22 trying to jump by leaving the ground are some examples where children took some risks. *“When TA offered him the balloon he moved away. It was fascinating to see how C5 gathered his courage step by step to pop the bubbles first and then play with the balloon” (D2).*

Involvement

Involvement of the children during the sessions was seen to be getting better during the sessions. Children from cluster 1 and 2, gradually showed increment in joint engagement and collaboration. Cluster 3, 4 and 5 participated in the movement explorations and involved themselves with full energy and enthusiasm. Increase in reciprocal engagement and involvement in their classes more than usual after returning from DMP sessions were reported by the class teachers and TAs. “C4 is now looking at the props and trying to manipulate the objects” (D5).

Building new vocabulary

Expansion of verbal and non-verbal vocabulary was very eminently visible. Children who preferred non-verbal communication were observed to be humming, vocalising more when their body movements were relaxed and free flowing. Frequency of meaningful usage of words and control in echolalia and repetitive use of words were observed in children from cluster 4 and 5. In these two clusters, ability to create an imaginative story and narrate it along with movements incorporating emotionally loaded words was something significant. C18 described giving greater detail to the sensations and what it meant to him and his imaginary characters. The therapist and the researcher felt his insight and choice of words were “*deep and kind*” (D & R 6).

Grounding

Children expressed that they enjoyed different types of sensory stimulation. It was observed that multi-sensory materials were able to hold them in the present moment without letting them to drift away into their zones. Especially after high intensity movement activities children from cluster 3, 4 and 5 wanted to lie-down and they were able to focus internally. The therapist noticed that the children were “*less agitated*” (D3,5) towards the end of the sessions.

Yearning for connection

Across the clusters, regardless of their verbal capacity children were seeking for connections and were trying to accept in close proximity. For instance C1 hiding under table and playing peekaboo was described by the therapist as “*It was like she was testing if she could step into cold water. Trying to acclimatise starting from the tip of the toe*” (D2). Similarly in cluster 5, children wanting to make friends and difficulties to detach during the last few session were evident.

Optimisation of energy

It was observed that children were able to regulate, channelize their high energy and maintain personal boundaries. Children in cluster 3 and 4 generally crossed personal boundaries and sometimes would turn violent unintentionally. These children wanted to play a movement-based game, the Wolf's dinner time in almost every session as they could run, rush, scream loud in excitement when the Wolf hunts for dinner. This game was improvised by introducing an additional task to balance a bean bag on their head and make sure it would not hit the ground. Balancing an object was something impossible in the beginning, however after four sessions it was gradually regulated and manageable. They were then able to divert their competitive and spirited energy into creative and gentle tasks. Initially, the therapist was apprehensive by questioning "*is it calm before the storm?*" (D6). However, they proved it wrong by consistently optimising their energy.

Relate and Reflect

The therapist identified that children were able to engage in imaginative play and were able to improvise movements associating with different emotions, identify and relate to the emotions through movements. In the last session, children from cluster 5,4, and 2 were able to recall their feelings and emotions from the past nine session, identify the emoji for how they felt, enact them as movements and accurately name what was enacted by others. The participants from cluster 5 and 4 had developed emotional accessibility and a wide range of vocabulary to reflect and relate to different movement experiences of their own with others. A couple of children were able to reflect and articulate some secondary feelings and emotions such as "*anxious, hurt, bored, confused, amused*" (C16, C19, C20, C22).

6.1.5 Arts-based findings (Children)

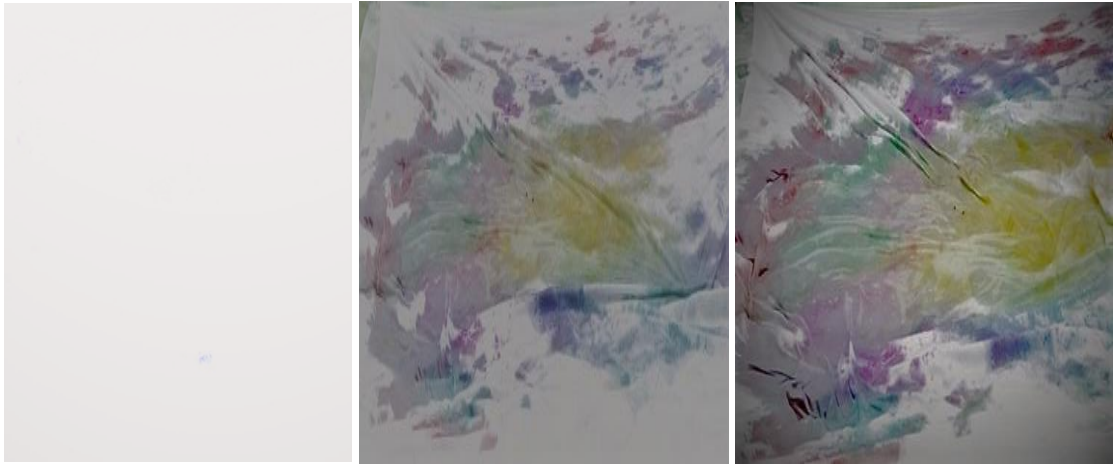
Based on the movement experiences during the work with children on the autism spectrum a dance piece was choreographed by the researcher. The artistic responses were considered to explore and understand the preverbal stages of the therapeutic process using free associations (Walrond-Skinner, 1986) and attempts were made to find links with the significant moments of the session and achieve useful insights into the process.

The video can be accessed through this link : https://youtu.be/JCMItWHeP_0



Figure 6. 5. Screenshot of the arts-based results link (children)

In this dance, the gestures, movements and intricate footwork of Bharatanatyam vocabulary were used to retell the significant events and special moments of change that happened during DMP sessions with children on the autism spectrum. Here, children and therapists were represented using distinctive colours. As the dance progressed, the vibrance of each colour imprinted on the garment metaphorically symbolized how far children were able to move out of their own bubble and express themselves. The way the colours blended in response to the footwork and created various shades to form an art piece reveals the connections made during the DMP journey to create a *vivid social web*.



The beginning

The middle

The end

Figure 6. 6 A vivid social web

The complete description of the dance piece is as follows.

Video reference time points: 0.00-0.53

(Research question on movement responses of the researcher)

Entering a new world has been shown through the opening of the doors. This has been presented in the researcher's voice as "the beginning of a new journey where there is no defined path, everything is uncertain and hidden. As I step into the space of children with ASD, I notice their bubbles rotating and revolving among themselves".

As the DMP process began, the following *key moments of change* were noticed.

Video reference time points: 0.57-1.18

Uncertainty to certainty- Key moments when children were able to express their decisions assertively.

Video reference time points Chaos:1.20-1.52

Chaos to Stillness- Instants where there were quiet and relaxed moments after chaotic situations.

Video reference time points 1.52-2.17

Fear to Courage- Moments where children were able to overcome their hesitations and inhibitions to engage in the sessions.

Video reference time points 2.17-3.05

Tensed to Tender- Brief yet powerful moments where children showed the tender side of theirs.

Video reference time points 3.14-3.29

Repetition to Reciprocity- Moments where there were meaningful verbal conversations overpowering echolalia.

Video reference time points 3.09-3.54

A diverse jungle book- Key moments of interaction among the participants as a group created a dance of symphony with embodying several qualities of animals and birds such as lion, swan, dolphin, shark and deer to act to our strengths and express a range of emotions.

Video reference time points 3.54-5.08

(Research question on movement responses of the researcher)

“After being a part of the world of children with ASD, having experienced a palette of emotions, witnessed growth and transformation of the special ones, my response to the whole journey with movements embedded with a metaphor of the blooming flowers in creeper plants bougainvillea which are dependent; yet tough with varied colours and hues, provide shade and beauty. As a researcher, I am collecting pollen and nectar like a bee does to spread the beauty of the hidden strengths of the children by providing a peek into their world through the window of arts”.

6.1.6 Preliminary discussion on qualitative and arts-based findings (Children)

The qualitative and art-based analysis from the retrospective video analysis, responses from children, reflections of the therapist and researcher aimed to answer three questions

Qualitative research question (3)-What are the views of the therapist/s and participants on the contribution of DMP to wellbeing?

Arts-based question (1)-What are the key moments of change in the movement of children during the process of DMP as understood by the therapist/s?

Arts-based question (2)-What are the important movement responses of the researcher to the contribution of DMP to the wellbeing of children?

The qualitative thematic analysis revealed three major themes with eighteen sub-themes altogether. The themes highlight how personal movement experiences of the participants and the group processes combinedly contribute to the enhancement of social and emotional wellbeing that were observed as a product of DMP intervention. The artistic inquiry process identified six key moments of change. All these themes throw light on how diversity in a group adds on various layered dimensions to the outlook of the processes involved in DMP. Dynamic nature and interconnectedness in the processes depicted in the results show the non-linear nature and complexities associated while working with children on the autism spectrum with a range of abilities.

The theme on individual transformation process presented how DMP facilitated children to positively make a shift from one state to another in key phases of transformation to get close to the state of wellbeing. Based on the results it can be inferred that children built their resources during their journey in DMP which could have helped them to step up from one phase to another. In this context the meaning of resources from varied diversely starting from building prerequisites to internal coping for social and emotional wellbeing. The themes are in line with the definition of wellbeing by Dodge et al., (2012) which focuses on the state of equilibrium between resources and challenges.

Earlier studies in DMP have argued that the physical experiences gained through sensorimotor explorations and body contact promote body-image building and formation of a sense of 'self' (Athanasidou & Karkou, 2017; Devereaux, 2017; Scharoun et al., 2014). These qualitative and art-based studies have also noted changes in regulatory behaviours, use of better coping processes, ability to modify the intensity of emotional reactions, being more tolerant, able to accept demands on self-regulation. Findings presented in this study are in par with that the previous studies and suggests that DMP boosted the opportunities for the children at various stages of development to be able to *live* in their bodies and to feel confident about moving in space with body and spatial awareness. The observations made in this study tracing an expansion in the movement repertoire of some children, transition from preoccupied state to a state where they were able to actively engage in creative tasks, make eye contact and respond to simple directions substantiate the claim that DMP could have facilitated them to differentiate oneself from other objects and draw boundaries from self and other people.

In addition to individual processes, many group processes were also identified. Studies in the past have mostly considered individual and therapist-client relationship but not group processes. However, this study being a group DMP intervention, processes involved in group transformation were evident as everything that took place individually was happening in the total context of the group itself. "...Every event, even though apparently confined to one or two participants, in fact involves the group as a whole. Such events are part of a Gestalt-configuration, of which they constitute the *figures* (foreground), whereas the ground (background) is manifested in the rest of the group"(Foulkes, 1964.p. 110, cited after N. de Boer). So, what children offer to the group and what they take from the group becomes critical for the overall outcomes of a group intervention. The findings show that these processes were happening at inter and intra-personal levels. At first, the clusters of children from various backgrounds came together on certain terms. Initial interactions were only at a functional level. Later in the process, from, when they reflected (consciously or unconsciously) their feelings, opinions, emotions in their movement material, underneath the functional layer at an unconscious level the participants may have resonated to what was happening with competitiveness or synchronously to create some affective connections. The vivid combination of colours in the artistic inquiry process depict this in an abstract language.

Kinaesthetic reciprocities in psychotherapeutic interaction have been supported by many researchers in the past (Kestenberg-Amighi et al., 1999; Trevarthen & Aitken, 2001; Samaritter & Payne, 2017). In view of enactive social learning, it can be argued that these processes may add to the experiential ways in which children can experiment and co-regulate responsively to move with others. Amos (2013) claims that the embodied quality of these experiences might enable transfer to other interactional contexts outside of therapy (Amos, 2013). It is possible that the group movement experiences could have acclimatised and prepared some of the participants to be part of a wider social context.

Interaction between individual and group processes were combinedly noted as the overall outcomes of the therapeutic process. In the past many of the studies have described reduction in ASD symptoms as the outcome of an intervention. However, the present qualitative and arts-based strands of the study identified themes which were indicating increment of certain observable factors which were enabling the participants to get closer to the state of wellbeing. The seven outcomes were not all observed in all the participants. Although a common intervention protocol was implemented, a spectrum of outputs were evident. Building new vocabulary, involvement and optimisation of energy are some of

the outcomes which have been identified in the studies earlier (Scharoun et al., 2014; Athanasiadou & Karkou, 2017; Devereaux, 2017). DMP offers appropriate benefits to children, such as the opportunity to express and release aggression safely and without authoritarian reprisal (Payne, 2003; Parsons & Dubrow-Marshall, 2018). Apart from these, the current studied has identified certain themes which are different. For instance, yearning for connection is something that can be flagged up. Going by the meaning of the root word of Autism, 'autos' which means 'self' in Greek, the general perception about ASD is that children like to be in solitude or isolation. However, the findings of the study negates that strongly and argues that regardless of the ability to communicate verbally the children appeared to be seeking for connections in their own way. Dyer (2017) describes similar plaintive cry for friends in her heuristic dramatherapy study with ASD. So, DMP and dramatherapy might have offered them a creative space to explore and express their desire to connect, eyes and ears to be witnessed and heard in their own way.

Overall, the qualitative and arts-based findings support that DMP has triggered various internal and external processes to collectively manifest as helpful observable outcomes.

6.2 Results from caregivers

6.2.1 Baseline characteristics of caregivers of children with ASD

As mentioned in the inclusion criteria earlier, caregivers sample encompassed both SEN teachers and also parents of children with ASD from two different locations (Table 6.3). Total sample had 37 participants and their age ranged between 28-56 years (Mean=39.25 years). With regards to gender, there were more females than males in the sample. There were only six men out of 37 participants in the full sample. All the participants were British and the majority were from white ethnicity. Demographics on the marital status of the participants indicated that many of them were single parents. Many were also raising more than one child. One of the participants who was a single parent was raising four children and three of those children were attending SEN school. This was the only parent who was that different from the median number of children the caregivers of the sample had.

Table 6. 3 Descriptive statistics of the participants background characteristics in the DMP intervention and standard care groups, separated by teacher/parent status.

Variables		DMP Intervention		Standard Care	
		Teachers	Parents	Teachers	Parents
Centre	Location 1 (n)	4	5	4	4
	Location 2 (n)	5	6	5	4
Age (mean) and range		39.4 (32-56)	43.6 (36-51)	31.7 (28-40)	42.3 (33-48)
Gender (n) F- Female M-Male		9 F	9F, 2M	7F, 2 M	6F 2M
Ethnicity, (n)	White	9	9	8	3
	Black	-	2	1	5
	Asian and others	-	-	-	-
Marital Status (n)	Single parent	2	6	1	3
	Married	4	3	3	4
	Cohabiting	3	2	5	1
Number of children (median)		2	2	1	3
Age of their children/offspring (mean)		23.2	12.3	15.3	12.6
Number of children attending SEN (median)		-	2	1	1

6.2.2 Quantitative results (Caregivers)

The Adult Wellbeing Scale (AWS) and Parenting Stress Index-Short Form (PSI-SF) were the two outcome measures used for measuring the impact of DMP intervention on caregiver's wellbeing and parental stress. Means and standard deviation for AWS and PSI-SF scores pre-and post-intervention, separated by DMP intervention and control groups are shown in Table 6.4 and 6.5. Inspection of the mean scores in the tables show a decrease in AWS score and PSI-SF score between pre- and post-intervention time points for both those in the DMP intervention and those in the control condition. However, the change in scores for both the AWS and PSI-SF is notably greater for the DMP intervention group than the control group (Figure 6.7 and 6.8).

The mean scores of all the subsections of AWS were in the borderline range of AWS scoring scale before the intervention and a score above the borderline range would have indicated a problem clinically. As mentioned in the methodology chapter, for AWS when the raw scores for depression and inward directed irritability are above 6 and for anxiety, outward directed irritability are above 7 & 8 respectively, they indicate clinically elevated levels. Clinically elevated levels were not evident before the intervention for these sub-scales as shown in Table 6.4. Further inspection of table 6.4 shows that the scores of the subsections are showing a decreasing trend in the DMP intervention group. Similarly, with regards to the subsections of PSI-SF (Table 6.5), all three subsections, were in the higher range at the baseline and have shown a downward trend after DMP. However, the mean of parental distress raw scores were below the cut off score indicating that there were not clinically elevated levels of parental distress. The mean of difficult child raw scores were close to the cut off score 33. But the mean score for the parent child dysfunctional interaction was slightly above the cut off score (27) implying clinical significance.

Table 6. 4 Descriptive statistics, including means and standard deviations (bracketed), for the Adult Wellbeing Scale scores

Adult Wellbeing Scale	Caregivers (DMP) (N=20)		Caregivers (Standard care) (N=17)	
	Pre	Post	Pre	Post
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Depression	5.05(2.18)	4.30(2.38)	4.53(2.85)	4.47(2.7)
Anxiety	6.10(2.88)	5.00(2.75)	5.12(2.44)	5.18(2.0)
Outward Directed Irritability	3.00 (1.71)	2.85(1.69)	2.94(1.24)	3.00(1.54)
Inward Directed Irritability	2.25(1.51)	1.70(1.30)	1.29(1.35)	1.53(1.23)
Total	16.40(6.23)	14.00(6.08)	14.24(6.06)	14.12(5.37)

Note: Total score as well as scores for the four sub-sections of the scale are shown, separating DMP intervention and standard care groups.

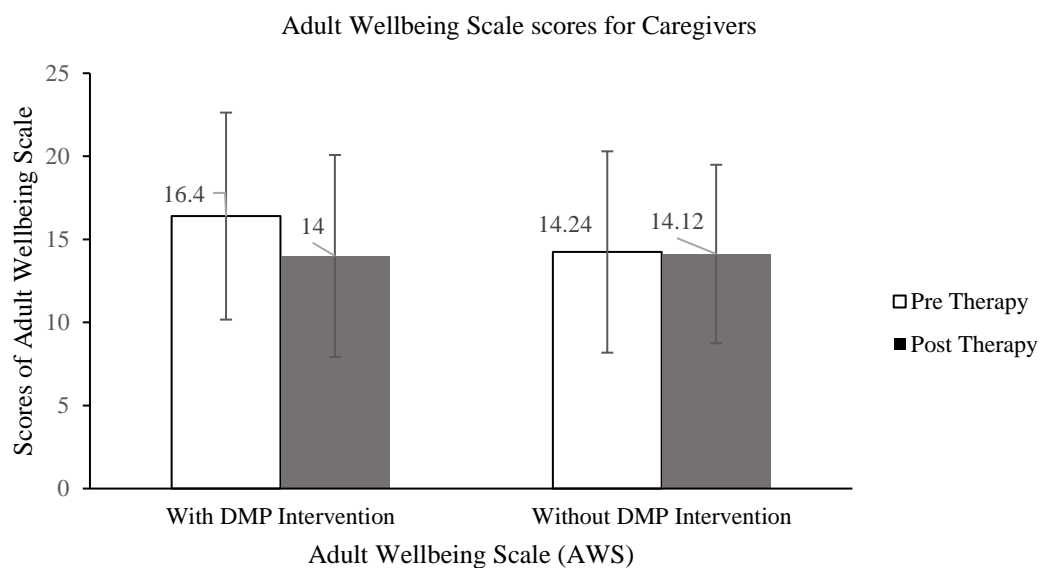


Figure 6. 7 Adult wellbeing total scores for caregivers

Table 6. 5 Descriptive statistics of Parenting Stress Index- Short Form (PSI-SF)

PSI-SF	Parents (Experimental) (N= 4)		Parents (Control) (N=4)	
	Pre	Post	Pre	Post
	Mean (S.D)	Mean (S.D)	Mean (S.D)	Mean (S.D)
Parental Distress	33.50 (2.88)	30.25 (6.60)	37.75 (10.53)	36.5(9.11)
Parent Child Dysfunctional Interaction	30.00(4.54)	25.00(3.83)	33.75 (7.08)	33.5(6.13)
Difficult Child	39.75(10.14)	34.50(10.66)	43.00(3.19)	40.75(4.85)
Total Stress Score	108.25(15.86)	89.75(9.87)	114.50(17.91)	111.5(15.71)

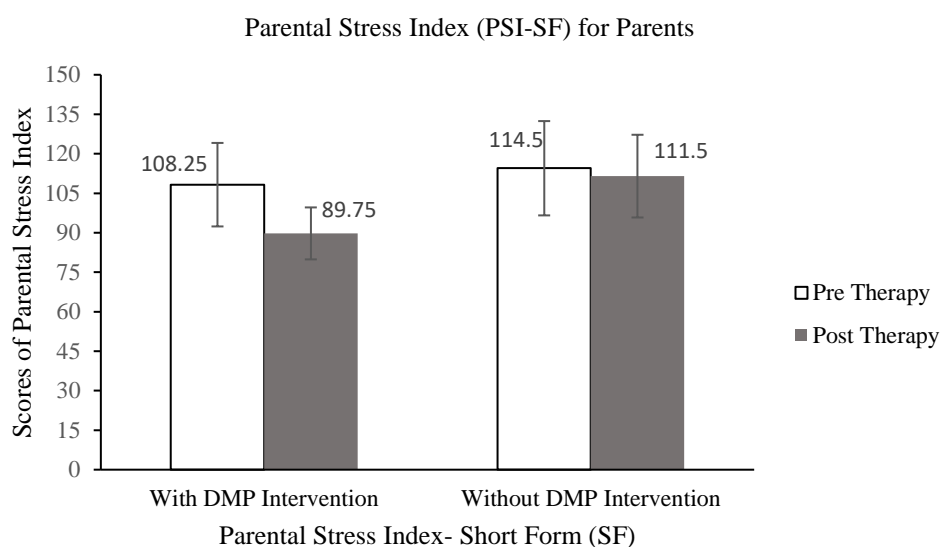


Figure 6. 8 Parental Stress Index -Short Form (PSI-SF) total scores for Parents

Results from the one-way Analysis of Variance (ANOVA) showed no significant differences in pre-intervention AWS or PSI-SF total scores between DMP intervention and control conditions. Results from the first ANCOVA showed that pre-intervention AWS score ($F_{1,33} = 106.474, P < 0.001, \eta^2 = 0.093$, Cohen's $d = 0.64$) and number of sessions attended ($F_{1,33} = 28.244, P < 0.001, \eta^2 = 0.025$, Cohen's $d = 0.32$) was significantly associated with post-intervention AWS score. A significant difference in post-intervention AWS score was also found between DMP intervention and control groups ($F_{1,33} = 4.418, P = 0.04, \eta^2 = 0.004$, Cohen's $d = 0.13$), with those in the DMP intervention showing greater AWS scores post-intervention than those in the control condition (coefficient = 2.551, SE=1.214, 95%CI: 0.082, 5.020).

Results from the second ANCOVA showed that pre-intervention PSI-SF score ($F_{1,15} = 298.744, P < 0.001, \eta^2 = 0.053$, Cohen's $d = 0.47$) and number of sessions attended ($F_{1,15} = 14.415, P = 0.002, \eta^2 = 0.003$, Cohen's $d = 0.11$) was significantly associated with post-intervention PSI score. There was no significant difference in post-intervention PSI-SF score, however, between those in the DMP intervention and those in the control condition ($F_{1,15} = 0.136, P = 0.7, \eta^2 = 0.00002$, Cohen's $d = 0.01$). Due to high attrition rate in the parents attending DMP ($N=4$), Wilcoxon signed-rank test was performed for total scores of PSI-SF before and after DMP within subjects according to Per Protocol criteria. No significant difference was observed in the pre and post intervention scores after DMP ($Z = -1.826, P > 0.05$). Likewise, for the comparison between DMP and control group, Mann-Whitney U test was used. The results showed no significant difference for the post total scores of PSI-SF between DMP intervention group and control group ($U = 5.5, Z = -0.726, p = .46$).

Results showed that for AWS the mean difference between pre- and post-intervention score was greater than our predetermined minimal clinically important difference (1.234) for the DMP intervention group (i.e. $2.4 > 1.234$) but this was not the case for the control group (i.e. $0.12 < 1.234$). Similar results were found for PSI-SF scores with the mean difference between pre- and post-intervention PSI-SF score being greater than the MCID (5.172) for the DMP intervention (i.e. $9.36 > 5.172$) but not the control condition (i.e. $2.3 < 5.172$). These results suggest that whilst the difference in post-intervention score for PSI-SF between DMP intervention and control group was not statistically significant, the mean difference in pre- and post-intervention score for the DMP intervention group achieved the MCID for a small effect size. Further, MCID for a small effect size was achieved only in the intervention group but not in the control condition.

6.2.3 Preliminary discussion on quantitative results (Caregivers)

Quantitative Research Question 1: What is the contribution of DMP practice towards the development of wellbeing of caregivers of children with ASD?

This study was piloted to evaluate the impact of a DMP intervention protocol on overall psychological wellbeing of caregivers, including parents and teachers, as well as parental levels of stress after a course of DMP sessions. The MCID was achieved for both outcome measures used in the study i.e. Parenting Stress Index-Short Form (PSI-SF) and

Adult Wellbeing Scale (AWS) in the DMP intervention group but not the control group. Differences in post-intervention measures for the AWS but not the PSI-SF were significantly higher for those in the DMP intervention compared to those in the control condition. These results indicate that as a pilot study the DMP intervention was having a clinically significant effect on the key parent and caregiver outcomes and a statistically significant effect on the caregiver outcome used in the study.

Findings therefore, suggest that both the PSI-SF and AWS are outcome measures that can be included in future large scale studies of this nature, and those more generally designed to address caregiver and parent wellbeing. However, a key point here is that the number of sessions attended by the parent and/or caregiver was significantly related to the post-intervention measures for both the PSI-SF and AWS. This suggests future studies of this kind should focus on enhancing parental and/or caregiver attendance and engagement in the therapeutic intervention as this is likely going to effect the impact of the designed intervention.

Positive associations between personal resources, mental wellbeing and the effects on work wellbeing have been established (e.g., Schwarzer and Hallum, 2008; Skaalvik and Skaalvik, 2010; Xanthopoulou, Bakker, Demerouti, and Schaufeli, 2007). The mean scores of outward and inward irritability scores have shown a downward trend in the AWS mean scores of participants in the DMP group. This finding can be supported by a recent UK based qualitative research, where Glazzard and Rose (2019) reported that children were ‘attuned to their teacher’s mood and could usually pick up when they were feeling stressed, even if teachers tried to hide it’. In addition, the researchers noted that caregivers’ stress clearly reflected on their irritation level, frequency at which they shouted at the class would be more than usual, got distressed when children did not follow the instructions, classroom behaviour worsened, and less work than normal was accomplished in teachings (Glazzard and Rose, 2019). Hence, the DMP’s role in enhancing the caregivers’ personal strengths, offering new ways of looking at and dealing with the challenges with mindful composure might have been critical in making the AWS scores better.

Unlike the findings from the study conducted in India (Aithal, Karkou & Kuppusamy, 2020), Parenting Stress Index-Short Form in this study did not detect statistically significant difference post DMP intervention. This could be because of several differences that need to be discussed under the child-related, family-related, socio-cultural, political and individual factors mentioned in the introduction. The baseline

scores of the participants in the two studies were far apart as the severity of parenting stress was much higher in the Indian study compared to the present study. Due to lack of external resources and facilities available to the people in low and middle income countries such as India, epidemiological studies have documented significantly higher stress levels in parents of children with disabilities in developing countries, when compared to reports of parents from developed countries (Brezis et al., 2015; Daley, 2004; John, Morris and Halliburton, 2012; Wilcox, Washburn and Patel, 2007). Hence, these demographic baseline variables might have emerged as key factors accounting for differences in PSI-SF after DMP in caregivers with higher levels of burnout. The participants also varied on their personal resources. Participants in this study were receiving support and services from the SEN settings to manage their children during the day. But this was not the case in the participants of the previous study as they did not have the privilege for respite care, and they had to support their children 24 hours per week further needed since their children were not attending full time school. It has to be noted that the age range of the children of the participants in the current study was 9-13 years and the level of acceptance might have evolved over the years while the participants in the previous study were raising much younger children (around 4-7.2 years) and were dealing with the trauma related to the diagnosis of ASD to their children. This contradicts earlier research findings with regards to age, as parents of children aged 6–12 years were found to have significantly higher levels of stress than mothers of pre-schoolers and adolescents (Orr et al. 1993). The argument in Orr et al.'s (1993) study was that parents' initial attention goes on achieving basic skills such as self-help skills, joint attention and communication skills. However, as children grow older, parents may encounter more stress because of the children's emotional and behavioural problems and most common comorbid conditions such as attention-deficit/hyperactivity disorder, oppositional defiant disorder, peer problems, and anxiety disorder, which, in addition are publicly stigmatizing (Helland and Helland, 2017; Zaidman-Zait et al., 2014). Since the age of the children as a variable on the parenting stress is inconclusive, sociocultural and family factors may be responsible for differences between studies.

Differences in the socio-cultural and family contexts of the participants were observed between participants of both the current and the Indian study. Marital status has been identified as one of the factors implicated in caregiver burnout (Russell, Altmaier and Van Velzen, 1987), with married persons reporting less exhaustion and depersonalization than single parents. The percentage of single parents in the present

study was higher than in the study in India. Caretakers were not readily available for their support. In comparison with the previous study in India, single parents were more present in the UK sample. However, the sample in India was limited to mothers who had moved cities with their children to receive professional services. Their partners and family members visited them intermittently only during holidays and festivals, leading to limited social and family support. This perhaps explains their clinically severe levels of scores in PSI-SF and dramatic reduction post DMP intervention in the Indian study. The mean scores in the PSI-SF have shown a downward trend (decrease of stress) after DMP intervention in the experimental condition but not enough to show statistically significant difference. This leaves an open debate about whether it would have been better to have set tighter inclusion criteria to include only those participants who needed psychological support or include any caregiver in order to prevent burnout and promote wellbeing.

6.2.4 Qualitative findings (Caregivers)

As explained in the methodology section, qualitative data of caregivers from five sessions of the four clusters of parents and teachers, collectively referred to as ‘caregivers’ in this study were considered for the analysis. The number of participants in each session varied; ranging from maximum six to just one participant. The focus of the analysis revolved around exploring the views of the therapist and caregivers on the contribution of DMP towards their wellbeing. All the sessions were transcribed and analysed following thematic analysis as outlined by Braun and Clarke (2006). This included data generated by participants during semi-structured interviews in the form of verbal and art reflections after movement explorations, retrospective video observations, participant observations and therapist’s reflections. Examining excerpts from the 20 DMP sessions were coded to generate themes. These comments from the participants and the observations from the therapist and the researcher who participated in the sessions were grouped together and it led to the emergence of six themes. These themes are:

- (1) Beholding within and around
- (2) Reflecting and reinforcing strengths
- (3) Exchanging views
- (4) Looking back and carrying forward
- (5) Core benefits

(6) Challenges to engage in DMP.

Most of the themes comprised of further subcategories. Table 6.6 offers an outline of the full codebook with all formulated themes and subthemes along. Furthermore, the illustration depicts closely knitted links between the coded excerpts in each main and subcategory. Revelations made by the caregivers are quoted with abbreviations such as P (number) for parents, T (number) for teachers R (session number) for researcher and D (session number) for dance movement psychotherapist. Although, this is a qualitative analysis the excerpts were number coded, the frequency of occurrences of the themes and in which sessions were documented to enhance the specificity and trustworthiness of the data representation in this report. It is also believed that the information provided in the Table 6.6 will be valuable to reveal and infer from the context in which such statements were made or when such observations were made.

Table 6. 6 Qualitative themes codebook for caregivers

Sl.no	Themes	Frequency of occurrence	Session Numbers (1-5)
1	Beholding within and around <i>1.1 Unlocking the unfamiliar</i> <i>1.2 Enhancing awareness and alertness</i>	21	1, 3 and 5
2	Reflecting and reinforcing strengths <i>2.1 Embracing Positivity</i> <i>2.2 Recalling fun moments with children</i>	18	2 and 3
3	Exchanging views <i>3.1 Structuring and compartmentalising</i> <i>3.2 Sense of control</i> <i>3.3 Escape</i> <i>3.4 Confronting the challenges</i> <i>3.5 Planning ahead</i> <i>3.6 Acceptance</i>	19	3 and 4
4	Looking back and carrying forward <i>4.1 Unprocessed baggage</i> <i>4.2 Creative action plan</i>	16	1, 4 and 5
5	Core benefits <i>5.1 Relaxation</i> <i>5.2 Self-expression</i>	23	1, 4 and 5

	5.3 <i>Grounding and relishing the present</i> 5.4 <i>Letting go</i>		
6	Challenges to engage in DMP 4.1 <i>Contemplation about the approach</i> 4.2 <i>Readiness to trust and be playful</i> 4.3 <i>Access to emotional and symbolic content</i> 4.4 <i>Therapeutically safe environment</i>	14	1, 2, 3 and 4

6.2.4.1 Beholding within and around

Many participants acknowledged during DMP sessions that the process encouraged them to observe themselves and their surroundings. They perceived the sessions to be an opportunity to observe sensations in their bodies and movement patterns of other participants in the group. It was reported that they noticed an enhanced sense of body that helped them to explore unfamiliar inner space. These experiences were categorised under the following two themes:

Enhancing awareness and alertness

As an opening ritual all the sessions began with checking in to notice feelings, physical sensations, aches, reactions, behaviours and thoughts at that moment. One of the most frequent answers given by the participants when asked about body parts seeking attention were neck and shoulders. They reported ‘*stiffness*’, ‘*heaviness*’, ‘*tightness*’ and ‘*problems*’ in their neck, shoulders and some joints (P2, P3, P4, T2, T3, T5, T6). This was not reported just once or twice, but rather several iterations were made during several occasions by both parents as well as teachers. In one of the sessions a participant reflected about the observations on her life in general based on the drawing that she created after moving “*I have realised how my life is in general. Rollercoaster like, with ups and downs. Powerful up swings and powerful down swings*” (P5, see Figure 6.9).



Figure 6. 9 The rollercoaster

The therapist observed in that the movements of the participants, especially of the parents were restricted to the movements of body extremities with limited movements of upper torso. In addition, their movements were observed to be performed within a small kinesphere and with hesitancy. The researcher has noted '*fisted hands*', '*wooden log-like postures*' during initial phases of the sessions (R1). When the therapist offered the participants some of these observations, a participant spoke about how DMP enhanced her alertness about herself and surroundings "*I think it makes you think a little bit more. It is helping my mind in thinking different postures mean different things. I am looking around and seeing how everybody has stood and sat. It tells us a lot by the posture somebody has stood- body image, feelings, emotions etc*" (P2).

Unlocking the unfamiliar

During these sessions, the participants shared about their experiences on exploring unknown materials and allowing to surprise themselves with the unfamiliar materials that emerged during movement exploration. A participant while reflecting about her movement experience shared the pleasure of engaging with the unfamiliar:

"I don't know. My hands were just free flowing (with a shrug). I think we all start with something that we don't know to do with and then we slowly start shaping it into

something functional. Just feels good. I started somewhere, and from somewhere came this life you know, life with some kind of plant life” (T6). Another participant expressed that she “had surprisingly kind of comfortable positive experience” (T1) when she was involved in a movement exploration activity.

Some of the participants expressed that dealing with uncertainty and dwelling in unfamiliar space within were challenging: *“In the beginning it is quite difficult as you don’t know what to expect. So there is a little bit of shyness and just not knowing what to do. A little bit wobbly, not too sure, one foot in, one foot out” (T5, see Figure 6.10).*

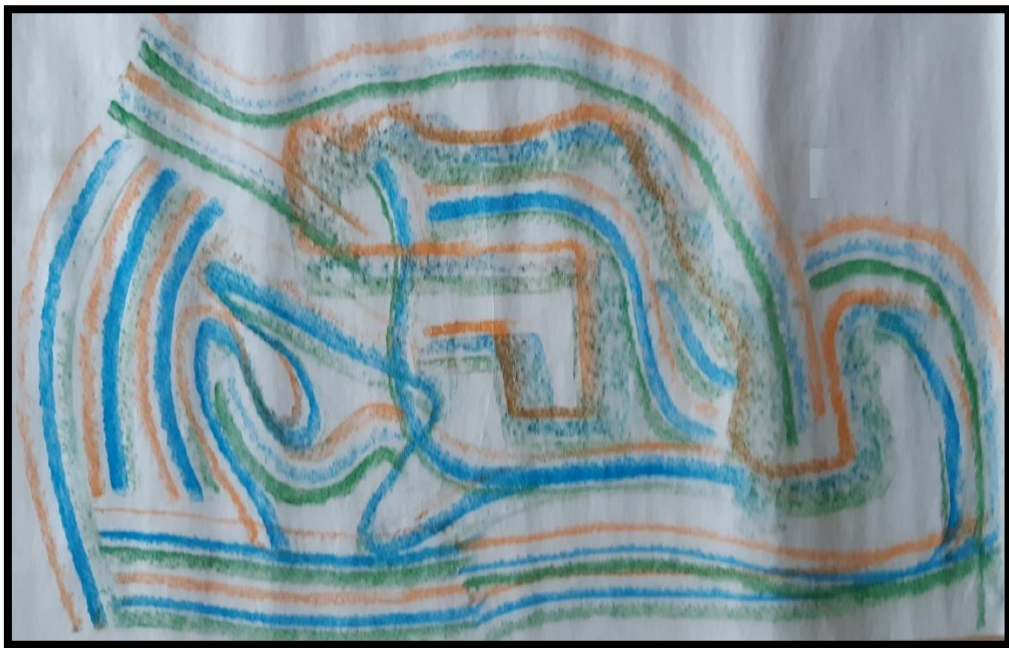


Figure 6. 10 The unfamiliar space

However, it was further reported that by allowing themselves to experiment with different movements arose novel strategies to deal with stressful events: *“I think we are adding new things to it and experimenting with actually if it is working well or not. hmm.. it will be flower or weed. It will need some pulling up at some point when it starts growing up” (T3).*

6.2.4.2 Reflecting and reinforcing strengths

Participants recognised and acknowledged that the strengths-based intervention approach implemented in the protocol was supportive. Some of the participants stated that the sessions provided a platform to for identifying some of the strong points with them. The therapist pointed out that the usual tendency of the participants was to talk about the successes they have had, but they did not want to attribute their own strengths to it. Henceforth, the therapist highlighted her role in identifying strengths in the participants and deliberately paraphrase their narrations to showcase the strengths in what they expressed.

“And so I had to tell them this is because of your so and so quality or what you have done is with your strengths and resources. It is not a common practice to talk about strengths. People feel uncomfortable boasting about themselves. But it is helpful to have them reflected back to them. I guess it is what it felt like with the paper activity as well” (D3).

The therapist witnessed, reinforced and validated their strengths. In one instance the therapist articulated *“It sounds like you have got a wealth of experience, through dedication and consistency you know how to actually make all those threads happen” (D4)*. After this, a teacher (T2) acknowledged her years of experience as a resource and also credited her *“internal skills”* and said *“it takes a long time”* to mindfully inculcate them. Patience, creativity, persistence, loving, caring, reliable and good time management skills were some of the other qualities that were recognised as their strengths.

Subsequently, two sub-themes related to this main idea were identified in the data and they are described below.

Embracing Positivity

Participants revealed that they had helpful outcomes, a sense of content and pleasure if accomplishing something good after they were encouraged to reconnoitre some of the life events with the help of movements and props from a positive lens. One of the participants described *“It is just that the being positive like this has got a lot of benefits. I have been thinking about, the moments of success and the kind of response I have got and all that. Actually we have looked at lots of strengths and things that have gone well. And it’s been like very self-positive. It’s been really good and I am thinking like hmm. I want to lie down (T7)”*.

Some of the parents were also able to highlight the positive side of challenging circumstances of caring for children with ASD. One of the participants towards the end of the third session, drew her little family using bright colours and reflected saying “*I think the children that I have make me more patient. It might sound quite strange here. But it is making me a better person. We are special*” (P2).

The therapist while reflecting on one of the sequences in session 3 has reported on how the positive aspects expressed by the participants created an impression her body and mind: “*Some of the proud moments expressed by T2 using a golden garment was in between the bubbles blown by T4. The interaction looked powerful, delightful or transcending. Sounds produced by T3 using a toy made me feel a positive drive emerging from my core*” (D 3).

Recalling fun moments with children

There were instances in the sessions where the participants shared with the group some of the cheerful experiences with children. They reported that recalling special events and their special bonding with their children uplifted their moods and energy. The participants appreciated the opportunity to build a resource bank by rejoicing, recreating, embodying and being witnessed when they shared some of the joyful moments with their children. Some of the participants used abstract movements while some of them projected their feelings on to the props to express. For example, a parent expressed how happy she felt when she heard about her son’s work at school by gently lifting a balloon high above her head. She said “*I loved that feeling up high*” (P4). Another moment of playing with her son was expressed by reaching the balloon high up by supporting with her fingertips and letting it fall down into her cradling arms and hugging the balloon. Overall, as a common pattern it was noticed that the participants appeared confident while they were performing these movements as their postures lengthened in the vertical plane and they used broad movements with an expanded kinesphere. One of the teachers shared that she felt “*unbreakable*” and compared herself to “*a brick wall standing strong*” (T6).

6.2.4.3 Exchanging Views

Over the period of DMP sessions while the participants shared their experiences and exchanged their views with the group, they appeared to be learning from each other. Especially in session 3 and 4 the participants after engaging movement explorations, described different coping styles. In addition, they discussed several child management techniques that worked with their children and some of which were acknowledged by the members of the group as useful. They stated that they would actually consider some of them as they believed some of the strategies were worth implementing in their personal life and with their children. Sometimes the participants just acknowledged the individual differences and processed why their personal preferences differed from others or why such an approach would not be applicable to them. Different patterns that were noticed overall are categorised under following sub-themes:

Structuring and compartmentalising

Participants reported that some of the DMP activities facilitated them to know how they had compartmentalised resources and challenges. They realised that tidying them away at regular intervals was necessary to maintain wellbeing. Knowing the ways through which participants can have strategies to release challenges and sometimes keep them without being affected by those challenges were discussed. *“Trying to do some organising and tidying up really. I was thinking about what you said about challenges before. I actually realised that there is a space in my mind for challenges but it just has to sit in the right space and make sure that I don’t over think that it is challenging and giving it right support. It is not locked in. It is free to go if it wants to go”* (T4, see Figure 6.11).

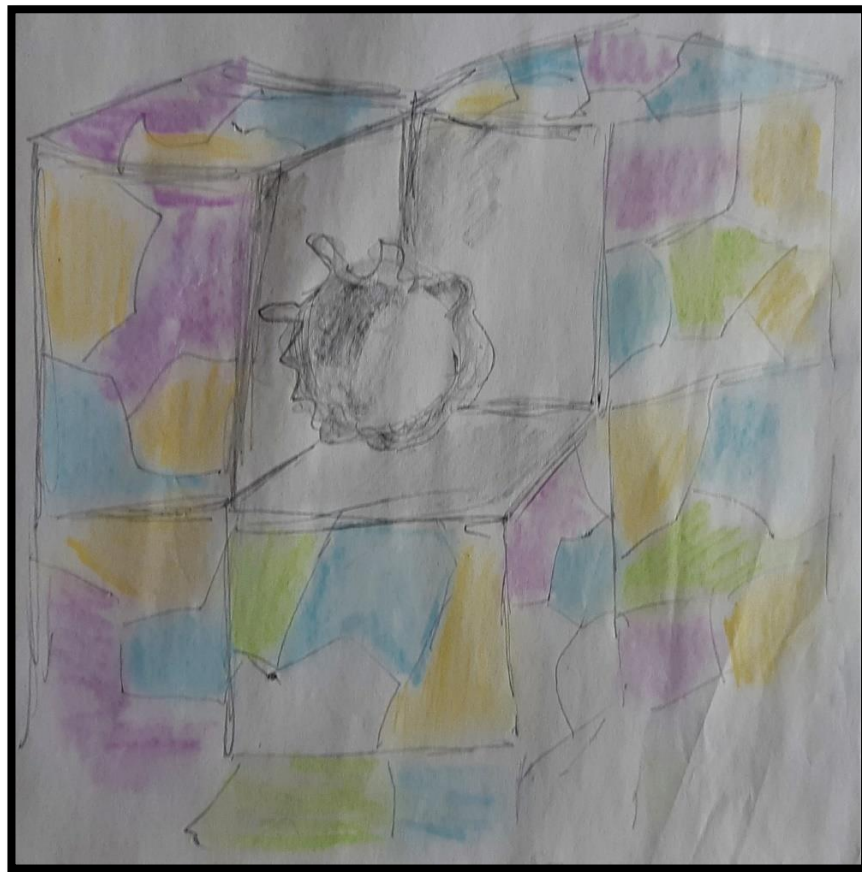


Figure 6. 11 Structuring and compartmentalising

Escape

Another pattern that was noticed during the discussion on dealing with challenges was avoiding or escaping from acknowledging the challenges. One of the participants expressed her choice to move away from undesirable and negative events like water off a duck's back as her intrinsic style. Her revelation during one of the activities during session 4 highlighted that there is a need for some sort of balance in the significance and weightage that is given for resources and challenges. She voiced "*When I was doing the obstacle course it was very negative. I saw this (glittery ball) on the table. I had a little bit of play with it. It reminded me that I had to be happy. Something for me is our own negative thing is problem to something. So, I just need to be happy. It is that simple. Balance it all*" (T5).

Sense of control

One of the participants after a movement improvisation activity with a balloon filled with their challenges session described how the strategy to deal with her challenge unravelled. She expressed that she realised that she has to be more specific to identify challenges, have some control over them instead of just letting them overwhelm her. Pointing to the balloon she revealed *“This is the challenge. But that is okay. It’s there. I still need to do all the other things. Just having a side to an eye. Just being in control of them. Once all the challenges were in here (balloon) I was able to move it in a way I wanted to and it was not moving me. That sense of control over managing the challenges is something that I would want to have”* (P3, See Figure 6.12).



Figure 6. 12 Sense of control

Confronting challenges

The participants also discovered and shared various ways that required modifications or slight reworkings of their environment to turn around the challenging pathways into barrier free space. Some of them expressed that after shifting around certain objects in the obstacle path that they had created, it did not remain as an obstacle path anymore. A couple of participants said that a modification with addition or deletion of some movements provided a whole new perspective to the so-called challenge that had believed to be a challenge until then. For instance, a participant shared that she added *“a pirouette and quick spin around to catch up with everything and adopt to different things helped me carry on forward”* (P4).

Planning ahead

Some of the participants preferred to plan ahead to face the challenges that they anticipated. It was illustrated as a multi-layered approach by one of the participants where she had several layers of colours with many dots. *“the little blue dots and the challenges that are up against in the next six months, it is gruelling. I have to move some of these layers to allow for the difficulties to be dealt with the opportunities at that time. A radii kind of movement from big fish to little fish. I got to move things in between things here and there. I will get there in the end but I'll have got a few obstacles to cross first” (T1).*

Acceptance

One of the views most commonly expressed and agreed by all the participants was accepting the circumstances they were in. Everyone (parents and teachers) agreed that there were some aspects which were beyond control and the challenges had to be accepted as they were. One of the participants described a situation which was very common in a classroom setting *“In my class there is a lot of energy. I was thinking about a specifically particularly a stressful day when one of my TA was off. I was literally, every time I sat down a student would call and then had to get up and move back and forth. Every time I took a step forward I had to back again to sort things out. Sort someone out sort someone out.. so this is kind of a lot of different colours and energy and they all need different things and I'm trying to fix it all which is not possible” (T2).* She further described movement exploration of this situation in this way *“At one point I was looking at the tennis ball and I was thinking you (the ball) come to me, I'm not coming over there again. but then it's not gonna come over to me. I'll have to get up and go and get it. When it starts moving I feel like stop, stop it !! alright I'll come over and stop” (T2).*

Another participant reiterated a similar circumstance and highlighted that acceptance of things as they are is sometimes the only option and becomes important to enjoy even when the situation is chaotic and out of control. She uttered *“I'm having my fun thing here. That's my vision. I decided go with the flow. So that's why I just let my balloon just go off. Sometimes you will just have to let go the way it is. I was tidying up a little bit when I was doing my obstacle course for a while but later decided to let it go. Okay.. let the chaos come. It's gonna come all the way just let it go with it anyway. Fighting it is gonna be more of a challenge” (P4).* Likewise, the theme of acceptance unearthed in an art work which was created in response to the movement exploration: *“I know when I saw all the dust on, it was getting quite messy. I was trying to sort that out*

by sweeping it all. But still you can see those little dust particles on the paper. I guess it is always going to be there” (T6, See Figure 6.13).



Figure 6. 13 Sweeping the mess

6.2.4.4 Looking back and carrying forward

It was evident in some of the participants’ art and movement-based expressions that they were carrying unprocessed materials from their past experiences. The participants have referred to their childhood memories as well as tragedies of their recent past while creatively engaging with the arts. In addition, worries about the future of their children and eagerness to learn arts-based skills to implement during with the children were noticed. These two patterns where the participants oscillated backwards and forwards in their thoughts are discussed separately in the following sections.

Unprocessed baggage

During movement-based and verbal interactions with the participants, it was noticeable that they were carrying psychological baggage of a lifetime on their shoulders. Sometimes this extra burden they carried reflected on as physical symptoms and had an impact on their present. Although attempts were made to encourage the participants to acknowledge and process those issues, not many of them were in fact ready to face and address the

issues. Sometimes they appeared to be ignorant about the unprocessed psychological baggage and at times it seemed they were not ready or equipped to process the emerging materials. For instance, P1 during movement exploration had series of movements where he walked backwards with backhand strokes and created a brown and yellow tangled pile in response to his movement experience. When inquired about what that meant to him, he replied “*nothing, just some colours and lines*” (P1, See Figure 6.14). The therapist interpreted that image as communication of his untreated inner conflicts or confusions filled with disdain and disgust. However, the participant ducked further processing and reported as something insignificant. There were several such instances across the four clusters. One of the participants recalled childhood days as the memory was evoked by a hand gesture using two hands setting the fingers apart. It was only one participant who ultimately opened up in the last session about her unhealed grief of losing her father. Since it was the final session, there was not much time to process it further.

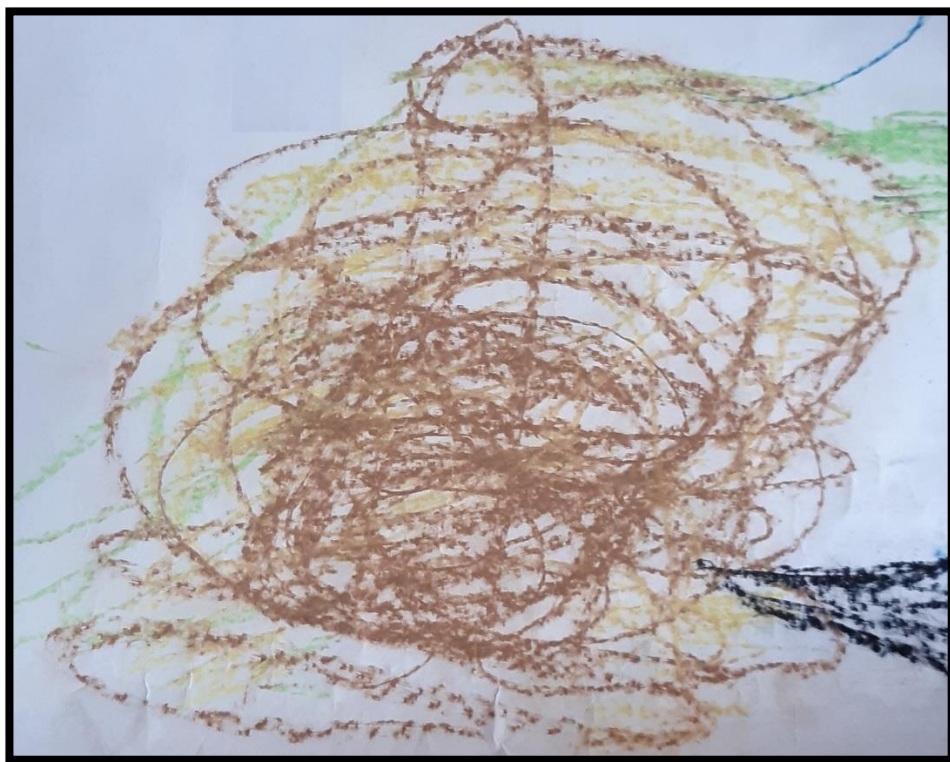


Figure 6. 14 Just some colours and lines

Creative action plan

The participants expressed their interests to take away their learnings from the session outside the therapeutic setting and implement in their actual life. The meanings and personal discoveries were creatively converted as action plans to be able implement practically. Some of the points were short-term goals and had an immediate impact. For

instance, one of the participants revealed that she would implement some of the coping strategies that she realised from session 4 in the commencing week: *“I have got a few projects going on which we don’t know where this will go completely. But, well definitely selectively prioritising tasks will be useful”* (T3).

There were also occasions where the personal discoveries had long-term impact. A participant expressed *“I don’t think it is something that has immediate effect. But, I know over the course of time I have to be prepared, move some ideas to face it in a different way than I would normally”* (P2).

The therapist also validated their choices and encouraged them to carry their decisions forward: *“It looks like you have got your own back now. Literally that hand movement is just like I have had this meeting of myself and I have got my own back for going forwards over the next week”* (D3). These self-imposed plans were reviewed in the beginning of every session while the participants checked-in to the sessions. In addition, the participants also reported that they left the session being hopeful about the future.

6.2.4.5 Core benefits

The participants expressed different ways in which DMP had an impact on their body and mind. These were the immediate changes that they perceived within themselves by comparing their movements at the beginning and towards the end of the sessions. The caregivers noticed that they were able to experience being relaxed, express themselves, feel grounded and enjoy the moment by letting go unnecessary thoughts and stressors from their mind and body.

Relaxation

This was one of the most frequently used words by all the participants. They perceived these DMP session as a platform to unwind and bring clarity in their thought processes. Some of them reported a calmer composure of mind, low tension and anxiety. The participants also compared the DMP process to Yoga from their earlier experiences. It was also conveyed that the opportunities to stretch and loosen the body and focus on breath facilitated them to relax. One of the participants placed several layers of garment over my head and symbolically represented that they were all the worries sitting there in her head where there was no scope for anything to fully pass through it. She described her experience in DMP sessions by unwinding different layers of the garment like the layers of an onion. Another participant described that her experience was *“like water from*

the top rolling down the shoulders and now I'm relaxed” (P4). Similarly, another participant dropped her arms and mentioned that she was able to slacken the tension around her shoulders after session 4. The participants’ movements were observed to be using light and free flowing body efforts while describing their relaxed sense of being. In addition, the relaxed state of mind reflected on their choice of colours during closing self-reflection using art work. A caregiver stated: *“I started off with purple, because it is the colour I like. It brings calmness to me” (T3, See Figure 6.15).*



Figure 6. 15 Bringing calmness

Self-expression

The participants noticed that DMP had given them an opportunity to be themselves by expressing their thoughts and feelings without any hindrance and fear of being judged. They mentioned that they were able to break out of their generalised and fixed patterns of living and experience some sort of change in their way of living. For instance, a parent expressed that *“routine and the straightness are the most challenging kind of aspects” (P2, See Figure 6.16).* She explored this challenge through movements and represented her experience through art work. She represented her son's routines with straight lines and

her desire to bend and take different curves around that. After movement exploration she decided to overwrite on the original drawing by adding some chaotic marks on the original straight lines. She reported that she had found alternate ways and some room for a curve or divergence in between straight lines. She specified that finding a break from routine was something that was not practically feasible. Although organised chaos within the set routine was something achievable by containing the chaos within a boundary. Another parent looking at her art work created towards the end of the session expressed that *“I have been carrying a lot of stuff while managing to maintain a positive outlook in the front whilst also dealing with the stuff inside or underneath. I can see it being stormed up in my drawing”*. The therapist observed that the participants had used the whole space when they had expressed them fully. Otherwise, they seemed stagnant and used very little space in the room. She described *“People have extended a bit further than what they would usually do. Felt it flowed well today” (D4)*.

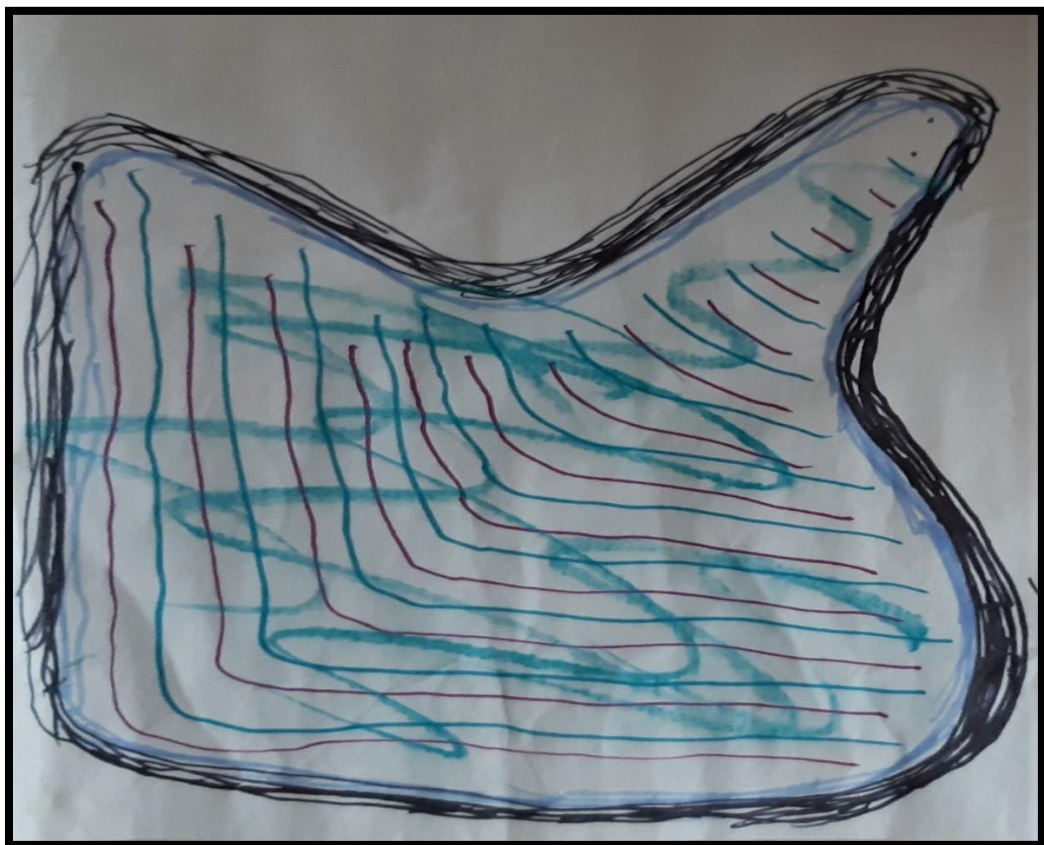


Figure 6. 16 An organised chaos

Grounding and relishing the present

Reports from the participants emphasised that the sessions helped them to feel grounded and keep them active and involved in the present. They collectively approved that the sessions supported them to reorient to the here-and-now and in reality. It enhanced their alertness, centred energy, focus, slowed them down and helped in managing overwhelming or intense anxiety. For instance, a teacher described *“I think the time has passed really really fast. Before coming in its like I've got to do this that, what to do for the week. Once you are in you just let go”* (T2). In the same way, a parent unlocked her knees, placed her palms on the ground and said *“I felt being connected to the floor”* (P4). One more participant conveyed *“While I was walking my cheeks went up like I was smiling. Probably the music. I realised may be I was being fast and then reduced my swiftness”* (T7).

Letting go

Caregivers who participated in the DMP sessions revealed that the process helped them to move out of their shell. They expressed that they had *“opened up”* (P2, P3, T1, T2, T4). In fact, letting go of unnecessary thoughts, cleansing thoughts and perspectives had turned one of the clusters' theme as rubbing or brushing body was the source for movement improvisation. The therapist exclaimed *“this whacking it out thing seemed to be like a group theme. How do we clean ourselves and get back into this (opened arms)”* (D2). At the end of session 3 after creatively reconnoitring through movements on various challenges a participant described *“It was worthwhile. Kind of letting go. It was quite an experience with force coming from underneath (with pronounced exhalation). I have burst the balloon. That's all done now (with a smiley gesture)”* (P2). She reported that she was content with her choice and that she was able to relieve herself from pressing and challenging feelings.

6.2.4.6 Challenges to engage in DMP

Alongside the positive aspects of DMP, the interviews, remarks and reflective narrations made by the therapist and observations documented by the researcher strikingly revealed several challenges. There were several factors noticed in the participants that impeded their personal growth and group development. Across all four clusters a strong group bonding was not noticed. In fact, in some instances a group never formed, especially with the parents. Several unhelpful factors that hindered the therapeutic engagement were observed and they were categorised under following themes.

Contemplation about the approach

Preconceived attitudes, conceptual mis-associations and expectations from DMP played a vital role in the responses and engagement of the participants. In terms preconceived attitudes, many participants were expecting some sort of dance-based tool kit, skill set or series of steps that they could learn. Some of the participants were convinced that DMP is something for their personal wellbeing. Most of the times their focus was on how useful will it be for their children. The expectation was that it would be some type psychoeducational or behavioural training programme through which they could learn certain techniques which can be directly implemented in training or teaching children. After attending four sessions one parent mentioned *“I was expecting to learn teaching skills and strategies to manage my son’s energy. What you are doing is good. But, this is just not for me. Probably, I can see my son may benefit from this”* (P1). There were only two male participants who had signed up for the programme and one of them said *“I was just curious and came in to see what this is all about really. I don’t think this is for lads”* (P7, See Figure 6.17). These were some of the responses received from the participants despite providing participant information sheet and verbal description about the approach provided before commencing the intervention programme.



Figure 6. 17 What is DMP really about?

Readiness to trust and be playful

The dynamics of the group was severely impacted by the willingness of the participants to step out of their comfort zone and engage playfully with the therapist's invitations. Some of the participants expressed high resistance and anxiety to explore different movements and look inwardly. Their uneasiness was clearly evident in their body language with crossed hands and tensed torso. Regardless of the measures taken to design the session inclusive and engaging to all genders and keep the tasks as simple as passing a ball, one of the participants stood near the wall resting one of his folded legs on to the wall and appeared to express embarrassment to pass the ball. The sessions were sometimes perceived as being "silly" (P5) and only some participants were able to let go of their adulthood or maturity. Another factor which was noticed to have impacted on the group dynamics was varying degree of familiarity among the group members. Especially with the teachers working in the same place and the prior work relationships

played an important role in the authenticity of the therapeutic process. There were occasions where the group members were going off rhythm and did not sync-in with the partners and sometimes the other extreme where the friends would pair up as an instinct during some of the activities.

Access to emotional and symbolic content

Some participants did not find it easy to engage with abstract, explorative and inward-looking activities. Their willingness to access emotions and attach symbolic meaning to movements and artwork, and create connections with their lives seemed a challenge. Their emotional availability appeared insulated as the props were used in a concrete and literal fashion. For instance, when feathers were used as a prop they always remained as feathers. Their verbal reflections also appeared concrete as there were more outward references more than emotional or personal life references. Their movements were direct and bound. Having noticed these qualities, the therapist gave further thought about adjusting the work in such a way that everyone could respond in their own way “*Some people are more concrete thinkers, aren't they? Especially T5, like you know the clock thing might gonna work for her. She kind of wants more boxes, contained concrete and mundane while the rest of us can float around everywhere*”.

Therapeutically safe environment

Even though the participants did not mention the therapeutic space, it was obvious that several factors were disruptive to the therapeutic process. An unsettling climate in the SEN school setting was not ideal for DMP. The therapist and the researcher reflected, discussed and implemented several measures. In spite of all the efforts and precautionary steps there were numerous interruptions for the participants to engage in the session. For instance, regardless of the *do not disturb* notice on the door, teachers were suddenly called out for “*urgent meetings*”. The therapist reported that it disturbed the flow of her thought process and plans.

To summarise all the six main themes and twenty sub-themes, the findings were illustrated as a three-layered process (Figure 6.18). The central part of the figure represents the core impact of DMP perceived by the participants as an immediate experience of attending DMP. The boxes surrounding the core are the subordinating elements that are helpful factors to experience the core benefits. Finally, the four arrow marks pointing outwards are the unhelpful factors that obstructed to engage in the therapeutic process.

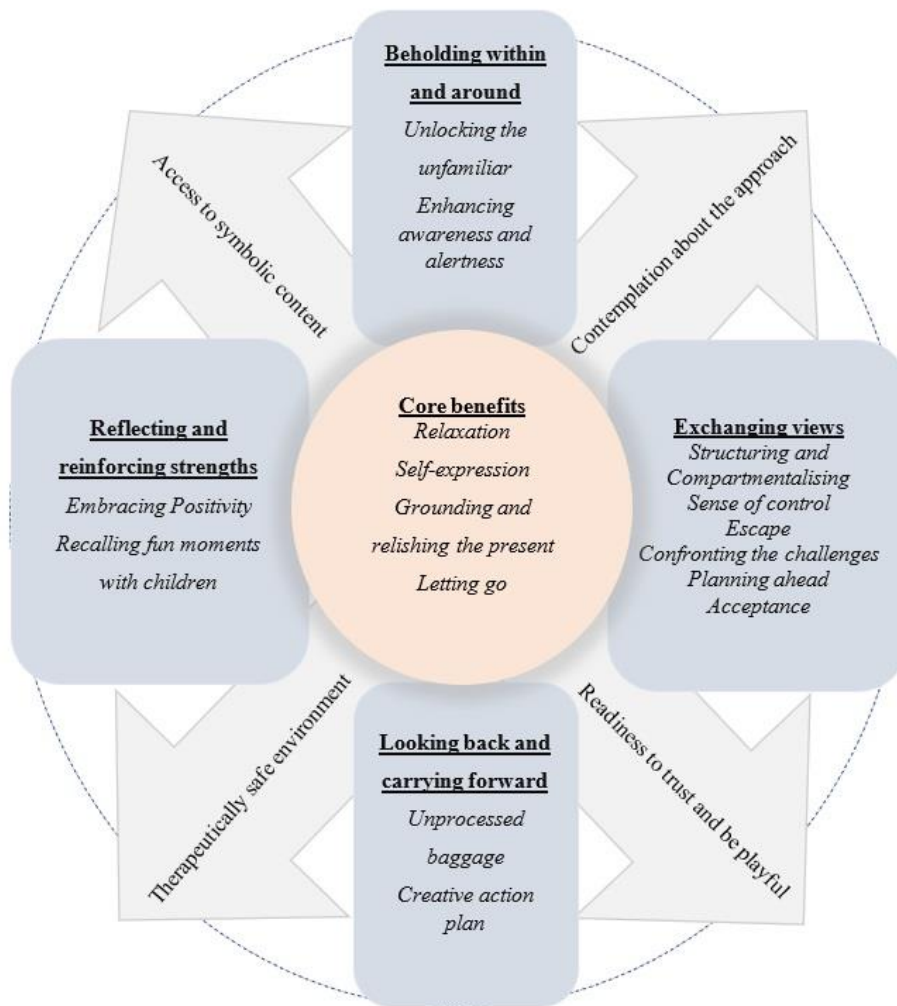


Figure 6. 18 Summary of the qualitative results of caregivers

6.2.5 Arts-based results (Caregivers)

This second dance piece called the *nectar* is based on the movement experiences during the work with caregivers of children with ASD. It has captured key moments of change and movement responses of the researcher to the contribution of DMP to the wellbeing of the participants. Video can be accessed from: <https://youtu.be/AQrL1c3MNUQ>



Figure 6. 19 Screenshot of the arts-based results link (caregivers)

The dance begins with the researcher's initial movement response to the busy and stressful lives described by the caregivers. This is metaphorically depicted as the random movement of a hive of bees drained after buzzing around for some time (*Video reference time points: 0.06 -0.42*).

Parachute from the sky to land (Video reference time points: 0.43-1.17)

This theme emerged from the movements where the caregivers used to arrive at the sessions. Those participants managing to enter the therapeutic space itself was a significant moment. T10 described that she has finally landed in the therapeutic with a parachute of tasks to complete which were pulling her back. So, after arriving she wished to cut off the strings attaching her to the parachute free herself from the heaviness of the parachute attached to her body and mind. This eventually turned out to be a ritual of landing and cutting off the strings of the parachute in cluster 9.

Stumble to stable (Video reference time points: 1.18-1.38): This was a significant moment of realising the strengths resilience where the participants managed to gather their strengths recover from the obstacles.

Adding colours to straight lines(Video reference time points: 1.39-1.49): This is a key moment when a parent decided to bring some bright colours, shades and flavours to the dry and strict routine in her life. She decided to make arrangements for alternatives and respite care.

Loaded to unloaded(Video reference time points: 1.50-2.02): A moment when a group of teachers decided to realise and burst the balloons filled with stress.

The researcher's movement response ends with the bees slowing down their pace, collecting and relishing the nectar(Video reference time points: 2.03-2.07).

6.2.6 Preliminary discussion on qualitative and arts-based results (Caregivers)

The qualitative and arts-based strands of this study were set out to answer:

What are the views of the therapist/s and caregivers on the contribution of DMP to wellbeing?

What are the key moments of change in the movement of caregivers during the process of DMP as understood by the therapist/s?

What are the important movement responses of the researcher to the contribution of DMP to the wellbeing of caregivers?

It was highlighted in the literature review that the wellbeing of the caregivers of children with ASD is negatively impacted due to stress and burnout that arise while caring for children with ASD (Najmi et al., 2018). This was no different in the participants of the current study where emotional and social wellbeing were at risk and was reflecting on their mental health. Hence, the focus was on how DMP could promote emotional and social wellbeing. In this qualitative strand, attention was given to the processes involved in DMP and the perceived outcomes of taking part in DMP journey. The arts-based themes reveal how simple movements can have massive impacts and can be initiating change. The findings show that the process instigated the participants to look at their self-schema, identify their strengths, healthy and maladaptive coping styles. These processes might have facilitated the participants to experience some positive outcomes immediately during the sessions. Alongside these helpful factors the study identified several defensive and unhelpful factors which might have obstructed the process to reach deeper to potentially experience greater positive impacts of DMP.

The findings are consistent with the concept that DMP supports in enhancing body awareness and draw attention to sensations, feelings and thoughts which might have gone unnoticed otherwise (Koch et al., 2017; Karkou et al., 2019; Parsons et al., 2019). As the theme beholding within and around indicates, the awareness was not just limited to self,

during this group DMP the participants also noticed every other body around them. It is possible that mindful movement-based activities such as creating body rhythms, passing the leadership to lead the movements while the rest of the group echoed and mirrored the movements might have encouraged the participants to scan their bodies and identify somatization (Schacter, 2011) as an invisible injury due to stress and burnout which can only be felt when listened to the body. The protocol upheld the principle of starting the process from the place where the participants are and working with the 'now' (Parsons et al., 2019). This could have been one of the reasons why the DMP process with the participants of this study started with identification of somatization and wanting to relax body and mind.

Another theme that has emerged in this qualitative strand of the study is on positivity and strengths. As recommended by Miranda et al. (2019) since ignoring the stressors faced by the caregivers may not be a feasible option, enhancing their coping abilities must be the focus of intervention to the caregivers of children with ASD. The results are in line with the recommendation where DMP has facilitated to turn stressful situations into positive meaning (Tugade & Fredrickson, 2004). In DMP the movement materials and creative use of props emerge as a form of story-telling, a movement and embodied narrative of key moments. As mentioned in the results, identifying and talking about personal strengths did not come instinctively to the participants. Hence, the role of the therapist in kinaesthetically picking up the positive dimensions in the movement narration and reflecting it to the participants might have been critical to facilitate the participants to find meaning and personal strengths in their creative expressions. This in turn could have led to experiencing greater positive-self by the participants (Fredrickson & Joiner, 2002). It supports the view of positive psychology where the participants' strengths and resources are enhanced rather than dealing with the challenges straight away (Seligman, Rashid & Parks, 2006).

Consistent with the results of the previous study conducted in India with the mothers of children with ASD (Aithal, Karkou & Kuppusamy, 2020), one of the themes in this study too revolved around exchanging views on different ways of coping and cognitive adaptation. It is possible that normalisation and acceptance of the fact that ups and downs in life are experienced by everyone during movement explorations might have facilitated some of the participants to unlock the paralysing loop of unwanted thoughts and take action to counter and embrace life's challenges. At least while participating in DMP sessions, the participants have perceived and reported feeling relaxed, free from pressing thoughts about external factors, letting free and to go with the flow to relish the

present moment. These perceived outcomes resonate with the concept central to DMP where it is argued that the active engagement in the process generates vitality and joy due dance as an art form and also because of the physiological changes as an exercise (Jola & Calmeiro, 2017; Karkou et al., 2019). Apart from the commonalities between Indian study (Aithal et al., 2019; Aithal, Karkou & Kuppusamy, 2020) and the current study as describe above, there were prominent differences in both studies as well. A striking difference is the ease in which unpleasant emotions and darker aspects of self were revealed. Although people use combination of coping strategies, one of the emotion-focused coping strategies predominantly used by most of the participants in the Indian sample was releasing pent-up emotions as early as in the second session. Besides, social coping was also noticed within the UK group with people avoiding opening up emotionally, using the session as escape, and compartmentalizing thoughts and emotions. In addition, the participants of the current study reported problem-focused strategies such as taking control, planning ahead and appraisal-focused strategies such as altering plans and adapting to the situation as preferred choices. Charles et al. (1987) argued that it is highly unlikely that people with more personal and environmental resources would prefer avoidance coping. On the contrary, the stress levels of participants in India were much higher and environmental resources were lesser. So, one of the possible explanations for the differences could be the collectivist and individualistic cultural differences to feel part of a group and trust the group easily; familiarity in using their body creatively for dance and movement access to emotional and symbolic content, vocabulary and comfort to express unpleasant emotions in a group context (Kim et al., 1999).

DMP relies heavily on expressing difficult emotions using symbolism and metaphor, transforming unhelpful emotions into healthy actions and finding resolutions to one's unresolved issues (Meekums, 2002; Karkou & Sanderson, 2006). Concrete thinking, wishful thinking, intellectualising defences and distancing from deeper emotions were not supportive to engage in DMP and this could explain high attrition rates. As mentioned in the results, one possible rationalisation was that it is children who require intervention and as a caregiver, skill set, strategies and techniques are more important. This attitude can also be found in the literature as well where the demand and number of intervention for parenting skill development are more than wellbeing and self-care programmes (Fewster, Govender & Uys, 2019). However, other possible explanations for challenges to engage in DMP are that as there were several distractions within the school environment to contain one of the parents' clusters and because of which the participants might have reacted defensively and not felt safe to express or need

more time to feel safe (Finlay, 2016). With regards to teachers' clusters their professional relationships and dynamics could have held them back from expressing unpleasant feelings and emotions (Van Droogenbroeck, Spruyt & Vanroelen, 2014). It is, therefore, worth noting that this theme of unhelpful factors to engage in DMP was one of the main differences between the current study and previous study.

6.3 Bidirectional influence of wellbeing on children and caregivers

As per the original research proposal plan, the idea was to look at the correlation between the wellbeing measures of the caregivers and children with ASD and compare those scores when one group of parents attend DMP and the other group received standard care. Regrettably, the high attrition in the caregivers' group, did not leave any scope for statistical evaluation. Hence, as an exploratory process, two selective case vignettes are presented. To graphically present both parent (PSI-SF) and child's scores (SCQ and SDQ) in one frame, the actual scores gained by the participants were converted into percentage. The maximum raw score on PSI-SF was 180 which was considered as the 100% of the total scores and if the parent's score was 90 out of 180 it was converted as 50 % .

Case Vignette 1

This is the DMP journey of a 39 year old, single mother raising two children one diagnosed with ASD and another with ADHD who was part of the cluster 6. Her movement repertoire predominantly consisted of sudden, indirect and bound movement qualities. During the warm-up and initial check-in she noticed tension and stiffness in her neck and shoulders which was interpreted as the psychosomatic impact of the burnout and stress. Looking at statistical information (Figure 6.20), it can be noticed that her son's SDQ scores were high indicating more challenges in hyperactivity, emotional and behavioural aspects with fewer problems with regards to communication. This stress was reflected in her movements when she enacted dog walking as her favourite activity by gesturing as if she was holding a leash and running as per the lead of the dog. The movement started with a consistent rhythm. Then suddenly there was a disruption in the flow of her movements as the dog ran around abruptly with high energy. She tripped, lost control, fell down and then recovered by supporting herself. This small sequence of movements, considered as a metaphor, spoke a lot about her. It represented her nurturing and caring nature, the chaos and uncertainty around her and the resilience to hit back. It was observed that despite these strengths her movements were bound and limited to a

small space. The sessions encouraged her to identify her strengths and supported her to let go of her inhibitions to move ahead firmly. She chose to burst the balloon during one of the activities in session 4 and symbolically represented releasing of her stress. Over the course of time, direct, free and light movement qualities were added to her movement vocabulary. She reported that she was pleased with her development and progress. In her words the overall DMP journey was elucidated as: “I enjoyed it. It was an eye opener to getting to know myself. It had relaxing stuff anyway. I know it is little bit different. I had no expectations when I came. I now understand what it is about. I have started noticing about myself a little bit more and consider what my body says a little bit more”. It can be deduced from her description that DMP was helpful to enhance her self-awareness, loosen her up and provided her opportunities to relax. Her openness to venture with novel approach appears to have played a vital role in this success story. After the drastic reduction in her parenting stress (from 69.44% to 53.33%), some reduction of around 2.5% in her son’s SCQ and SDQ scores can be noticed without any direct intervention to her son.

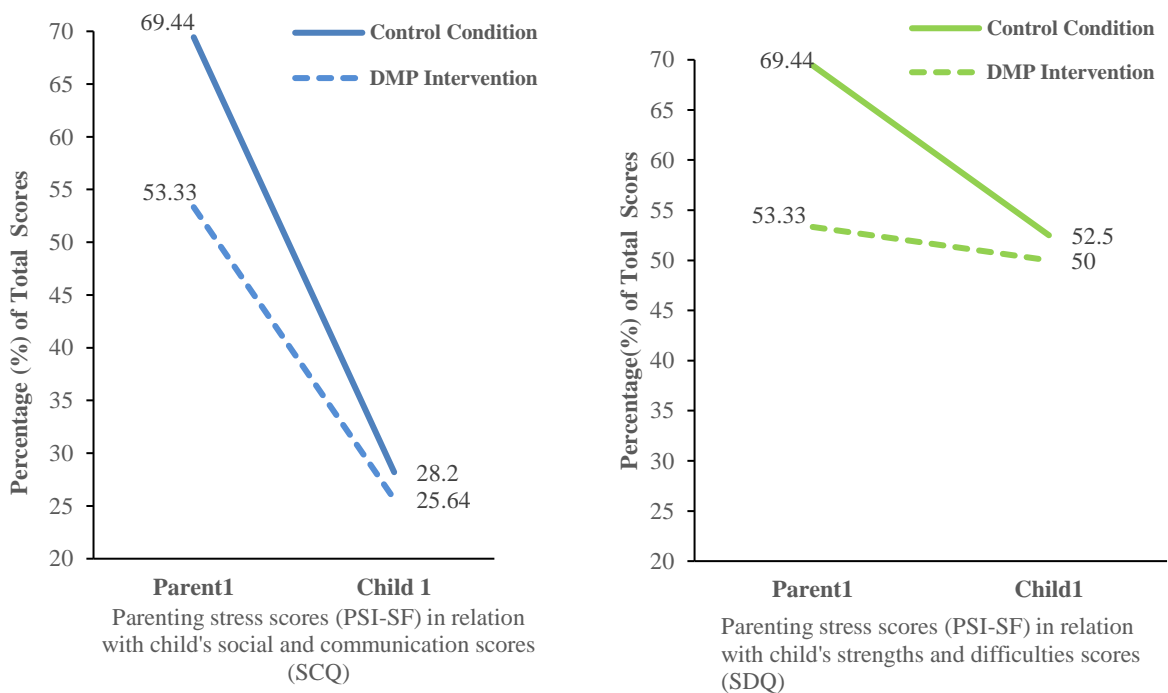


Figure 6. 20 Case vignette 1 parent and child scores on quantitative measures

Case Vignette 2

Another case vignette comes from a 46 year old mother who was part of cluster 8, raising a teenage boy with ASD along with her husband. In the first two sessions it was observed that her movement repertoire largely contained heavy, bound and sustained movement qualities. It was evident from the clarity in her verbal expression that she was aware of her thought process and intentions to attend the session. She identified and expressed that she was in distress due to several circumstances related to work -family balance. As shown in the line graphs, both SCQ and SDQ measures were impacted almost similarly (Figure 6.21). During one of the movement exploration activities while exploring new ways of living, it was observed that she was moving from one side of the parachute to another. She was using a hat and a scarf as her props. The scarf was used playfully with free flow as an extension of her body and it later became her own part as she placed it around her neck on her shoulders. She continued circling around the parachute. At one point she placed the hat and the scarf next to each other and she froze at a distance not knowing what to do next. While verbally processing the movement experience, she initially expressed that the scarf was symbolically used as her son and the hat was her husband. She was unclear of what was happening in during the movement exploration. However, when she was probed further about the moment when she froze at a distance from the hat and the scarf, she realised that was the moment of distress. She said “my son is now thirteen. I see that he now likes more boyish stuff and likes to be on his own or hangs out with his dad”. It later came to the picture that her son’s transition from childhood to adolescence had left her with sense of void. The one who was dependent and densely been a part of her was seen gravitating more towards his dad or preferred solitude and the position of not knowing what to do froze her movements. She then realised that not being able to accept son’s change in behaviours fully was the root for her distress which superficially appeared as stress due to work-life balance and not being able to give enough attention to her son. She finally came to terms saying “children need parents’ support differently as they grow. Now he needs his dad. Well, not that he doesn’t need me. Just not as much as he used to”. Thus, it was processing of the unconscious movement materials during DMP was key to her realisation of what the therapist called “the rupture and repair” and acceptance of her son’s transition. Her DMP journey as reflected in her drawings reveal that the first session had uncontained chaotic lines, next it was an organised and contained chaos to finally a consistent rhythm with identifiable patterns. The PSI-SF scores indicate

reduction in stress (from 62.77% to 55.55%) and her son's social and communication scores improved by around 2.5% and overall emotional, hyperactivity, behavioural and conduct measure improved by around 7.5%. Here it was only the mother who attended the DMP sessions and the changes were noticed in both the child's and the mother's scores.

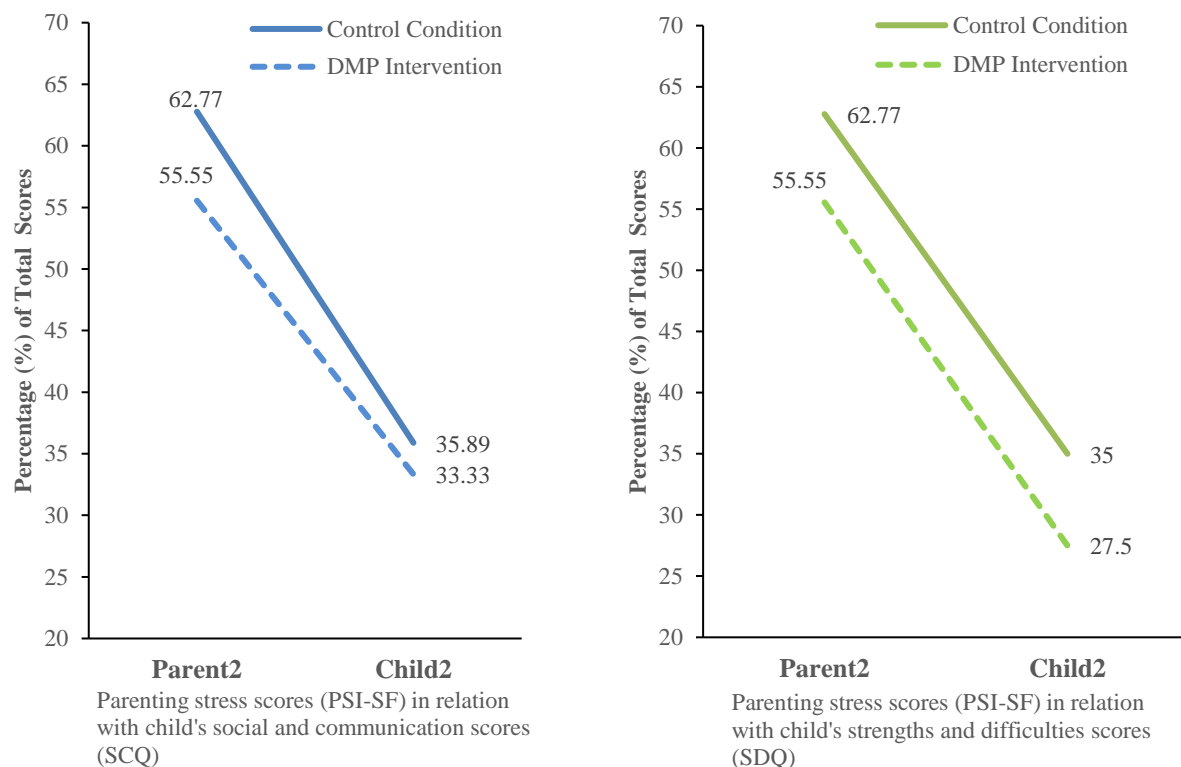


Figure 6. 21 Case vignette 2 parent and child scores on quantitative measures

6.3.1 Preliminary discussion on bidirectional influence of wellbeing

This section aims to answer the research question:

Is there any relationship between the caregivers' state of wellbeing and their children's state of wellbeing?

In both these case vignettes, it is evident that there is a similar trend and an indirect impact of DMP on children when parents attended the sessions. As children develop within a complex family system and a larger society, the belief is that children do not change in isolation. The unknown and untold interactions between parents and children might have an impact on the wellbeing as well. These observations can be supported by well-established child psychotherapy models of simultaneous interventions where both child and parent are seen separately by the same therapist (Chazan, 2003; Nilsson, 2006).

These concepts are highly influenced by attachment (Bowlby, 1988) and developmental theories (Stern, 1985; Winnicott, 2005) where at the core of the intervention, the therapist works with parents as the focus is to enhance the quality of dyadic parent-child relationships. These two successful case vignettes hint towards a potential bidirectional influence of wellbeing of caregivers on children with ASD. However, these are selective examples, and they are just the starting point. These assumptions need to be probed further to see if interventions to both parents and children will have greater and more sustained impact.

6.4 Summary of pilot intervention findings

Findings from the current study show promising effects of the DMP intervention on measures of children's and caregivers' wellbeing. Modest improvements as seen in social communication scores, strengths and difficulties and wellbeing measures suggest that group DMP intervention was effective for children with ASD and their caregivers who engaged in the sessions. Statistical and clinical significance were achieved on three measures except on Parenting Stress Index-Short Form where only clinical significance on Minimal Clinically Important Difference was achieved. The qualitative strand for children described multi-layered and complex processes involved at individual level as well as at the group interaction level which collectively influenced the outcomes. There were three main themes with 18 sub-themes that were identified.

From the caregivers' qualitative data it was noticed that participants experienced certain immediate benefits of attending DMP. Furthermore, there were some helpful and unhelpful factors that influenced the process and outcomes of DMP on caregivers. Altogether there were six main themes and two sub-themes. Two artistic inquiry dance pieces identified several key moments of change that were very simple in appearance yet played a critical role in the process of DMP.

The final section on the bidirectional influence of wellbeing presented two case vignettes which are inconclusive to answer the question. However, as a preliminary investigation some patterns indicating transactional nature of wellbeing between caregivers and children. At the end of the quantitative findings and qualitative plus arts-based results preliminary discussions were done to answer all three sets of research questions. The next chapter in the thesis is dedicated to gain understanding of the main research question and feasibility sections of the study.

CHAPTER SEVEN: CORE CONVERGENT DISCUSSIONS

In this chapter, the overall results of this doctoral study are discussed. The first section summarises and integrates the findings from three different types of research methods used in phase II of the study to answer the main research question “*What is the contribution of DMP towards the wellbeing of children with ASD and their caregivers in terms of both process and outcomes?*”. As phase II of the study implemented a convergent mixed-methods research design, the findings of the quantitative, qualitative and arts-based were brought together for interpretation. This is followed by a section considering the implications of the findings for clinical practice, training courses and research studies in DMP. Feasibility of larger studies, ideas and recommendations based on the limitations of the current research are discussed in the final section.

7.1 Convergent synthesis of the findings

The main aim of the study was to investigate whether DMP intervention sessions enhance wellbeing in children with ASD and their caregivers. To enable a wide-ranging understanding and an in-depth exploration of the multifaceted phenomena involved, different data sets, including standardised questionnaires, retrospective video annotations, participant observations, semi-structured interviews, arts-based responses of DMP sessions, therapist and researchers reflections were examined. A convergent mixed-methods design, combining quantitative, qualitative and arts-based research methods, was chosen. In this section, the different findings from different methods are brought together to get a comprehensive answer for the main research question.

With regards to children, the data consisted of five different perspectives on DMP’s contribution towards wellbeing. The quantitative data came from the teachers’ (SDQ) and parents’ (SCQ) view. The qualitative and arts-based data were from the perspectives of the participants, therapist and the researcher on social and emotional wellbeing of children with ASD. From all these standpoints, DMP was identified to be helpful to enhance the state of wellbeing of children with ASD. The quantitative results showed that the DMP intervention was having a clinically and statistically significant effect on the SCQ and SDQ measures used in the study with stronger and consistent effects particularly on social and communication aspects. Qualitative and arts-based themes such as relate and reflect; building new vocabulary; yearning for connection, a diverse jungle book and repetition to reciprocity highlight the outcomes and key moments

of experiencing social wellbeing. In addition, themes including valiant; involvement; grounding; optimisation of energy; uncertainty to certainty; chaos to stillness; fear to courage reflect on DMP's contribution towards emotional wellbeing. Going by the definitions of the National Institute for Health and Care Excellence (NICE, 2017), on social and emotional wellbeing of children with ASD, the study has identified DMP's positive role in improving emotional and social wellbeing. These included being happy, confident, not anxious or depressed, having good relationships with others, not having behavioural problems which are not disruptive and violent.

Closer analysis of the process involved in DMP revealed that individualistic and group processes were actively combined to facilitate the experience of 'a state of wellbeing' (WHO, 2001: Fact sheet, No. 220). When looked closely at the phrase, state of wellbeing, it would highlight that these moments of experiences are transient. Hence, moving from the themes starting from disconnected to freedom and intra-to inter-personal would involve some degree of self-awareness, ability to realise one's own abilities, develop certain wellness or resource toolbox to cope with the situation, agency and readiness to implement them when necessary. The layer of freedom highlighting the agency and autonomy in the themes of individual transformation process is in tandem with the concept of wellbeing as per the definition in the Mental Capacity Act (2005) where children are empowered to make own decisions, communicate in their preferred modes and regulate their wellness. Henceforth, the act played by DMP in this scenario becomes important in how the intervention offered children with ASD to add their resource toolbox to step up from one layer to another, experience that state, maintain and deal with the challenges when they arise. The study findings arrived at a point that the DMP intervention protocol that was implemented was successful in the process of catering heterogenous abilities and layers of needs of the participants. Not all the participants reached or experienced the state of wellbeing. However, all of them have taken at least a step to get close to experience that state.

The possible reason that may explain identified improvements in social and emotional aspects of children is that the movements encouraged in the DMP intervention protocol were initiated following the child's lead and resonated with the interests and energy levels of the children. These child-centred principles could have probably encouraged the participants to move ahead in the stages of intersubjectivity towards building or initiating social relations on their own, connect with others and express themselves. As Holt (1982: 145) states 'we can give other people names and lists, but we

cannot give them our mental structures; they must build their own'. This statement indicates the philosophical differences between this intervention and other evidence-based behavioural interventions mentioned earlier in this article that are used for children with ASD. In humanistic principles-informed arts therapies the idea that children take ownership of their own 'change' is championed (Karkou & Sanderson, 2006). It is possible for children to eventually learn and articulate their actual emotions through behavioural approaches. However, clinical observation also suggests that when children are taught to name their emotion, the words and their body presentation may not be at synch. When children are posed with a simple question: 'how are you?', they may appear tensed, with a shrunken body and answer 'I am happy'. This paradoxical verbal and non-verbal response could be because children are often reinforced by their environment to provide that answer. Subsequently, they *learn* that happy is the right and socially acceptable answer and may limit meaningful interactions. However, DMP which considers integration of mind and body as one of the foundational principles of practice may open new ways for meaningful and coherent interactions in children with ASD (ADMP UK, 2013). Thus, children taking ownership of their choices without any external pressure and imposition, alignment of action and words could eventually enhance agency and autonomy in children.

Moving on to the caregivers, the data consisted of the self-rated questionnaire, semi-structured interviews on participants' perceived benefits, therapist's and researcher's observations and art-based reflections. The quantitative measures showed clinically significant results for both outcome measures used in the study i.e. Parenting Stress Index-Short Form (PSI-SF) and Adult Wellbeing Scale (AWS) in the DMP intervention group but not the control group. While data of the parents and teachers were collectively analysed as caregivers, clinically and statistically significant differences were observed between the post-intervention measures for the AWS of participants who attended DMP and participants in the control group. But when parents were examined separately on the PSI-SF scale, only clinically significant difference was achieved after DMP intervention, indicating the promising effects of DMP on the wellbeing of caregivers who attended and engaged in DMP. Similarly, the qualitative and arts-based themes such as relaxation; self-expression; relishing the present; letting go; adding colours to straight lines; loaded to unloaded indicated the positive impact of DMP on wellbeing of caregivers.

The process of DMP with the caregivers indicated some helpful factors which supported the engagement and cultivated growth towards subjective experience and maintenance of wellbeing along with some challenging factors to engage in DMP. Consequently, the climate created by the helpful factors such as beholding within and around; exchanging views; reflecting and reinforcing strengths; looking back and carrying forward initiated self-enquiry to move towards inculcating self-care and conscious effort towards wellbeing. Findings therefore suggest that DMP in general has shown potential to address wellbeing of the caregivers. However, a key point here is that the number of sessions attended by the parent and/or caregiver was significantly related to the outcomes which is now left with a large gap to be filled between actual need of the caregivers and enhancing their attendance and engagement in the therapeutic intervention.

For the participants who attended the sessions, DMP has largely facilitated them to look inwardly and identify their coping styles to make necessary adjustments to make sure that their patterns are healthy to resolve the adverse situation that provoked stress (Poza, Sarria & Brioso, 2014; Aithal, Karkou & Kuppusamy, 2020). It was suggested by Kiami and Goodgold (2017) that for each percent of increase in helpful coping strategies there was a decline of maternal stress by 0.42 points. Thus, the role of DMP in nurturing resilience in caregivers of children with ASD was primarily through enhancing self-awareness and reinforcing positive qualities within them. Nevertheless, a major loophole in the poor attendance rate of the caregivers. A greater impact may have been seen if they attended more sessions. The concept of child and caregiver seen separately by the same therapist is a well-accepted model verbal child psychotherapy (Chazan, 2003; Nilsson, 2006). Since, it is novel to DMP further thoughts around enhancing the caregivers engagement are warranted. Blauth (2019) who conducted parental counselling sessions while providing music therapy to children reported good attendance and positive results. The differences are verbal v/s nonverbal or creative and individual v/s group which appears to have impacted this study drastically. Parsons and Dubrow-Marshall (2018) in their article, 'putting themselves out there' into the unknown, discuss about the polarities of themes stressing on the intrinsic undercurrents in delivering creative, unconventional and embodied forms of therapies within a school environment. The authors suggested that although, there are no quick solutions to the constraints, normative inhibitions and expectations of the participants and wider school structures and community mind-set; taking cognizance of the tension between helpful and unhelpful factors might be valuable

for dance movement psychotherapists in setting themselves. Regardless of being aware of the school dynamics and taking rigorous actions, it was still hard to establish a therapeutically safe environment within the school settings. Some practical strategies to manage the glitches in SEN settings were presented and discussed at an international conference, Arts, Creativity, and the Global Crisis held in New York (Aithal et al., 2019). The overall feedback received from the presentation was that for a stronger impact of DMP on the dynamics of the school environment a larger force is required. The effort has to be a collective one from the therapists' community to sensitize and create awareness about the work of arts therapies within the school management, and amongst staff and parents.

7.2 Feasibility and future directions for children's component

This section discusses the question 'what is the appropriateness of the research methods adopted in this study for their use in a large RCT?' With regards to age, the demographics of the sample demonstrates that the age range (8-13) was more focused without much variance within the sample reflecting on no statistically significant difference between intervention and control groups at the baseline in period 1. The intervention protocol that was developed for this study emerged from the systematic review with a sample of an average age of 9.6 years from seven studies (Aithal et.al, under review). This review enriched the suitability of the therapeutic objectives of the intervention to the needs of present sample's age range. According to Williams et al. (2008), the UK median age of diagnosis of ASD is around 4.5 years. Also, the challenges faced by adolescent groups are different from children due to the transitory phase to adulthood (Parsi & Elster, 2015). These facts could explain why research studies with children with ASD tend to include the 8-12-year olds. Hence, the age of the target population can become an ad hoc factor in future studies to explore the differences in DMP approach as an early intervention for primary school children or for adolescents separately by tailoring it to the needs of these different age groups.

Most of the children who participated in this study were boys and it was not surprising as Loomes and other researchers in 2017 reported that male and female ratio of 3:1 was prevalent in ASD. Despite existing gender stereotypes and stigma associated with men in dance (Holdsworth, 2013), the current study did not encounter resistance from boys who participated in the study, except for one out of 21 boys who was vocal about not wanting to dance. This might be associated with better acceptance of DMP by

the participants because of proliferation in the shift of gender stereotyped perception of dance among boys in recent years or children with ASD were not really influenced by the popular socio-cultural pressures.

The sample included a heterogeneous group of participants in terms of severity of ASD who were both verbal and non-verbal. The sample covered mild, moderate and severe categories but with a small number in each category to allow for severity of ASD to be included in the statistical analysis as a co-variate. It is still unclear if the severity of ASD would influence the effects of DMP on wellbeing. To take account of this spectrum, further explorations with larger sample size are needed. As the mode of expression (ie verbal or non-verbal) was included in the analysis, the study argues that irrespective of the preferred mode of expression by children, short-term DMP intervention has displayed positive results in children with ASD. This highlights the strengths of arts therapies to sidestep the exacerbating impact of mode of communication in traditional talking psychological therapies. Researchers have noticed that school-age children with ASD often remain unengaged in social settings as there are limited opportunities for socio-communicative and emotional development despite regular interventions that children with ASD receive (Sharda et al., 2018). However, the results of the current study indicate that the use of alternate, creative and arts-based means of expression to support social communication enhance the prospect of developing meaningful relationships (Nathan, 2019).

The present study implemented a group approach to DMP considering the low-cost factor associated with group therapy and more opportunities for socialisation in a group setting. In the past, there has been a mixed trend in DMP for children with ASD as the systematic review (Aithal et al., under review) identified three studies with group therapy, three studies with individual therapy and one study with parent-child dyad. It is still unclear which configuration of DMP would be more helpful in relation to the profiles of the children, time and cost effectiveness.

It is worth contemplating whether higher intensity, frequency and longer duration of the intervention would have an impact on the findings for several reasons. In evidence-based approaches such as ABA, Linstead et al (2017), found that intensive ABA intervention yielded large, positive effects on language-related outcomes and moderate, positive effects on non-verbal IQ, social functioning, and daily living skills in children with ASD. In DMP studies involving participants with ASD in groups, the intervention was offered over one and a half to two months and sessions ranging from 30 minutes (Hartshorn et.al., 2001; Houghton and Beebe, 2016; Devereaux, 2017) to 60 minutes

(Chiang, Chu & Lee, 2016). These sessions were delivered once or twice a week totalling between eight (Athanasiadou & Karkou, 2017) to 20 sessions (Chiang, Chu & Lee, 2016). The current study considered ten sessions of 40 minutes to fit well within the school's term time. Intervention effects as measured on SDQ, although showed a change close to the borderline to be statistically significant, possibly a greater number of sessions could have produced detectable significant changes. Furthermore, some tests normally require a 3-month intervention period in order to measure any change which is the case for the SCQ (Rutter, Bailey & Lord, 2003). Perhaps at least twelve sessions each term would probably give enough time to get better measurable changes. These are just speculations, however studies in the future should consider including larger data sets to analyse a linear relationship between dosage and DMP impact predictor.

The tools used in this study were reportedly identified with satisfactory reliability, validity and sensitivity to capture the intervention effects (Mieloo et al, 2012; Avcil et al, 2015; Stone et al., 2015). However, the questionnaires used required parent and teacher perspectives on the children's wellbeing and thus, do not capture the children's perspectives of their own wellbeing. For some children mothers answered the questionnaires and in some cases it was fathers who completed the forms. The scores might have been influenced by the informants and their biases. Such measures of wellbeing are often difficult to use with children, particularly those lacking the appropriate language skills. Currently, there are escalating arguments on who speaks for children with ASD and empowering children's voice on their wellbeing by recognizing their perspectives in intervention-based research (Devlin & Appleby, 2010; Moula et al., 2020). The belief here is that data from first-person opinion can provide trustworthy and rich information (Kellett, 2011). Therefore, qualitative and arts-based measures were used to bypass the language abilities of the children but restricted the quantitative data to teachers' and parents' perspectives only. This is not unusual in children's studies. Among the studies included in the systematic review (Aithal et al, under review), only one study (Samariter, 2015) employed a self-reporting method i.e the Youth Self Report (Achenbach et al., 2008). This study however, involved adolescent participants with competent language abilities. Nevertheless, in future studies use of assisted technology, feedback tools or any alternatives ways of gathering perspectives of non-verbal and ability-diverse children. In addition, neuroimaging studies are needed to better understand the neural mechanisms contributing to the enhanced change in SCQ and SDQ scores as a result of the DMP intervention. This is particularly poignant given that the current study shows changes, particularly those in relation to social communication.

With regards to execution of the research design, this study was successful in randomisation and allocation concealment. However, computerised randomisation methods could have reduced any possibility for human bias in manual randomisation. Another limitation was that achieving blinding to reduce placebo in the measurements using rating scales answered by teachers and parents was impractical. Nonetheless, there are possibilities to achieve this by implementing clinician administered observational tools with assessor blinding measures where the clinicians administering the tests are not aware which group of children is receiving the intervention and which group is not. The other option to reduce the bias and placebo in testing would be randomised retrospective video analysis where the analyst is blinded about the participants' intervention.

The debate over ASD as a disorder and the neurodiversity movement arguing the condition is a distinct cognitive style and not a disorder highlight the inconsistencies in terminologies used and also the differences in strengths and deficit models (Miller, Rodriguez & Rourke, 2015). With these differences in mind, although the intervention aimed at resource enhancement and adopted a strength-based model, appropriate tools were not available to measure the increase of strengths with a positive attitude (Mottron, 2017). Despite the neurodiversity movement, available validated tools are mainly based on deficit models, mostly focusing on ASD's negative symptom reduction or decrement in challenges. To make a complete shift to a strength-based approach, the development of tools which capture improvements to match the intervention principles are necessary. Furthermore, tools which capture the embodied components would also be valuable to capture the nuances of DMP. Tools which are malleable through intervention might be able to provide more meaningful outcomes and thus highlights future targets of research.

The study adopted a crossover design to pilot an early stage trial. Since this study aimed to explore outcome measures related to ASD i.e. SCQ and SDQ in children with ASD, crossover design was applicable due ASD's long-term or pervasive character that assumes that there is no immediate cure. One of the strengths of this design is that it allows for greater homogeneity in the sample as it eliminates between-subject variability (Maclure, 1991). The design can also provide two folds of the actual sample size and more importantly from an ethical point of view all the participants receive intervention at some point of time and do not miss the opportunity to participate on a random chance. However, some researchers have argued that even when crossover trials are properly implemented with a washout period, there is less clarity in addressing the impact of a carryover effect (Senn, D'angelo & Potvin, 2004). This design also restricts the scope for symmetrical follow-up data collection as in the parallel group research design with separate

experimental and control groups. Therefore, for exploring long lasting effects of the intervention traditional RCT designs without crossover are highly recommended.

Intention to treat (ITT) analysis was used in the current study since this approach tends to avoid various misleading findings that can arise in intervention research. ITT analysis includes every subject who is randomised. A key advantage of this approach is that it estimates the efficacy of the intervention and is more accurate as it accepts that non-compliance and protocol deviations are likely to occur in clinical practice (Gupta, Mehrotra & Mehrotra, 2012). In the current study, rates for session attendance were reasonably good with only three out of the included 26 participating children not completing the intervention, and 23 of these children partaking in 70% or more of the sessions. The outcome measures, which were completed by either parents or teachers were however, collected for all participating children, irrespective of whether the child completed the intervention or not. This allowed for the ITT approach to be followed which is difficult to achieve when outcome data is missing (Altman, 2009; Can et al., 2011; Bell et al., 2014). In line with Dziura et al (2013) strategies for the prevention of missing data is key to minimizing the problem of missing data and highlights an advantage for conducting the study in a school setting i.e. as a result there was negligible amount of missing data. Teachers were accessible within schools to complete questionnaires and the data from the parents were collected during their termly school visits. This made data acquisition fairly straightforward.

7.3 Feasibility and future recommendations of caregivers' component

This study presents several limitations that will need to be considered for research in future studies. First, given that all the participants of this study were limited from the North West of England, they cannot be considered representative of the UK parents and teachers of children with ASD. Larger samples, diverse and wider representation of the population in the sample should be considered while replicating the present findings.

Another limitation for the quantitative strand concerns the bias involved in randomisation, allocation and blinding procedures of caregivers' groups. Due to practical shortcomings described earlier, the methods might have affected the findings. Similar to the concerns and recommendations as expressed with the children's wellbeing measures, are present with the tools used for wellbeing measurement of caregivers as they looked at decrement of stress or depression rather than positive scales of outcome measurement. Some variations in the scores of the participants could have also been influenced by the

time of year when assessment was carried out or the events preceding the assessment. For instance, the final assessment was carried out just before breaking for Christmas, where the additional workload of organising extracurricular events, buying gifts, meeting deadlines before the closure and many other factors might have reflected on the relatively poorer scores. To manage this issue, an in-depth qualitative analysis of caregivers' reports concerning subjective wellbeing and subjective perception of DMP sessions were analysed in this study.

The qualitative and arts-based strands could have been influenced by poor acoustic, video recording angles of the camera and room dimensions. Hence use of multiple cameras and cameras with motion capture functions can further the quality of investigation. In addition, English not being the native language of the researcher could have impacted the data collection. Concepts were clarified and checked if what the participants had expressed were perceived as correctly by paraphrasing it to them and also verifying the transcripts with the native English speaker.

The dance video recording was initially planned to be an interactive 40 minutes live performance. Due to the pandemic situation, it was changed into two short video clips and adapted to the best available resources.

The study retention rates were poor, with only 50% of participants in the DMP intervention arm attending at least 70% of the sessions until its end. This alarming retention rate leads to critical discussions on acceptance of the intervention by the participants, practicalities and ways to mitigate the influencing factors. The bidirectional influence of wellbeing can be explored only if the caregivers' attendance is good. Hence, speculations of the issues faced during this study and mitigation are discussed below:

- Acceptance of the intervention- it is possible that acceptance of DMP might be difficult by majority of individuals as not many people are comfortable moving and dancing in a group. The word dance in DMP and the novelty in the concept of DMP might have not attracted many adult participants despite the explanation about DMP in the participant information sheet in simple terms that dancing skills are not required for caregivers to be included in the study. Researchers have defined Kinesiophobia as "an excessive, irrational, and debilitating fear of physical movement and activity" (Vlaeyen et al., 1995: 240). Further, socio-cultural perception of dance, social status of dance, beliefs and opinions on gender stereotyping of dance might be some of the other reasons for movement not being comfortable to many and thus a hindrance to the acceptance of the intervention. Typecast of gender roles where mothers are perceived as the primary caregivers

might have attracted more female participants and one or two male participants amidst predominantly female participants in the group might have been additional reasons for the attrition of male participants from the group.

- The next reason for the poor of acceptance of DMP intervention could be the type of expectations from the DMP intervention. Participants reported their they came with the expectation of receiving *training* to use the skills to manage their children. Some of them expected *magical dance movement* or techniques that could *fix* the problems instantly and that gives tangible result directly. It was difficult for the participants to accept an intervention that invited self-exploration and highlighted the importance of self-care before employing techniques with others. It was challenging for some of the participants to engage emotionally, absorb metaphorical and symbolic implications during DMP sessions which was not an issue amongst participants in the Indian study. This could be another reason of why the intervention was not received as well by parents in the present study compared to the study in India.
- Another barrier for the acceptance of DMP could be the fact that intervention was offered as part of a research programme with restrictions in funds and time. The caregivers' issues were not severe to seek clinical assistance. It was offered with principles relating to promoting resilience and wellbeing rather than problem reduction. It is possible that participating parents and teaching staff perceived the need to seek help only when there were problems rather than preventing the development of ill health.
- Physical Constraints- Major constrains to run the study with a larger sample size were with regards to time and space. Fitting the session with the schedule of the school, therapist's availability and the participants was particularly difficult. Many caregivers who were interested in participating could not attend because the session timings clashed with their work hours. Single parents with more than one child found it challenging to manage picking up and dropping off timings where children were studying in other schools. Some of them missed the sessions as they were not able to find alternative caretaking support to look after their babies or children with additional needs for them to attend the sessions. Distance to commute and having many other commitments were also reported as reasons for not being able to participate fully in the study. There were interruptions due to unexpected health issues or other emergencies of children or other family

members. A couple of children were not fond of seeing their parents in school and threw tantrums to express their discomfort. Parents had to drop out after failing to reassure their children of their presence in the school. Teachers' sessions were scheduled after their work hours. Hence many teachers with family commitments were not able to attend even if they expressed interest. Some participants missed the sessions as sudden meetings were scheduled by the school. Compulsory school trips, exhibition, school events, extra-curricular activities came in the way as priority activities and clashed with the session timings. Finding a suitable space without any interruption consistently was a major issue to provide a therapeutically safe place to the participants. Despite 'DMP session in progress' notice on the door, there were constant disruptions by the staff members, security or children sometimes for a quick question and sometimes the participants were pulled out of the sessions *urgently* needed to manage a crisis or meltdown of a student. These difficulties in attending the sessions and adhering to the protocol due to competing time commitments was noted by other researchers as well (Ruiz-Robledillo et al., 2015).

- Mitigation-
 - ❖ For better recruitment and retention of the participants, Yalom (1966) and Bernard and Drob (1989) identified adequate preparation as the key factor.
 - ❖ Offering taster sessions as a social event to the caregivers when they attend parent-teacher meetings or other compulsory activities at school in large number.
 - ❖ Dilgul et al. (2018) suggest offering participant information using different modes such as audio-visual alongside the written information.
 - ❖ Strong contact and communication with the receptionists, housekeeping staff and project coordinators at the school. Being aware of their changing schedules and their covers.
 - ❖ Requesting school management or securing enough funding to make provisions to run the sessions as part of the school's timetable with cover teachers/substitute teaching assistants in place. Arranging sessions as part of CPD or HR activities for the teachers when compelling tasks do not come in the way of DMP sessions.
 - ❖ Scheduling the sessions during relatively less demanding time of the year. For instance, avoiding sessions nearer Christmas events, assessments or annual school days.

- ❖ Recruitment of larger number of participants than the ideal number to the DMP groups.
- ❖ Incentives and socialising time before or after the sessions might also be provided to motivate the participants and could also be asked whether they have cultural requirements or preference for single gender intervention groups (Dilgul et al.,2018).
- ❖ Longer duration of sessions instead of short frequent sessions to minimise commuting time. Simple study methodologies or weakened to accommodate time-management issues faced by the caregivers can be designed. Future studies could investigate service delivery methods that minimize time and resource commitments of participants, such as technology facilitated interventions (Fish, Brimson & Lynch, 2016).
- ❖ If schools do not have school busses, scheduling the sessions during school drop off time is recommended. Pick up time might not always work as parents might have commitments to pick up other children from different schools. However, to attract parents going to work maybe weekend sessions for long duration might work. Supporting parents in better planning and preparation to have temporary caretakers in place for other children for them to attend the sessions.

7.4 Implications of the study

Findings from this doctoral study have implications for the clinical practice, training, and future research in the area of DMP with children on the autism spectrum, their caregivers and beyond.

From a clinical practice perspective, the study has developed and piloted two intervention protocols which can potentially be useful in clinical settings for children with the modifications described in chapter five. There is a growing demand for accountability and evidence-based interventions within this climate of budget cuts and limited funding for intervention and intervention-based research in ASD (Barrett & Conostas, 2014; Buescher et al., 2014). As described in the background information, ASD is a highly prevalent with serious influence on wellbeing of both the children affected and caregivers as well as on financial resources of the society. Thus, the demand for finding effective interventions are high.

The findings of this study support for a caregivers and family-centred, process-oriented and holistic DMP intervention. It is evident from the literature and reports of the participants of this study that caregivers are in need for support and DMP has shown potential. However, several questions with respect to various dimensions, complexities and practicalities of which type of setting, when, where etc are best suited to offer DMP remain unanswered at this point. But, it is worth for the clinical practitioners to orient themselves towards caregivers and family centred approach. Next, the outcomes of the intervention also have highlighted that it is time to rethink and shift the mind set from outcomes looking at symptom reduction to enhancing wellbeing. Although, documenting the findings of process-oriented approaches such as DMP may be time consuming and may not always have definitive outputs as in outcome-oriented approaches; this study has captured the benefits of a process-oriented approach. The study highlights that process-oriented approaches have an advantage to have more meaningful and easily transferable outputs as the changes observed are coming out with a sense of self responsibility and motivation. Another input to the clinical practice is to implement layered objectives along with differentiated instructions to address the heterogeneity of a group of children with various abilities and interests. Even though holding a heterogenous group might be energy consuming; considering the richness of the possibilities a diverse group can offer a higher value when the client's best interest are considered (Nicholas & Forrester, 1999). The strain on the therapist can be managed with the support of a well-co-ordinated co-facilitator. In this way a heterogenous group can be supported through DMP as well as reach out to many people at the same time.

From the perspective of dance movement psychotherapists, those in training or upcoming professionals, the study can offer several things. Due to the flexible and yet replicable nature of the intervention protocols, it can be helpful for the dance movement psychotherapist to adapt and tailor the protocol to suit their own training and preferences as well as to meet the needs of the specific group they may be working with. The findings of the study have provided attention to the detail of the process, while simultaneously offering a broad picture. Case illustrations and examples can be used for training the upcoming professionals in the field. For instance, the importance of a proper closure and different ways in which the groups can respond during the time for closure are some of the materials which can feed forward for training and educational purposes.

With regards to research, findings from the current study show promising effects of the DMP intervention on measures of children's and caregivers' wellbeing. Modest improvements in social communication scores and in strengths and difficulties suggest

that, group DMP has been effective. A crossover design was employed in the current study and although there were no carryover or period effects, it is recommended to employ a different study design in the future that will allow for follow-up measures to be conducted to assess the long-term effects of the DMP intervention. Future studies should also consider the *dosage* period for the DMP intervention, utilising a longer intervention period in order to detect intervention effects and enhance intervention related improvements, especially for those children who are deemed to be more in need of receiving support for their wellbeing.

The findings of the study indicate that social, communication and emotional independence can be improved through an intervention that utilises the creative arts, highlighting the value of these creative therapies for improving the lives of young vulnerable groups who typically, due to limited verbal skills, would be unsuited to more traditional talking therapies. Future studies could include large scale multi-centred RCT to empirically validate the effectiveness of DMP for children with ASD. Studies of this type may enable the intervention to be more readily available for children with ASD and their caregivers. This can potentially have long-term impact on improving productivity, reducing economic burden and overall wellbeing in the society.

Overall, this doctoral study has shown promising benefits of DMP for children with ASD and their caregivers. However, the findings need to be replicated with a larger sample to confirm and verify these pilot study results. The next chapter summarises the whole study and presents concluding remarks.

CHAPTER EIGHT: SUMMARY AND CONCLUSIONS

This final chapter of the thesis intends to draw meaningful conclusions to reach out to diverse audience. To begin with, this doctoral study was conceived with an aim to investigate whether DMP can enhance the wellbeing of children with ASD and their caregivers. As a reminder, this study had three objectives:

1. To evaluate the outcomes of DMP intervention on wellbeing of children on the autism spectrum and their caregivers
2. To explore the therapeutic process underlying the effectiveness of a particular DMP intervention with children on the autism spectrum and their caregivers
3. To explore the relationship between wellbeing of children on the autism spectrum and their caregivers

The background information of all the key terms were explored, identified several gaps, demonstrated the need for this study and arrived at three different sets of research questions.

Using a convergent mixed-methods design, the study was conducted in two phases.

8.1 Phase I- Systematic review

In the first phase, a systematic review was conducted and two intervention protocols were developed. The systematic review on DMP for children with ASD reviewed seven studies and the information was synthesised to arrive at the following key points:

Theoretical Framework- Many studies did not report this aspect. However, a person-centred approach along with developmental and psychodynamic frameworks with references to social engagement and intersubjectivity theories were found to be the most common ones.

Techniques- Mirroring was identified as one of most common techniques used by dance movement psychotherapists with children on the autism spectrum. In addition, sensorimotor explorations were creatively merged alongside the use of play techniques, rhythm and props.

Overall process- The structure of the full DMP intervention programme was described only in two studies and most of the studies described only the session structure. The three studies working with groups followed a semi-structured session.

Dosage- Sessions of 30-60 minutes duration were delivered mostly in SEN settings with the frequency of once or twice a week for 6-8 weeks.

It was also found that various tools such as retrospective video analysis, semi-structured interviews and psychometric questionnaires were used by the studies to examine the contribution of DMP for children with ASD. Most frequently occurring outcomes fell under the social domain followed by cognitive, emotional and physical. Improvement in group connections, therapeutic relationship, awareness of self and others, decrement in repetitive movements, improvement in on task behaviours were documented in these studies. However, due poor methodological issues and poor reporting, evidence for DMP's effectiveness remained inconclusive. Hence well-designed, detailed studies on the impact of DMP for children with ASD were recommended. In addition, given the limited explanations of the key therapeutic factors that bring change, it was recommended to provided attention towards further understanding the therapeutic process before conducting well designed RCTs. It was also inferred from the review that qualitative and arts-based research designs that focus on the therapeutic process could be useful with regards to this issue.

8.2 Protocol development and fidelity assessment

Considering the key findings of the systematic review along with theoretical foundations and clinical experiences of the therapist, supervisor and researcher, a DMP intervention protocol with an integrative framework was developed for children with ASD. A systematic review on the caregivers of children with ASD was not feasible due to the scarcity of studies. Nonetheless, based on the preliminary study that was conducted in India and literature from other similar projects, the second intervention protocol for the caregivers of children with ASD was also developed and reported as per the TIDieR guidelines. These protocols were piloted in a crossover convergent mixed-methods study in the phase II of the study. Fidelity assessments were conducted to check if the sessions adhered to the protocols by calculating percentage of adherence to each criterion, inter-rater reliability and qualitative remarks on the video footage of the sessions. The findings showed 75% and above adherence, good agreement among the three raters (researcher, therapist and an external expert) and reflected that the protocols were implemented across groups consistently. The adherence and agreement were particularly better in children's protocol. The qualitative remarks noted by the raters were further used to understand the reasons for the difference in opinions. After analysing the remarks and ratings several

amendments to the original protocols were suggested for further development. This phase of the study is represented as the trunk of interconnected trees in Figure 8.1.



Figure 8. 1 Summary of the findings

8.3 Phase II- Pilot intervention

During the phase II of the study, two intervention protocols developed during phase I were piloted using convergent mixed-methods approach. The participants were recruited from two SEN schools from the North West of England. The study had children with ASD as one set of participants and their caregivers (including parents and teachers) as another set of participants. 26 children (21 males) aged between 8-13 years across five clusters participated in ten DMP sessions of 40 min each. During the crossover pilot intervention, the Social Communication Questionnaire (SCQ) and Strengths and Difficulties Questionnaire (SDQ) were administered before and after DMP in both period 1 and period 2.

Results showed no significant carryover or period effects for either the SCQ or SDQ. A significant intervention effect was found only for SCQ but not for SDQ. ANCOVAs were performed on the data before the crossover to test for differences in SCQ and SDQ scores between the DMP intervention and control groups while controlling for pre-intervention scores. Those in the DMP intervention group presented significantly lower SCQ scores following the intervention period than those in the control group. No significant differences in post-intervention SDQ scores were found between DMP intervention and control groups. However, Minimal Clinically Important Differences (MCID) were reached for both SCQ and SDQ measures before crossover for those in the DMP intervention group.

Moreover, repeated measures ANOVAs performed on SCQ and SDQ measures following crossover were significant, with the change in both SCQ and SDQ pre- and post-intervention being significantly greater for those in the DMP intervention than the control group. The analysis revealed that the DMP intervention was having a clinically and statistically significant effect on SCQ and SDQ measures with stronger effects on social and communication aspects.

The qualitative themes highlighted the role of personal movement experiences of the participants and the group processes which collectively contributed to the enhancement of social and emotional wellbeing that were observed as the product of DMP intervention. The themes also revealed that the diversity in a group added various layered dimensions to the outlook of the processes involved in DMP. The findings also showed the dynamic, non-linear and complex nature with several layers of interconnectedness and intricacies in the processes associated while working with children on the autism

spectrum. During artistic inquiry process considering several significant moments of change and reflections of the researcher it was inferred that the greatest power for transformation or change were hidden within simple moments and experiences. Those simple moments acted as the key to open up innumerable possibilities for children with ASD. These three sets of findings are shown as the three offshoots of the small tree in figure 8.1.

Drawing attention to the larger tree in figure 8.1, representing the caregivers, it can be noticed that there are three offshoots emerging from the bigger tree as well. 37 caregivers of children with ASD participated in five DMP sessions lasting 90 minutes each. Adult Wellbeing Scale (AWS) and Parenting Stress Index- Short Form (PSI-SF) were the two outcome measures used for measuring the impact of DMP intervention on caregiver's wellbeing and parental stress. Due meagre recruitment of the participants interested to take part in the intervention group, a crossover of the intervention did not happen as planned. Instead the design turned out to be a non-randomised DMP intervention v/s control group comparison.

The MCID was achieved for both outcome measures used in the study i.e. PSI-SF and AWS in the DMP intervention group but not in the control group. Results from the ANCOVAs showed a significant difference in post-intervention scores between DMP intervention and control groups for AWS but not for PSI-SF. In addition, a significant association was found between pre-intervention scores, number of sessions attended with the post-intervention scores of both AWS and PSI-SF. These statistical outputs indicate that as a pilot study the DMP intervention was having a clinically significant effect on both PSI-SF and AWS outcome measures in caregivers and a statistically significant effect only on the AWS used as caregivers' wellbeing outcome measure in the study.

From the qualitative strand, six main themes related to the DMP process and perceived outcomes were identified. These processes showed the helpful factors which facilitated the participants to experience some positive outcomes immediately during the sessions. In addition, several defensive and unhelpful factors which might have obstructed the process of the caregivers to reach deeper and potentially experience greater positive impacts of DMP. The artistic inquiry process reflected on the polarities of suppressed, painful and darker embodied shades of life trying to emerge out and hide at the same time.

The study has successfully met the first two objectives of the study to explore the process and evaluate the outcomes of DMP on children with ASD and their caregivers. It can be concluded that DMP has had a positive impact on the wellbeing of children with ASD. The intervention has shown promising results on the social and emotional wellbeing of children with ASD irrespective of whether they preferred verbal or non-verbal mode of communication. The caregivers' outcomes were highly dependent on their attendance and engagement. Overall, the findings highlight the value of creative therapies for improving the lives of young vulnerable groups. However, the third objective on the bidirectional influence of the wellbeing on caregivers on children and vice versa was explored minimally as attrition was too high to statistically find the co-relation between the two factors. The case vignettes although inconclusive, do indicate some positive trends.

As indicated earlier, this study has only provided a preliminary evidence. It is highly essential to replicate these findings in larger-scale studies and the effects of the intervention protocols should be explored further in this client group. The study has identified several drawbacks and challenges to successfully run the study and has provided several recommendations for future research studies. The recommendations included certain modifications to the intervention protocols, multi-centred RCT with measures to minimise detection bias and attrition bias in the quantitative strand, applying validated and user-friendly assessment tools which indicate positive growth rather than reduction in challenges, measuring relevant biomarkers, involving the school environment in a systematic manner, and considering the perspectives of children participants at all stages of the research project. The study has also pointed out that a traditional parallel arm study might be more helpful than the crossover design if long term effects of the intervention and symmetrical follow up data needs to be collected. Nevertheless, the systematic and comprehensive approach presented in the study suggest that the preliminary and exploratory methods that were used in this doctoral study are promising to be adopted and developed in future DMP research. Importance to the process in DMP while being able to demonstrate evidence is vital to support the growth of DMP. Thus, by extending and refining these transparently presented research findings will enhance the possibilities to organise, analyse and understand the data collected to make more meaningful contributions to the society.

As the concluding statements here are four lines from the Gīta in Samskrita language, which stand by the principle that every living being has and behaves as per its innate unique nature. So, what is the point in restraining oneself from natural expression? Just flow and grow with the natural strength. Wellbeing is in staying with own strengths.

*“sadrśam chēśtatē svasyāh prakrtēh jnānavānapi
prakrtim yānti bhūtāni nigraham kim karishyati”
“shrēyān svadharmo viguṇah paradharmāt svanuśthitāt
svadharmē nidhanam śrēyah paradharmō bhayāvahah”*

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Looks like it is the first page! And it is a beautiful one.....

APPENDICES

APPENDIX I

QUESTIONNAIRES

i) Adult Wellbeing Scale

Name of the Child _____ Completed by _____

Relationship to the child _____ Date _____

This form has been designed so that you can show how you have been feeling in the past few days.

Read each item in turn and UNDERLINE the response which shows best how you are feeling or have been feeling in the last few days.

Please complete the entire questionnaire.

1. I feel cheerful

Yes, definitely Yes, sometimes No, not much No, not at all

2. I can sit down and relax quite easily

Yes, definitely Yes, sometimes No, not much No, not at all

3. My appetite is

Very poor Fairly poor Quite good Very good

4. I lose my temper and shout and snap at others

Yes, definitely Yes, sometimes No, not much No, not at all

5. I can laugh and feel amused

Yes, definitely Yes, sometimes No, not much No, not at all

6. I feel I might lose control and hit or hurt someone

Sometimes Occasionally Rarely Never

7. I have an uncomfortable feeling like butterflies in the stomach

Yes, definitely Yes, sometimes Not very often Not at all

8. The thought of hurting myself occurs to me

Sometimes Not very often Hardly ever Not at all

9. I'm awake before I need to get up

For 2 hours For about 1 hour For less than Not at all. I
or more 1 hour sleep until it is time to get up

10. I feel tense or 'wound up'

Yes, definitely Yes, sometimes No, not much No, not at all

11. I feel like harming myself

Yes, definitely Yes, sometimes No, not much No, not at all

12. I've kept up my old interests

Yes, most of them Yes, some of them No, not many of them No, none of them

13. I am patient with other people

All the time Most of the time Some of the time Hardly ever

14. I get scared or panicky for no very good reason

Yes, definitely Yes, sometimes No, not much No, not at all

15. I get angry with myself or call myself names

Yes, definitely Yes, sometimes Not often No, not at all

16. People upset me so that I feel like slamming doors or banging about

Yes, often Yes, sometimes Only occasionally Not at all

17. I can go out on my own without feeling anxious

Yes, always Yes, sometimes No, not often No, I never can

18. Lately I have been getting annoyed with myself

Very much so Rather a lot Not much Not at all

Reference

Snaith RP, Constantopoulos AA, Jardine MY & McGuffin P (1978) A clinical scale for the self-assessment of irritability. *British Journal of Psychiatry*. **132**: 163–71.

ii) Strengths and Difficulties Questionnaire

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems daft! Please give your answers on the basis of your child's behaviour **over the last month**.

Child's Name

Male/Female

Date of Birth.....

	Not True	Somewhat True	Certainly True
Considerate of other people's feelings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Restless, overactive, cannot stay still for long	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often complains of headaches, stomach-aches or sickness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shares readily with other children (treats, toys, pencils etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often has temper tantrums or hot tempers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rather solitary, tends to play alone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Generally obedient, usually does what adults request	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Many worries, often seems worried	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Helpful if someone is hurt, upset or feeling ill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Constantly fidgeting or squirming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has at least one good friend	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often fights with other children or bullies them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often unhappy, down-hearted or tearful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Generally liked by other children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Easily distracted, concentration wanders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nervous or clingy in new situations, easily loses confidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kind to younger children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often lies or cheats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Picked on or bullied by other children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often volunteers to help others (parents, teachers, other children)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thinks things out before acting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Steals from home, school or elsewhere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gets on better with adults than with other children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Many fears, easily scared	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sees tasks through to the end, good attention span	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Do you have any other comments or concerns?

Please turn over - there are a few more questions on the other side

Since coming to the clinic, are your child's problems:

Much worse	A bit worse	About the same	A bit better	Much better
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Has coming to the clinic been helpful in other ways, e.g. providing information or making the problems more bearable?

Not at all	Only a little	Quite a lot	A great deal
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Over the last month, has your child had difficulties in one or more of the following areas: emotions, concentration, behaviour or being able to get on with other people?

No	Yes-minor difficulties	Yes-definite difficulties	Yes-severe difficulties
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If you have answered "Yes", please answer the following questions about these difficulties:

- Do the difficulties upset or distress your child?

Not at all	Only a little	Quite a lot	A great deal
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Do the difficulties interfere with your child's everyday life in the following areas?

	Not at all	Only a little	Quite a lot	A great deal
HOME LIFE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FRIENDSHIPS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CLASSROOM LEARNING	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LEISURE ACTIVITIES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Do the difficulties put a burden on you or the family as a whole?

Not at all	Only a little	Quite a lot	A great deal
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Signature

Date

Mother/Father/Other (please specify:)

Thank you very much for your help

iii) PARENTING STRESS INDEX –SHORT FORM (PSI-SF)

Name: Child's Name: Date: Answer all the items. Mark X as your response (only one response per item)	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
I often have the feeling that I cannot handle things very well					
I find myself giving up more of my life to meet my child's needs than I ever expected					
I feel trapped by my responsibilities as a parent					
Since having my child I have been unable to try new and different things					
Since having my child I feel that I am almost never able to do things that I like to do					
I am unhappy with the last purchase of clothing I made for myself					
There are quite a few things that bother me about my life					
Having a child has caused more problems than I expected in my relationship with my spouse					
I feel alone and without friends					
When I go to a party I usually expect not to enjoy myself					
I am not as interested in people as I used to be					

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
I don't enjoy things as I used to					
My child rarely does things for me that make me feel good					
Most times I feel that my child likes me and wants to be close to me					
My child smiles at me much less than I expected					
When I do things for my child, I get the feeling that my efforts are not appreciated very much					
When playing, my child doesn't often giggle or laugh.					
My child doesn't seem to learn as much as most children					
My child is not able to do as much as I expected					
My child doesn't seem to smile as much as most children.					
It takes a long time and it is really hard for my child to get used to new things					
I feel that I am: (being a parent)					
I expected to have closer and warmer feelings for my child than I do and this bothers me					

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
Sometimes my child does things that bother me just to be mean					
There are some things my child does that really bother me a lot					
My child generally wakes up in a bad mood					
I feel that my child is very moody and easily upset					
My child does a few things that bother me a great deal					
My child reacts very strongly when something happens that my child doesn't like					
My child gets upset easily over the smallest thing					
My child's sleeping and eating schedule was much harder to establish than I expected.					
I have found that getting my child to do something is:.....					
Think carefully and count the number of things which your child does that bothers you.....					
My child turned out to be more of a problem than I expected					
My child makes more demands on me than most children.					
My child seems to cry more often than most children					

iv) Social Communication Questionnaire (SCQ)

Michael Rutter, M.D., F.R.S., Anthony Bailey, M.D., Sibel Kazak Berument, Ph.D., Catherine Lord, Ph.D., and Andrew Pickles, Ph.D.

Name of Subject: _____ D.O.B. _____ Interview Date _____ Age: _____

Gender: F M Name of Respondent: _____ Relation to Subject: _____

Directions: Thank you for taking the time to complete this questionnaire. Please answer each question by selecting *yes* or *no*. A few questions ask about several related types of behavior; please select *yes* if *any* of these behaviors were present during the past 3 months. Although you may be uncertain about whether some behaviors were present or not, please answer *yes* or *no* to every question on the basis of what you think.

Item	Yes (√)	No (×)
1. Is she/he now able to talk using short phrases or sentences? If <i>no</i> , skip to question 8		
2. Do you have a to and fro “conversation” with her/him that involves taking turns or building on what you have said?		
3. Does she/he ever use odd phrases or say the same thing over and over in almost exactly the same way (either phrases that she/he hears other people use or ones that she/he makes up)?		
4. Does she/he ever use socially inappropriate questions or statements? For example, does she/he ever regularly ask personal questions or make personal comments at awkward times?		
5. Does she/he ever get his/her pronouns mixed up (e.g., saying <i>you</i> or <i>she/he</i> for <i>I</i>)?		
6. Does she/he ever use words that she/he seems to have invented or made up her/himself; put things in odd, indirect ways; or use metaphorical ways of saying things (e.g., saying <i>hot rain</i> for <i>steam</i>)?		
7. Does she/he ever say the same thing over and over in exactly the same way or insist that you say the same thing over and over again?		
8. Does she/he have things that she/he seems to do in a very particular way or order or rituals that she/he insists that you go through?		
9. Does her/his facial expressions usually seem appropriate to the particular situation, as far as you can tell?		
10. Does she/he ever use your hand like a tool or as if it were part of his/her own body (e.g., pointing with your finger or putting your hand on a doorknob to get you to open the door)?		
11. Does she/he ever have any interests that preoccupy her/him and might seem odd to other people (e.g., traffic lights, drain pipes, or timetables)?		

Item	Yes (√)	No (×)
12. Does she/he ever seem to be more interested in parts of a toy or an object (e.g., spinning the wheels of a car), rather than in using the object as it was intended?		
13. Does she/he ever have any special interests that are <i>unusual</i> in their intensity but otherwise appropriate for his/her age and peer group (e.g., trains or dinosaurs)?		
14. Does she/he ever seem to be <i>unusually</i> interested in the sight, feel, sound, taste, or smell of things or people?		
15. Does she/he ever have any mannerisms or off ways of moving her/his hands or fingers, such as flapping or moving her/his fingers in front of her/his eyes?		
16. Does she/he ever have any complicated movements of her/his whole body, such as spinning or repeatedly bouncing up and down?		
17. Does she/he ever injure her/himself deliberately, such as by biting her/his arm or banging her/his head?		
18. Does she/he ever have any objects (<i>other</i> than a soft toy or comfort blanket) that she/he <i>has</i> to carry around?		
19. Does she/he have any particular friends or a best friend?		
20. Does she/he ever talk with you just to be friendly (rather than to get something)?		
21. Does she/he ever <i>spontaneously</i> copy you (or other people) or what you are doing (such as vacuuming, gardening, or mending things)?		
22. Does she/he ever spontaneously point at things around her/him just to show you things (not because she/he wants them)?		
23. Does she/he ever use gestures, other than pointing or pulling your hand, to let you know what she/he wants?		
24. Does she/he nod her/his head to indicate <i>yes</i> ?		
25. Does she/he shake her/his head to indicate <i>no</i> ?		
26. Does she/he usually look at you directly in the face when doing things with you or talking with you?		
27. Does she/he smile back if someone smiles at her/him?		
28. Does she/he ever show you things that interest her/him to engage your attention?		
29. Does she/he ever offer to share things other than food with you?		
30. Does she/he ever seem to want you to join in her/his enjoyment of something?		

Item**Yes****No**

(√)

(×)

31. Does she/he ever try to comfort you if you are sad or hurt?
32. If she/he wants something or wants help, does she/he look at you and use gestures with sounds or words to get your attention?
33. Does she/he show a normal range of facial expressions?
34. Does she/he ever spontaneously join in and try to copy the actions in social games, such as *The Mulberry Bush* or *London Bridges Is Falling Down*?
35. Does she/he play any pretend or make-believe games?
36. Does she/he seem interested in other children of approximately the same age whom she/he does not know?
37. Does she/he respond positively when another child approaches her/him?
38. If you come into a room and start talking to her/him without calling her/his name, does she/he usually look up and pay attention to you?
39. Does she/he ever play imaginative games with another child in such a way that you can tell that each child understands what the other is pretending?
40. Does she/he play cooperatively in games that need some form of joining in with a group of other children, such as hide-and-seek or ball games?

APPENDIX II

QUALITATIVE AND ARTS BASED SCHEDULE

i) Interview of the therapists (after every session)

- a. What are the key movements that you have identified in the participants?
- b. What type of changes were brought in the movement?
- c. Where is the growth if you have noticed any?
- d. Could you describe experiences of your body during the session if you have noticed any?

ii) Interview of the caregivers (after the intervention programme)

- a) What are the changes that you have noticed in
 - Yourself
 - Your child
 - Your relationship with your child

iii) Arts based (caregivers)

- a. Before and after every session: What movement would you use to express how you are feeling now?
- b. Final session: Could you show your journey in these sessions in movement?

APPENDIX III

The TIDieR (Template for Intervention Description and Replication) Checklist*: Children

Information to include when describing an intervention and the location of the information



Item number	Item	Where located **	
1	The Eternal dance of Windmills- A Dance Movement Psychotherapy Intervention Protocol for the Caregivers of Children with an ASD	Primary paper (page or appendix number)	Other † (details)
BRIEF NAME			
1.	Provide the name or a phrase that describes the intervention.	129	
WHY			
2.	Describe any rationale, theory, or goal of the elements essential to the intervention.	26-31	
WHAT			
3.	Materials: Describe any physical or informational materials used in the intervention, including those provided to participants or used in intervention delivery or in training of intervention providers. Provide information on where the materials can be accessed (e.g. online appendix, URL).	137-138	
4.	Procedures: Describe each of the procedures, activities, and/or processes used in the intervention, including any enabling or support activities.	132-136	
WHO PROVIDED			
5.	For each category of intervention provider (e.g. psychologist, nursing assistant), describe their expertise, background and any specific training given.	146	
HOW			
6.	Describe the modes of delivery (e.g. face-to-face or by some other mechanism, such as internet or telephone) of the intervention and whether it was provided individually or in a group.	147-148	
WHERE			
7.	Describe the type(s) of location(s) where the intervention occurred, including any necessary infrastructure or relevant features.	69	

	WHEN and HOW MUCH		
8.	Describe the number of times the intervention was delivered and over what period of time including the number of sessions, their schedule, and their duration, intensity or dose.	69 and 132	
	TAILORING		
9.	If the intervention was planned to be personalised, titrated or adapted, then describe what, why, when, and how.	132-136	
	MODIFICATIONS		
10.†	If the intervention was modified during the course of the study, describe the changes (what, why, when, and how).	132-136	
	HOW WELL		
11.	Planned: If intervention adherence or fidelity was assessed, describe how and by whom, and if any strategies were used to maintain or improve fidelity, describe them.	150-167	
12.‡	Actual: If intervention adherence or fidelity was assessed, describe the extent to which the intervention was delivered as planned.		

** **Authors** - use N/A if an item is not applicable for the intervention being described. **Reviewers** – use ‘?’ if information about the element is not reported/not sufficiently reported.

† If the information is not provided in the primary paper, give details of where this information is available. This may include locations such as a published protocol or other published papers (provide citation details) or a website (provide the URL).

‡ If completing the TIDieR checklist for a protocol, these items are not relevant to the protocol and cannot be described until the study is complete.

* We strongly recommend using this checklist in conjunction with the TIDieR guide (see *BMJ* 2014;348: g1687) which contains an explanation and elaboration for each item.

* The focus of TIDieR is on reporting details of the intervention elements (and where relevant, comparison elements) of a study. Other elements and methodological features of studies are covered by other reporting statements and checklists and have not been duplicated as part of the TIDieR checklist. When a **randomised trial** is being reported, the TIDieR checklist should be used in conjunction with the CONSORT statement (see www.consort-statement.org) as an extension of **Item 5 of the CONSORT 2010 Statement**. When a **clinical trial protocol** is being reported, the TIDieR checklist should be used in conjunction with the SPIRIT statement as an extension of **Item 11 of the SPIRIT 2013 Statement** (see www.spirit-statement.org). For alternate study designs, TIDieR can be used in conjunction with the appropriate checklist for that study design (see www.equator-network.org).

APPENDIX IV

The TIDieR (Template for Intervention Description and Replication) Checklist*: Caregivers

Information to include when describing an intervention and the location of the information



Item number	Item	Where located **	
1	The Eternal dance of Windmills- A Dance Movement Psychotherapy Intervention Protocol for the Caregivers of Children with an ASD	Primary paper (page or appendix number)	Other † (details)
BRIEF NAME			
1.	Provide the name or a phrase that describes the intervention.	138	
WHY			
2.	Describe any rationale, theory, or goal of the elements essential to the intervention.	36-37	
WHAT			
3.	Materials: Describe any physical or informational materials used in the intervention, including those provided to participants or used in intervention delivery or in training of intervention providers. Provide information on where the materials can be accessed (e.g. online appendix, URL).	143-146	
4.	Procedures: Describe each of the procedures, activities, and/or processes used in the intervention, including any enabling or support activities.	143-146	
WHO PROVIDED			
5.	For each category of intervention provider (e.g. psychologist, nursing assistant), describe their expertise, background and any specific training given.	146	
HOW			
6.	Describe the modes of delivery (e.g. face-to-face or by some other mechanism, such as internet or telephone) of the intervention and whether it was provided individually or in a group.	145-146	
WHERE			
7.	Describe the type(s) of location(s) where the intervention occurred, including any necessary infrastructure or relevant features.	143	

	WHEN and HOW MUCH		
8.	Describe the number of times the intervention was delivered and over what period of time including the number of sessions, their schedule, and their duration, intensity or dose.	143	
	TAILORING		
9.	If the intervention was planned to be personalised, titrated or adapted, then describe what, why, when, and how.	141-146	
	MODIFICATIONS		
10.†	If the intervention was modified during the course of the study, describe the changes (what, why, when, and how).	141-146	
	HOW WELL		
11.	Planned: If intervention adherence or fidelity was assessed, describe how and by whom, and if any strategies were used to maintain or improve fidelity, describe them.	150-167	
12.‡	Actual: If intervention adherence or fidelity was assessed, describe the extent to which the intervention was delivered as planned.		

** **Authors** - use N/A if an item is not applicable for the intervention being described. **Reviewers** – use ‘?’ if information about the element is not reported/not sufficiently reported.

† If the information is not provided in the primary paper, give details of where this information is available. This may include locations such as a published protocol or other published papers (provide citation details) or a website (provide the URL).

‡ If completing the TIDieR checklist for a protocol, these items are not relevant to the protocol and cannot be described until the study is complete.

* We strongly recommend using this checklist in conjunction with the TIDieR guide (see *BMJ* 2014;348: g1687) which contains an explanation and elaboration for each item.

* The focus of TIDieR is on reporting details of the intervention elements (and where relevant, comparison elements) of a study. Other elements and methodological features of studies are covered by other reporting statements and checklists and have not been duplicated as part of the TIDieR checklist. When a **randomised trial** is being reported, the TIDieR checklist should be used in conjunction with the CONSORT statement (see www.consort-statement.org) as an extension of **Item 5 of the CONSORT 2010 Statement**. When a **clinical trial protocol** is being reported, the TIDieR checklist should be used in conjunction with the SPIRIT statement as an extension of **Item 11 of the SPIRIT 2013 Statement** (see www.spirit-statement.org). For alternate study designs, TIDieR can be used in conjunction with the appropriate checklist for that study design (see www.equator-network.org).

APPENDIX V
CONSENT FORMS



a) Invitation Letter and Reply Slip

20/05/2018

Private & Confidential

Name of Participant

Address

Dear

I have been given your details by your child's school teacher..... who has told me that you may be interested in the study entitled "Dance Movement Psychotherapy for the Wellbeing of Children on the Autism Spectrum and their Caregivers: A Multidisciplinary Mixed-Methods Approach" which is being carried out for improving the overall wellbeing of children on the autism spectrum and their caregivers. Thank you for your interest.

Please feel free to read the enclosed Participants' Information Sheet outlining the study and explaining what your participation would involve.

If you would like to find out more about the study or to be contacted regarding the intervention programme, please return the enclosed Reply Slip in the envelope provided. Alternatively, you could call me on 07503548329 or email my secure email address aithals@edgehill.ac.uk

Please note that if I don't hear from you before **27.09.18** I will assume that you do not want to participate in this research and you will not be contacted again about it.

If you decide to take part, you can withdraw until four weeks after the final participation. Your withdrawal or participation in the research will not affect your child in the school. You will have 30 days to inform the researcher if you wish to withdraw the data. You need to inform the researcher via email or phone call.

For questions about your rights or any dissatisfaction with any part of this study, you can contact, anonymously if you wish, either the researcher in the first instance, her supervisor, or an independent person. The contact details are provided below:

Director of studies / Supervisor:

Professor Vicky Karkou, Chair of Dance, Arts and Wellbeing, Faculty of Arts and Sciences

Tel: 01695 657347, e-mail: Karkouv@edgehill.ac.uk

Independent member of staff:

Professor Helen Newall, Professor of Theatre Praxis, Department of Performing Arts, Faculty of Arts and Sciences Tel: 01695 650704, e-mail: newallh@edgehill.ac.uk

Thank you

With best wishes

Yours sincerely,

Supriitha Aithal,

Reply Slip

I would like to be contacted to find out about the above research or/and to arrange a date for an interview.

NAME.....

PHONE NUMBER.....

ADDRESS.....

I AM NOT AVAILABE ON.....

b) Participants' Information Sheet

You and your child are being invited to take part in a research study. Before you decide whether you both would like to take part or not it is important for you to understand why the research is being done and what it will involve. The researcher will go through this information sheet with you and answer any questions you have. Please take time to read the following information carefully and discuss it with others if you wish. It is up to you to decide to join the study. If you agree to take part, you will be invited to sign a consent form. Take time to decide whether you wish or do not wish to take part. You are free to withdraw from the study before the analysis stage.

Researcher: Supritha Aithal

Supervisors: Prof.Vicky Karkou, Dr.Joanne Powell, Dr.Stergios Makris and Dr.Themis Karaminis

What is the study for?

As a clinical practice, dance movement psychotherapy has shown its potential as one of the psychotherapeutic approaches in intervening children on the autism spectrum. Since the field is in its budding stage there is lack of evidence and well documented research to claim its effectiveness. It is also known that being caregivers of children on the autism spectrum can be very stressful and challenging. Hence, we would like to study the contribution of dance movement psychotherapy towards the wellbeing of children on the autism spectrum and their caregivers. We would also like to investigate the relationship between the caregivers' state of wellbeing and their child's state of wellbeing. In terms of methodology, participants will be recruited from different SEN schools. Methods will involve interviews, arts based (movement response) before and after dance movement psychotherapy intervention sessions for children and the caregivers.

Who is being asked to take part?

Children on the autism spectrum and their caregivers whom have met the inclusion criteria of the research study are being asked if they would like to take part.

What is Dance movement psychotherapy?

Dance Movement Psychotherapy or DMP is a psychotherapeutic approach where movements or dance are used to enhance emotional, physical, social, cognitive and spiritual aspects of an individual. In the UK the profession is regulated by ADMPUK (<https://admp.org.uk/>). DMP is practiced across a wide range of settings and population. Each session might look different depending on the goal and requirements of the session. It is tailored to the needs of the group or an individual.

Do we need to have prior dancing experience or interest in dance to take part?

No. This is **not** a dance technique class or an exercise class where you need to have certain skills. Here, your natural movements are valued more than the aesthetic or skilful presentation of movements.

What does taking part involve?

Caregivers of children on the autism spectrum will be approached if they meet the inclusion criteria of the research study. Caregivers and children will be invited to take part in the dance movement psychotherapy sessions conducted by a qualified and registered dance movement psychotherapist. Ten sessions (60 minutes each) for children and ten sessions for the caregivers (60 minutes each) across three months (two sessions per week). We would carry out assessment using standardised tools and interviews before and after the therapy to find out the effect of the intervention programme.

If you would like to find out more about the study, your details will be passed on to the researcher. The researcher will explain more about the study and answer any further questions. You will be asked if you would like to participate in the intervention programme and we could arrange for a taster session to experience how the sessions are carried out. You can withdraw from this research by ringing the researcher on the number below. Please note that withdrawal from the study will not be possible after the analysis stage begins i.e four weeks after the final assessment.

If you are unsure about participating in the intervention programme, the researcher will give you a phone number and a secure email address to get in touch if you wish to be contacted to discuss further. If you don't reply within two weeks, it will be assumed that you do not consent to involvement in the research study and you will not be contacted again.

If you return the Reply Slip, the researcher will contact you with the arrangements for the assessment and intervention programme.

Can only children or only caregivers be part of the research?

No. If you agree to be part of the research we would expect both children and caregivers to be involved.

Who are considered as caregivers in the research study?

Here caregiver could be anyone who provides emotional support to the children. It could be a mother, father, older sibling, care taker at the school, personal tutor or a person close to your child.

Is the intervention programme conducted individually?

No. Dance movement therapy sessions are held in small groups of five or six participants in each group.

Participants will be randomly allocated to the group. Each participant will have equal chance of being in group A or group B. For the participants of Group A, caregivers will receive intervention first and children will receive it next. For the participants of Group B, children will receive the intervention first and caregivers will follow.

Group A caregivers and Group B children DMP intervention from:

Group B caregivers and Group A children DMP intervention from:

Consent form and data protection legislation

Before the assessment and intervention programme you will be invited to sign two Consent Forms. One form to expresses your unconditional positive indication of agreement and the other form will be parental consent form for children under the age of 16. Children will also be explained about the research in simple terms and they will be given opportunity to express their assent via their chosen mode of expression.

If you decide to take part, the researcher will ask your permission to video-record the sessions. The video-recordings will be used for analysis by the team of researchers. All information which identifies you will be removed. Any personal information such as names, addresses,

doctor's names etc. will not be included in the research. Your name will be replaced by the pseudonym.

At Edge Hill, we are committed to respecting and protecting your personal information. To find ways in which we use your data, please see edgehill.ac.uk/about/legal/privacy. The data will be stored in a safe place and password protected computer in the researcher's office. The paper documents will be carried to the office immodestly after collecting them and they will be placed in secure folders before they are converted to electronic form. The forms will be destroyed leaving no traces of your personal information as soon as they are anonymised and converted to electronic version. The General Data Protection Regulation (GDPR) operates in parallel to various other pieces of data protection legislation and updates, and expands people's rights to see, correct and, normally, delete their *personal* data that is held by an organisation. The University is committed to ensuring compliance with current data protection legislation and confirms that all data collected is used fairly, stored safely, and not disclosed to any other person unlawfully. The University is a data controller and, in some instances, may be a data processor of this data.

The researcher will write up this study for publication so that other people can learn from it. If you would like a summary of the findings, the researcher will send one to you when the study is complete.

Can I withdraw consent?

You are free to withdraw from the study before the analysis stage. You will have four weeks of time after your final participation to inform the researcher if you wish to withdraw the data. You need to inform the researcher via email or phone call. Your withdrawal or participation in the research will not affect your child in the school. In addition, if you wish to retract consent and not participate further after anonymising data for analysis, you cannot be withdrawn as the participant cannot be identified. Because research is conducted in the public interest, you have the right to object although you will not have open-ended rights over your personal data under GDPR.

Will my details and information be kept confidential?

All your details and the information you share will be completely confidential. However, if you tell the researcher something indicating that there is a risk of harm to yourself or somebody else she may need to breach confidentiality and pass this information to your GP/ police or

other appropriate services. Any information that identifies you will be removed from transcripts. You will be identified by a pseudonym only. Your school teachers will not find out what you said. Only general outcomes of this research will be communicated to the school teachers and authorities. All data collected for this study will be kept safely and securely in password-protected computer files. When the research is written up, brief statements from the interviews might be included but the researcher will ensure that any information that may identify the person who made them is removed. It is increasingly expected that researchers will share data through open access although this will be done in a way that respects confidentiality and the law.

Will my child and I benefit from taking part?

Participants will be provided with opportunity to voice their thoughts and feelings about the proposed intervention programme which will provide suggestions to therapists and researchers about helpful/ unhelpful aspects of dance movement psychotherapy which will be beneficial for present and future clients. It will also give an opportunity to potentially improve the quality of Dance movement psychotherapy services and help in providing evidence-based practice.

What if I decide I don't want to take part?

If you decide you do not want to participate then this will not affect the care your child receives in the school in any way. Your future contact with the school or the researchers will not be affected either. You also have the right to withdraw from the study at any time. If you decide to withdraw, we will destroy any information we had collected from you. Please note that withdrawal from the study will not be possible after the analysis stage begins.

What if there is a problem?

If you have a concern about any specific aspect of this research, please call the researcher Supriya Aithal or email her on aithals@edgehill.ac.uk. Alternatively, you can contact Chair of Dance, Arts and Wellbeing, Faculty of Arts and Sciences Tel: 01695 657347, e-mail: Karkouv@edgehill.ac.uk if you have a general query about taking part in research. If you have any feedback or queries that you do not wish to share with the research team, or should you have concerns or a complaint you may contact an Independent member of staff:

Professor Helen Newall, Professor of Theatre Praxis, Department of Performing Arts, Faculty of Arts and Sciences Tel: 01695 650704, e-mail: newallh@edgehill.ac.uk

Who is funding the research?

This study is supported by the Edge Hill University.

Who has reviewed this study?

All research in the University is looked at by an independent group of people called a Research Ethics Committee to protect your interests.

Support

If you wish to continue dance movement psychotherapy support for yourself or to your child after the completion of this project, we will be able to provide the details of aftercare support agencies and therapists.

I still have some questions.....

Please feel free to contact the researcher Supritha Aithal on 07503548329. If there is no answer, please leave a message and Supritha will call you back.

Thank you for your time.**Supritha Aithal**

Researcher & PhD Student
Department of Performing Arts,
Faculty of Arts and Sciences,
Edge Hill University
L39 4QP
Mobile: +447503548329

c) Adult Participants' Consent Form

Title of Project: Dance Movement Psychotherapy for the Wellbeing of Children on the Autism Spectrum and their Caregivers: A Multidisciplinary Mixed-Methods Approach

Name of Researchers undertaking sessions: Mrs. Supritha Aithal, Professor.Vicky Karkou, Dr.Themis Karaminis, Dr.Stergios Makris, Dr. Joanne Powell

Name of Participant:

Please initial box

<p>1. I confirm that I have read and understand the Participants' Information Sheet for the above study. I have had the opportunity to consider the information, ask questions and have these answered satisfactorily.</p>	
<p>2. I understand that my participation and my child's participation is voluntary and that I am free to withdraw, without giving any reason, without my medical care or legal rights being affected.</p>	
<p>3. I understand that I can withdraw my data from the study and I will have four weeks of time after the final participation. I understand however that I will not be able to withdraw from the study after the analysis begins.</p>	
<p>4. I understand that video recordings will be made as part of this study, and that brief quotations from the group may be included in study reports without giving my name or disclosing my identity.</p>	
<p>5. I understand that my answers to the questions within the sessions will be kept confidential. I agree, however for confidentiality to be breached to an appropriate authority such as the GP/ Police if a risk of harm to myself or somebody else is identified.</p>	
<p>6. I understand that the information collected may be used to support other research in the future, and I agree for the research data to be shared anonymously with other researchers.</p>	

7. I understand that any artwork produced during the session will be anonymised and may be used to illustrate the final report or any subsequent publications		
8. I understand that with my permission some of the things my child says or I share during the interview, may be quoted anonymously in the final report or any subsequent publications		
9. I agree to anonymised transcriptions (a written record) of my interview being held on password protected computers for up to 10 years after the end of this study		
10. I understand that data collected during the study, may be looked at by individuals from Edge Hill University or regulatory authorities, for audit purposes, where it is relevant to my taking part in this research. I give permission for these individuals to have access to this anonymous information		
11. I agree to take part in the above study		
12. I would like to receive a summary of the findings at the end of the study.		
Name of participant	Signature	Date
Name of the guardian (if different)		
Name of researcher	Signature	Date

When completed, 1 for participant; 1 for researcher site file; 1 (original) to be kept in clinical notes

d) Assent form for children

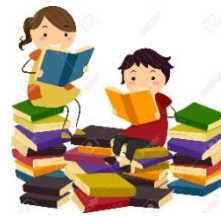


Name of Participant:

Hello my name is Supritha



I work with children and parents. Right now, I am trying to learn more about dance movement psychotherapy.



If you agree, you can come and move/dance/play with us (.....name of the therapist and other children). You will have other friends in the group. We shall all explore different ways of moving.



What if I want to know more?



You may ask Supritha,therapist or your.....parents

What if I do not want to do this?
(Please tick your choice)



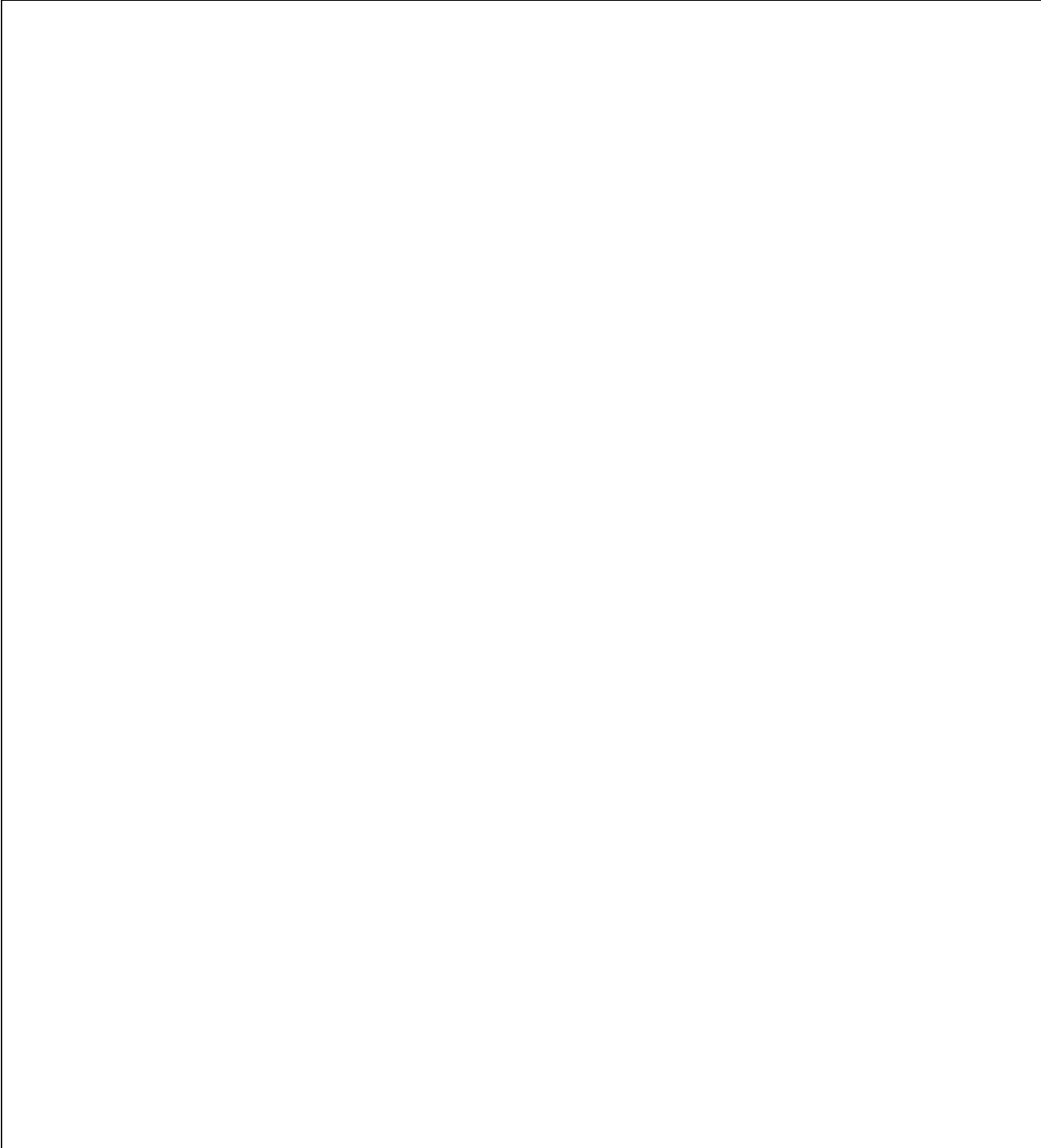
It is your choice to say yes or no.

Signature of the Child

Date

d) Referral letter from the teacher

Full Name:	Diagnosed with Autism spectrum condition: Yes/No ADOS scores: Any other recent test reports:	Age below 16years: Yes/No DOB:
Address:	Parent/Carers full name:	Class:
Telephone No:	First Language:	Gender:
Mobile No:	Ethnicity:	Proffered mode of communication:
Consent for e-mail messages/ invitation letter Yes/No	Is an interpreter needed? Yes/No What language:	
Has this child been referred to dance movement psychotherapist before: Yes/No		
Relevant development and medical information:		
Relevant family history:		
Summary of Concerns (please include functional impact):		



Referrer's name:
.....

Referrer's role & base:

Date:

e) Ethical Approval

From: Kevern Verney
Sent: 18 July 2018 11:29 AM
To: Supritha Aithal
Cc: Vicky Karkou; Ruth Carr
Subject: Re: Notification of Ethical Approval

Hi Supritha

Just to confirm that my previous e-mail below is not a draft but the final version of the conditions for ethical approval stipulated by the Faculty Research Ethics Committee.

Best

Kevern

From: Kevern Verney
Sent: Wednesday, July 18, 2018 11:22 AM
To: Supritha Aithal
Cc: Vicky Karkou; Ruth Carr; Alyson Brown; Andrew Levy; Deborah Baldwin; Eleanor Peters; Ella Pereira; Genevieve Stone; Katja Eckl; Lars McNaughton; Mark McGovern; Pares Wankhade; Ruxandra Trandafoiu; Victor Van Daal; Katie Whitehead; Helen Newall
Subject: Notification of Ethical Approval (Draft)

Dear Supritha

Dance Movement Psychotherapy for the Wellbeing of Children on the Autism Spectrum and their Caregivers: A Multidisciplinary Mixed-Methods Approach

I am pleased to confirm that the above project has been granted ethical approval by the Faculty of Arts and Sciences Research Ethics Committee.

Approval is subject to the following conditions:

1. The Project Information Sheet includes contact details for an appropriate independent third party not involved with the project, for example the Head of Department or Chair of the Department Research Ethics Committee, who participants can contact if they have any concerns they wish to raise about the research.
2. The Project Information Sheet and Consent Form are revised and updated, using the template provided by the Research Office, to comply with the requirements introduced by the new General Data Protection Regulations (GDPR) in May 2018.

3. The Consent Form gives a specific period in which participants can withdraw for the project and that this should be a minimum of four weeks after their participation in the project.
4. The Project Information Sheet and Consent Form provide more information on the storage of paper documents and how these will be kept secure, for example consent forms, paper versions of questionnaires *before* they are converted to electronic form.
5. The assent form for children includes a brief explanation of dance movement psychotherapy in language they will understand.
6. The risk assessment is updated to include further details on how the potential emotional risks to participants will be mitigated. For example, what will happen if the sessions do *not* run smoothly.
7. You provide Ruth Carr, the Committee Secretary, with copies of the updated versions of the above documentation.

Ethical approval covers only the original study and time period for which it is sought. If the study is extended, changed, and/or further data is needed the Committee Secretary, must be contacted for advice as to whether additional ethical approval is required.

Good luck with your research.

Kevern Verney
Associate Dean
Faculty of Arts and Sciences (FAS)
Chair, FAS Research Ethics Committee (FREC)

The Association for Dance Movement Psychotherapy UK

ADMP UK

Code of Ethics and Professional Practice

Dance Movement Psychotherapy

Dance Movement Psychotherapy (DMP), the most physical of the arts therapies, recognizes body movement as an implicit and expressive instrument of communication. Harnessed therapeutically and irrespective of age, culture and background dance movement offers both a way of assessment and of treatment for a range of neurological, psychological, relationship and social problems. It moreover yields opportunities for people who wish to develop their own creative potential.

DMP is practiced as individual and as group therapy in health, education, social service and other settings and in private practice. The profession is continually informed by the results of international research and by initiatives and projects that open up and extend the field of DMP practice.

Introduction and Purpose

Dance movement psychotherapists who are members of the Association of Dance Movement Psychotherapy UK (ADMP UK) are aware of and also commit to practice in accordance with, personal, professional, social and legal responsibilities that impact on their relationships with clients and colleagues. The welfare and safety of clients is at the forefront of all considerations relating to professional practice.

The purpose of this Code is to clarify how specific aspects of professional belief, behaviour and practice, are relevant to the above responsibilities and how these support dance movement psychotherapists in their commitment to protect clients from harm resulting from unethical behaviour and practice.

This code applies to all individual members of the association (ADMP UK), including trainee dance movement psychotherapists whilst on clinical placements.

In addition to this code, members are required to be aware of other principles, standards and guidelines related to practice as described by the association and defined in contracts of employment.

This code exists in its own right and in co-ordination with other ethical codes where relevant to DMP professional practice contexts.

In line with their commitment to professional integrity and accountability, dance movement psychotherapists will report any breaches of this Code, by themselves or others, to the appropriate person within the association, such as the current chair or administrator.

In the following sections the term ‘dance movement psychotherapist’ also stands for dance movement psychotherapy trainer and supervisor. The term ‘client’ refers to individual clients, groups, couples, families. Where applicable the term client also stands for supervisees and trainees.

1. Best interests of clients

- 1.1 Dance movement psychotherapists are responsible for respecting the welfare and best interests of clients.
- 1.2 Dance movement psychotherapists are aware of asymmetries inherent in a therapeutic relationship and do not engage in abuse or exploitation of the relationship for their emotional, financial or sexual gain.
- 1.3 Dance movement psychotherapists make every effort to avoid entering into dual relationships that may confuse an existing relationship or increase the risk of exploitation. Examples include, but are not limited to, a therapeutic relationship with a friend, relative, employee, student or supervisee or a personal or business relationship with a current or former client.
- 1.4 Dance movement psychotherapists are mindful of personal, social, organizational, financial, environmental, cultural, gender based or political contexts that may impact on asymmetries in a therapeutic relationship.
- 1.5 Dance movement psychotherapists do not collude in the harming of clients or of others by a client.
- 1.6 Dance movement psychotherapists are responsible for the safety of the therapy sessions, conducting risk assessments of the site and client where ethical issues may arise.

2. Awareness of legal frameworks and responsibilities

- 2.1 Dance movement psychotherapists are aware of and comply with all relevant national regulations and laws impacting their professional practice, for instance having an enhanced disclosure where appropriate.
- 2.2 Dance movement psychotherapists are aware of the human, legal and civil rights of clients and avoid any action violating or diminishing these.
- 2.3 Dance movement psychotherapists do not engage in or condone inhumane practices that result in illegal or unjustifiable actions.
- 2.4 Dance movement psychotherapists are aware of and understand their legal responsibilities in relation to the rights of children and vulnerable adults and take appropriate action if a child or vulnerable adult is considered to be at risk of harm.
- 2.5 Child Protection
 - 2.5.1 Dance movement psychotherapists are aware of legal and organisational regulations relevant to child protection.

- 2.5.2 Dance movement psychotherapists have a duty to refer concerns of suspected abuse or risk of abuse to their supervisor, child protection/safeguarding officer or line manager within their organisation and, if necessary, to their local child protection organisation, Children's Social Care or the police.
- 2.5.3 Dance movement psychotherapists place the needs of the child first should a conflict of interests arise.
- 2.5.4 Main categories of abuse in relation to which action must be taken include physical, sexual, emotional abuse, omission of care and neglect.
- 2.6 Dance movement psychotherapists agree to inform the association of the following, with the aim of the association assessing potential risk to clients and public confidence in the profession and taking appropriate action if deemed necessary:
 - a) any convictions for a criminal offence, conditional discharges for an offence or police cautions
 - b) disciplinary action brought against them by another professional body or membership organisation
 - c) suspension or restriction of practice by an employer/organisation due to concerns relating to professional competence and/or practice
- 2.7 With reference to the above, dance movement psychotherapists agree to co-operate with inquiries regarding their capacity to practice or supervise. In such circumstances dance movement psychotherapists should seek advice from the association's Ethics Committee and/or legal advice relating to the inquiry.

3. Diversity and equality of opportunity

- 3.1 Dance movement psychotherapists are aware of issues of diversity and equality and through a process of self-exploration and suitable training strive to remain aware of how issues of diversity may affect their relationship with clients, supervisees and trainees.
- 3.2 Dance movement psychotherapists do not engage in behaviour that is abusive based on issues related to diversity.
- 3.3 Dance movement psychotherapists ensure clients have equal rights of access to assessment and treatment regardless of their gender, age, sexual orientation, race, ethnicity, religion, disability, social, economic or immigration status, or any other diversity not relevant to treatment.
- 3.4 Dance movement psychotherapists ensure candidates for training, prospective supervisees, applicants for professional membership or research are not discriminated against on the grounds of gender, age, sexual orientation, race, ethnicity, religion, disability, social, economic or immigration status, or any other diversity issue.

4. Confidentiality, data protection and record keeping

- 4.1 Dance movement psychotherapists respect and protect the confidentiality of clients.
- 4.2 Dance movement psychotherapists are aware of and comply with national laws regarding confidentiality and data protection.

- 4.3 Dance movement psychotherapists notify their clients of any ethical and legal limitations on confidentiality.
- 4.4 In group work, dance movement psychotherapists invite participants to protect the confidentiality of their peers.
- 4.5 Dance movement psychotherapists share information with other professionals only with the client's and in the case of children and vulnerable adults with the appropriate carer's permission. Dance movement psychotherapists may share anonymous, appropriate information for training or research purposes, ensuring that confidentiality and anonymity is maintained.
- 4.6 Dance movement psychotherapists disclose only required information relevant to the case in judicial or administrative proceedings. Clarification is sought throughout such proceedings regarding the impact on confidentiality of sharing this information.
- 4.7 Dance movement psychotherapists ensure they keep appropriate records of practice for the purposes of analysis, supervision, communication with colleagues and clarity in the case of litigation.
- 4.8 Dance movement psychotherapists ensure that all therapeutic records, including written and digital documents and communication, photographs, audio and video recorded material and all other material created by the client during the course of therapy are stored and destroyed securely, according to data protection legislation.
- 4.9 Dance movement psychotherapists are responsible for obtaining clients' informed consent for audio and video recordings used for supervision, research and training purposes. Information provided to clients should include the purpose, access to, ownership, storage, methods of representation used and destruction of recorded material when the case or study is closed.
- 4.10 Dance movement psychotherapists are responsible for considering the impact of such a request on the therapeutic relationship.
- 4.11 Dance movement psychotherapists in private practice make arrangements for the secure storage or destruction of therapeutic records in the event of their unexpected death. It is also recommended that psychotherapists have a living/professional will.
- 4.12 Dance movement psychotherapists are guided to keep clinical records for eight years after the termination of therapy and stay aware of relevant current legislation and organizational policies.

5. Responsibilities of dance movement psychotherapists to clients

5.1 Referral and assessment

5.1.1 Dance movement psychotherapists offer treatment after a formal referral/self referral and assessment procedure (including contract, consent and risk assessment) has been completed.

5.1.2 Dance movement psychotherapists commit to adequately explaining the nature and purpose of assessment techniques in language clients can understand.

5.1.3 Dance movement psychotherapists do not treat clients whose therapeutic needs they are not competent to meet, including where techniques that were not part of the therapist's training are required.

5.1.4 Dance movement psychotherapists do not make misleading claims regarding the likely outcome of treatment.

5.2 Consent

5.2.1 Dance movement psychotherapists commit to explain to clients clinical methods of working including methods specific to the dance movement psychotherapy modality. Communication appropriate to the client's level and scope of understanding should be employed.

5.2.2 Dance movement psychotherapists do not intentionally mislead a client regarding the nature of psychotherapy offered.

5.2.3 Dance movement psychotherapists comply with current legislation regarding consent when working with children. Communication with a child's parents or carers or identified significant person should be made before the start of therapy.

5.2.4 Dance movement psychotherapists seek clarification in line with current legislation e.g. the Mental Capacity Act, when working with clients deemed incapable of providing informed consent.

5.3 Contract

5.3.1 Dance movement psychotherapists work on the basis of an explicit appropriate agreement made with the client, which should cover the following areas:

- a) the therapeutic modality
- b) the scope, rules and approximate duration of treatment, case closure
- c) fees and conditions (where applicable)
- d) an explanation of confidentiality, including legal and other limitations

5.3.2 Dance movement psychotherapists notify clients of codes of ethics and practice they adhere to and make clients aware of the availability of the complaints procedure.

5.3.3 Dance movement psychotherapists ensure the client understands and contributes to the agreement using non-verbal methods of sharing meaning, when working with children, young people or adults unable to read or write or who have other communication needs.

5.4 Use of touch

- 5.4.1 Dance movement psychotherapy interventions necessitate a relational engagement of bodies and as such may involve the use of touch among clients in a group or between client/s and the psychotherapist.
- 5.4.2 Dance movement psychotherapists remain aware of the diverse and complex types of physical contact and the nature and purpose of touch within the therapeutic relationship are always respected.
- 5.4.3 Dance movement psychotherapists are ready to engage with, through ongoing supervision, question and sensitively appreciate the differences between boundary 'crossing' and 'violating' in terms of touch. Under no circumstances do psychotherapists engage in sexual or abusive physical contact with clients.
- 5.4.3 Dance movement psychotherapists examine their own social values about touch and those of clients and the clients' relationship to touch is always respected. Important considerations when working with touch include levels of physical and cognitive ability, gender, sexuality, ethnicity and history of abuse or political torture.
- 5.4.4 The client's permission to engage in physical contact during the therapeutic relationship is paramount and must be an issue of ongoing consensual decision-making between client/s and psychotherapist.
- 5.4.5 Dance movement psychotherapists clarify specific rules regarding touch, in addition to the above, set by employers and particular settings such as schools.

5.5 Professional knowledge and skills

- 5.5.1 Dance movement psychotherapists provide an accurate representation of their competence, education, training and experience. Information relating to the above is accurately shared with clients and the association on request.
- 5.5.2 Dance movement psychotherapists ensure they adequately meet standards of education, training and practice, as set out by the association.
- 5.5.3 Dance movement psychotherapists recognise the scope and limitations of their expertise. If a case is beyond a psychotherapist's area of expertise the psychotherapist must inform the client and where appropriate refer the client to another professional, with the client's consent.
- 5.5.4 Dance movement psychotherapists commit to maintaining and extending their knowledge and skills through a process of engagement in on-going training, referred to as Continuing Professional Development. Policies regarding the type and level of training required are set by the association and adhered to by members.
- 5.5.5 Dance movement psychotherapists ensure they are complying with professional guidelines for adequate clinical supervision for range, type and quantity of DMP work they undertake.

5.6 Fit to practice

- 5.6.1 Dance movement psychotherapists do not engage in assessment, treatment, supervision, training or research while mentally or physically unfit to practice, including when impaired by the influence of alcohol, drugs or medication.
- 5.6.2 Dance movement psychotherapists are responsible for taking appropriate action if their professional conduct is impaired by any of the above reasons.
- 5.6.3 Dance movement psychotherapists commit to making appropriate arrangements for informing their clients should they become unexpectedly unavailable due to illness or death such as having a living/professional will in place.

5.7 Indemnity Insurance

- 5.7.1 Dance movement psychotherapists are required to ensure their practice is covered by appropriate indemnity insurance or by their employer's insurance, making clear this is adequate for the purposes of their practice. Evidence of insurance arrangements must be made available if requested.

6. Specific responsibilities of dance movement psychotherapists to trainees, interns and supervisees

- 6.1 Dance movement psychotherapy trainers and supervisors do not enter into dual relationships with trainees and supervisees. For example, psychotherapy is not offered to a student by a current trainer or supervisor.
- 6.2 Dance movement psychotherapists providing placements, trainers and supervisors communicate serious concerns regarding a trainee's competence and/or fitness to practice to the appropriate person and ensure these are acted upon, with the aim of protecting the best interests and safety of the trainee and their clients.
- 6.3 Dance movement psychotherapy trainers and supervisors ensure adequate supervision is provided to trainees in relation to their clinical responsibilities.

7. Research

- 7.1 Dance movement psychotherapists ensure the best interests, safety and confidentiality of clients, including supervisees and trainees who may be participating, take priority in all aspects of planning and undertaking research.
- 7.2 Dance movement psychotherapists seek and obtain informed consent by participants before commencing research. When participants are children or vulnerable adults a consultee declaration should be obtained from parent/carer or identified significant person in their life.
- 7.3 Dance movement psychotherapists inform participants of the purpose, nature and conditions of the research to be undertaken, including responsibilities and obligations of both researcher and participant.
- 7.4 Dance movement psychotherapists inform participants of their right to decline or withdraw participation at any point in time.

- 7.5 Dance movement psychotherapists ensure all information and material obtained through research activities is treated in a confidential manner and maintains anonymity.
- 7.6 Dance movement psychotherapists respect the intellectual property of colleagues and other professionals and acknowledge the contribution of any collaborators to any aspect of the research.

8. Professional relations

- 8.1 Dance movement psychotherapists respect and cooperate with colleagues and other professional groups with whom they work.
- 8.2 Dance movement psychotherapists make an effort to develop awareness of special competencies and practices of colleagues and other professionals who may also be providing services to their client.

9. Advertising

- 9.1 Dance movement psychotherapists are responsible for the accurate, honest and fair representation of their profession and services, through public statements and all forms of promotional activity.
- 9.2 Any information relating to clients can only be used in promotional material with the client's consent.
- 9.3 Dance movement psychotherapists provide accurate information about group sessions, workshops, seminars or other educational programmes offered, including fees, contractual obligations, staff qualifications, eligibility requirements and a description of the nature of session, workshop or seminar experiences.

10. Complaints

- 10.1 Dance movement psychotherapists are responsible for being aware of the Association's Complaints Procedure and relevant legislation and for informing clients of these if required.
- 10.2 Dance movement psychotherapists who have ethical concerns related to a colleague's practice are responsible for raising these with the colleague and/or organizational setting in which the work takes place. If the above have not proved effective, psychotherapists are responsible for raising their concerns with the Association.
- 10.3 Dance movement psychotherapists are responsible for informing the Association's Chair without delay if they become aware of a complaint or possible legal action brought against them in relation to their practice.

- 10.4 Complaints received by the Association related to practice are forwarded to the Association's Chair. At his/her discretion, the Chair may refer a complaint to the Executive Council, to clarify further steps to be taken.
- 10.5 The psychotherapist concerned is informed of any such complaint and invited to comment on it. In doing so it may be in the therapist's interest to consult any relevant sections of the Public Interest Disclosure Act/Order, 1999.
- 10.6 Following investigation of a complaint the Executive Council has recourse to the following recommendations: reprimand; a period of required supervision; suspension or withdrawal of registration and/or membership of the Association.
- 10.7 All complaints proceedings involving a member of the Association are treated as confidential.
- 10.8 The complainant and recipient of the complaint are kept appropriately informed.

Relevant Legislation

Mental Capacity Act (2005)

<http://www.legislation.gov.uk/ukpga/2005/9/contents>

Equality Act (2010)

<http://www.legislation.gov.uk/ukpga/2010/15/contents>

Every Child Matters (2003)

<https://www.education.gov.uk/consultations/.../EveryChildMatters.pdf>

Children Act

<http://www.legislation.gov.uk/ukpga/2004/31/contents>

Enhanced Disclosure / Disclosure and Barring Service

<https://www.gov.uk/government/organisations/disclosure-and-barring-service>

Acknowledgements

The present ADMP UK Code of Ethics and Professional Practice is informed by the following codes: ADMP UK Code of Professional Practice (2010), EADMT Ethical Code (2010), EABP Ethical Guidelines (2006), BADTH Code of Practice (2005), UKCP Ethical Principles and Code of Professional Conduct (2009).

August 2013.

APPENDIX VII

RISK ASSESSMENT

Risk	Probability (P) 1=low 5=high	Severity (S) 1=low 5=high	Risk Score (P*S)	Mitigation
Data lost due to technical failure	3	5	15	I shall ensure that data is backed up securely and regularly at the end of each day. Multiple copies in different locations and sources will be stored.
Project is not completed on time	2	5	10	I shall build in extra time at key stages of the project. I shall monitor progress against the project Gantt chart and also seek additional resource or modify the plan if slippage threatens final completion date.
Project costs exceed budget	2	4	8	I shall build in contingency funds by saving my personal stipend. I shall monitor costs throughout project and I would consider making savings in non-essential activities.
Recording device fails during the session	2	1	2	I would test the devices before hand. Use alternative/ back up device or would immediately make notes.

Emotional Risks of participants: Unintentionally hurting their feelings or Inadequate use of clinical psychotherapeutic skills	2	5	10	Dance Movement Psychotherapists, Researcher and Clinical Supervisor will ensure that the sessions run smoothly according to the plan by meeting at fortnightly supervision. If the sessions do not run smoothly, the therapist will stay back after the session to hold the space for the individual at risk to provide after session care or support. The severity of the issue will be examined, and necessary actions will be taken to help the emotional transition.
Physical Risks towards therapist/researcher: - Physical attack - Physical aggression - Physical/bodily harm	2	5	10	A contract will be made with the researcher and each participant individually prior to the start of the therapeutic process to clarify the physical boundaries. The contract will include maintaining each other's personal safety.
Physical Risks towards the participants: - Inappropriate physical touch Slips, trip and falls: - Frayed carpet - Hard/ sharp objects - Sand trays	1	4	4	Physical and emotional boundaries will be clarified prior to the start of the therapeutic process. Therapist and researcher will arrive early to the therapy rooms and arrange the room neatly, safely and according to the needs of the session.

APPENDIX IIIII

DATA MANAGEMENT PLAN

I) Data Collection

a. What data will you collect or create?

I will be collecting different types of data. They can be grouped under following sections:

- Quantitative data which are manually collected through questionnaires and standardized psychometric tools and later converted into tables, counts, measurements. The preferred formats are - Comma Separated Values (.csv)
- Qualitative data from experience sharing and semi-structured interviews in the form of text. The potential formats are plain text (.txt), or if formatting is needed, PDF/A (.pdf)
- Movement observational data and arts-based from the sessions will be documented through the videos. The potential format is MPEG-4 (.mp4).
- These are going to be a fixed dataset i.e they will never change after being collected and the video recordings could be replayed for analysis.
- All these data will be collected from 60 participants and the volume could be around 1 TB.

b. How will the data be collected or created?

- Principles of the mixed methodology will form the basis of the study.
- To organise the data basic directory and file naming conventions will be followed. The top-level folder will include:
 - i. Project title
 - ii. Unique identifier
 - iii. Date (dd.mm.yy)
- The sub-folders will have clear, documented naming conventions with each version of a dataset and with each person/ participant id in the group.
- The 3-letter file extension for the file format, such as .txt, .pdf, or .csv. will be reserved
- Pre, mid and final-test results will be clearly named in different folders.
- To identify separate versions of files they will be named as v1, v2 etc in series.
- All the changes done on a file will be recorded no matter how small.
- Bulk rename utility tool for Windows which is available for free will be utilised for renaming many files at the same time.

II) Documentation and Metadata

- a. What documentation and metadata will accompany the data?

Metadata will have an overall view, content description, technical description and also information on access. Metadata will be documented for

- Research project documentation: In this section rationale and context for data collection, structure and organization of data files, data validation and quality assurance, the method used for transformations of data from the raw data through analysis, information on confidentiality and who can access & use conditions will be clearly described.
- Dataset documentation: This section will describe variable names, file format and software (including version) used.

DataCite metadata standard will be used as this standard will support sharing and publishing metadata.

III) Ethics and Legal Compliance

- a. How will you manage any ethical issues?

- Consent of the participants, gatekeepers and concerned authority will be considered before collecting the data.
- Data will be shared only with the research team for analysis
- Participants will be anonymised and numbered with codes.
- Data will be transferred via Dropbox and will be accessible to the specific recipients only.

- b. How will you manage copyright and Intellectual Property Rights (IPR) issues?

This will be handled in accordance with Edge Hill University policies. Data will be owned by the university. The data sharing will be restricted to the members of the research team.

IV) Storage and Backup

- a. How will the data be stored and backed up during the research?

Yes, the university provides 1 TB Onedrive storage space. The data will be backed up using three storage areas. The original (raw data) copied into two hard disks one of which will be connected to one drive and the other hard disk will be stored externally. The researcher's laptop, university computer and cloud storage are the three spaces. Data can be recovered from any one of three types of storage spaces in any event of an incident.

- b. How will you manage access and security?

The data will be protected with one drive storage security's username and password. This will be accessed only by the researcher. If necessary, the researcher could provide access to specific folders to the research team members.

The risks to the data could be at any level. Example: unauthorised access to the researcher's computers, corruption of the local storage or damage due to physical calamity and unforeseen incidents. These will be handled as much as possible by using University's policy of changing the passwords regularly, saving the data in cloud storage spaces like Onedrive. The data collected in the field will be transferred at regular intervals to different secured spaces regularly.

V) Selection and Preservation

- a. Which data are of long-term value and should be retained, shared, and/or preserved?

Data will be retained according to the RCUK policies where data preservation is recommended for 10 years. The data will be held by the University. The data collected through questionnaires filled manually will be destroyed once they are translated electronically.

The research data could be reused for assessing the reliability of the research analysis, follow-up purposes, or to conduct further studies. Different parts of the video samples can be analysed with different objectives.

- b. What is the long-term preservation plan for the dataset?

Data will be held by the University or the department research archives using blue ray discs and the cost will be negligible.

VI) Data Sharing

- a. How will you share the data?

The results and findings of the data analysis will be presented and disseminated in national and international journals, conferences, symposium, as well as in the wider university community such as Autistic societies and schools. Through the DOI code, all publications will be easily identifiable. I will also share them within the Edge Hill University repository within 3 months after the acceptance for publication.

- b. Are any restrictions on data sharing required?

The raw data will be accessed only by the research team. The analysed data after going on the publications, it will be made available for free through open access system.

VII) Responsibilities and Resources

- a. Who will be responsible for data management?

The researcher (Supritha Aithal) is responsible for implementing the Data Management Plan. The Data will be owned by the University. After the contract for the research project terminates, the data maintenance responsibility will be taken by the Director of Studies (Prof. Vicky Karkou).

- b. What resources will you require to deliver your plan?

All the hardware and software available from the institutional resources will be wisely utilised. Free software available online will be downloaded and used as and when required. No additional training is necessary in this aspect and no charges applied to data repositories.

APPENDIX IX

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

APPENDIX X

Dance Movement Psychotherapy Adherence Scale (DMP-AS) - Children with ASD

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 session facilitated working with existing strengths of the children and group?

- 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 session considered attachment patterns of children?

- 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 supported sensory motor development of children?

- 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 the evidence that session enabled enhancing social skills of the participants?

- 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 3- Identifying personal strengths

Session 6- Group work with sensorimotor explorations

Session 9- Concretising the work

- 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

APPENDIX XI

Data of DMP Intervention study on Children with ASD conducted in India

Table 1. Mean and Standard Deviation for Parenting Stress Index-Short Form (PSI-SF) across conditions for Experimental and Control Groups

Parenting Stress Index- Short Form (PSI-SF)	Experimental Group (N=5)				Control Group (N=6)			
	Pre		Post		Pre		Post	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Parental Distress (PD)	38.33	6.40	20.60	5.45	35.33	3.66	34.00	3.28
Parent-Child Dysfunctional Interaction (P-CDI)	37.50	5.31	26.00	5.09	38.50	8.06	36.50	8.14
Difficult child (DC)	45.00	5.54	29.80	2.68	43.16	9.38	40.33	8.11

Note. [SD – Standard Deviation]

Table 2. Results of Paired t test on pre and post therapy scores of Parenting Stress Index-Short Form (PSI-SF)

Conditions	Experimental group		Control group	
	t value	p value	t value	p value
Pre PD- Post PD	3.9	0.01*	1.06	0.33
Pre P-CDI – Post P-CDI	3.1	0.03*	0.41	0.69
PreDC –PostDC	4.5	0.01*	1.02	0.35

Note. * Significant level (p<0.05)

[Pre PD- Pre therapy Parental Distress; Post PD- Post therapy Parental Distress; Pre PCDI – Pre therapy Parent-Child Dysfunctional Interaction; Post PCDI – Post therapy Parent-Child Dysfunctional Interaction; Pre DC- Pre therapy Difficult Child; Post DC- Post therapy Difficult Child]

Table 3

Mean and SD for Hamilton Depression Rating Scale across conditions for Experimental and Control Groups

	Experimental Group (N=5)				Control Group (N=6)			
	Pre		Post		Pre		Post	
HAM-D	Mean	SD	Mean	SD	Mean	SD	Mean	SD
	22.83	7.38	13.40	6.38	10.75	8.42	11.44	7.62

Note. [HAM-D - Hamilton Depression Rating Scale; SD- Standard Deviation]