INTERNATIONAL JOURNAL OF ECONOMIC SOCIAL SCIENCE AND MANAGEMENT LAW
Peer Reviewed, Referred & Indexed Journal
E-ISSN: 3070-0558
VOL.7, NO.2 (2026)

TOPIC: EFFECT OF DANCE MOVEMENT THERAPY (DMT) ON SOCIAL SKILLS AMONG CHILDREN WITH MODERATE AUTISM SPECTRUM DISORDER

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Abstract

Autism is a disorder that includes differences and challenges in social communication skills like receptive and expressive language development, fine motor and gross motor skills and children with autism. Autism is characterized by persistent deficits in social communication and social interaction across multiple contexts, including deficits in social reciprocity, nonverbal communicative behaviors used for social interaction and skills in developing, maintaining and understanding relationships. This aim to study the effect of Dance movement therapy (DMT) on social and communication skills among children with mild autism. The sample consisted of seven children, each having moderate level of autism and age ranging from 6 to 10 years were selected for improving social skills. The sample was taken from KIDZ LIFE AUTISM CENTER, Chandanagar. Both therapist and parent undergone forty five 60 minutes sessions of social skills training through Movement based intervention for three months. Before and after intervention, Vineland Adaptive Behavior scale (VABS-II) was administered to both of parents towards children with autism which included socialization domain three sub domains like interpersonal relationships. Play and leisure time, coping skills. The findings from Means, SD and paired t test revealed that 1) the effect of intervention in improving socialization domain like interpersonal relationships. Play and leisure time, coping skills sub domains were statistically significant. 3) There is a significant improvement in social skills among children with moderate autism (Dance movement therapy package program). The findings of the study further support the fact that Movement based intervention is an effective way of improving social skills among children with moderate autism spectrum disorder.

Keywords: Autism Spectrum disorder, Social Skills, DMT

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INTRODUCTION

Autism spectrum disorders (ASD) are a diverse group of conditions. They are characterized by some degree of difficulty with social interaction and communication. Other characteristics are atypical patterns of activities and behaviors, such as difficulty with transition from one activity to another, a focus on details and unusual reactions to sensations. The abilities and needs of people with autism vary and can evolve over time. While some people with autism can live independently, others have severe disabilities and require life-long care and support. Autism often has an impact on education and employment opportunities. In addition, the demands on families providing care and support can be significant. Societal attitudes and the level of support provided by local and national authorities are important factors determining the quality of life of people with autism. Characteristics of autism may be detected in early childhood, but autism is often not diagnosed until much later. People with autism often have co-occurring conditions, including epilepsy, depression, anxiety and attention deficit hyperactivity disorder as well. as challenging behaviors such as difficulty sleeping and self-injury. The level of intellectual functioning among people with autism varies widely, extending from profound impairment to superior levels.

DSM-5 Diagnostic Criteria

a. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the symptoms, currently, or by history
b. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the symptoms ,currently , or by history
c. Symptoms present in the early developmental period but may not become fully manifest until social demands exceeds limited capacities, or may be masked by learned strategies in later life
d. Symptoms that cause clinically significant impairment in social, occupational, or other important areas of current functioning
e. Disturbances that are not better explained by intellectual disability intellectual developmental disorder or global developmental delay (this is because of intellectual disability and autism spectrum disorder frequently co-occur , to make co-morbid diagnoses of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level).

ICD-10 CRITERIA FOR AUTISM

- A. Abnormal or impaired development is evident before the age of 3 years in at least one of the following areas:
- receptive or expressive language as used in social communication;
- the development of selective social attachments or of reciprocal social interaction;
- Functional or symbolic play.
- B. A total of at least six symptoms from (1), (2) and (3) must be present, with at least two from (1) and at least one from each of (2) and (3)
- 1. Qualitative impairment in social interaction are manifest in at least two of the following areas:

- a. failure adequately to use eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction;

- b. failure to develop (in a manner appropriate to mental age, and despite ample opportunities) peer relationships that involve a mutual sharing of interests, activities and emotions;
- c. lack of socio-emotional reciprocity as shown by an impaired or deviant response to other people's emotions; or lack of modulation of behavior according to social context; or a weak integration of social, emotional, and communicative behaviors;
- d. lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g. a lack of showing, bringing, or pointing out to other people objects of interest to the individual).
- 2. Qualitative abnormalities in communication as manifest in at least one of the following areas:
- a. delay in or total lack of, development of spoken language that is not accompanied by an attempt to compensate through the use of gestures or mime as an alternative mode of communication (often preceded by a lack of communicative babbling);
- b. relative failure to initiate or sustain conversational interchange (at whatever level of language skill is present), in which there is reciprocal responsiveness to the communications of the other person;
- c. stereotyped and repetitive use of language or idiosyncratic use of words or phrases;
- d. lack of varied spontaneous make-believe play or (when young) social imitative play
- 3. Restricted, repetitive, and stereotyped patterns of behavior, interests, and activities are manifested in at least one of the following:
- a. An encompassing preoccupation with one or more stereotyped and restricted patterns of interest that are abnormal in content or focus; or one or more interests that are abnormal in their intensity and circumscribed nature though not in their content or focus;
- b. Apparently compulsive adherence to specific, nonfunctional routines or rituals;
- c. Stereotyped and repetitive motor mannerisms that involve either hand or finger flapping or twisting or complex whole body movements;
- d. Preoccupations with part-objects of non-functional elements of play materials (such as their order, the feel of their surface, or the noise or vibration they generate).
- C. The clinical picture is not attributable to the other varieties of pervasive developmental disorders; specific development disorder of receptive language (F80.2) with secondary socio-emotional problems, reactive attachment disorder (F94.1) or disinhibited attachment disorder (F94.2); mental retardation (F70-F72) with some associated emotional or behavioral disorders; schizophrenia (F20.-) of unusually early onset; and Rett's Syndrome (F84.12).

Autism in Social Skills

- Social skills are one of the main problems in all people with ASD. These impairments are not merely social difficulties like shyness. They are bad enough to cause serious problems in everyday life. These social problems are often combined with the other areas of deficit, such as communication skills and unusual behaviors and interests. For instance, the inability to have a back and forth conversation is both a social and a communication problem. Typical infants are very interested in the world and people

around them. a typical toddler tries to imitate words, uses simple gestures such as waving bye - bye, grasps fingers, and smiles at people. But the young child with ASD may have a very hard time learning to interact with other people.

- One way very young children interact with others is by imitating actions for instance, clapping when mom claps. Children with ASD may not do this, and they may not show interest in social games like peek a boo or pat a cake. Although the ability to play pat a cake is not an important life skill, the ability to imitate is. We learn all the time by watching others and by doing what they do especially in new situations and in the use of language. People with ASD might not interact with others the way most people do. They might not be interested in other people at all. Some might want friends but have social problems that make those relationships difficult. They might not make eye contact and might just want to be alone. Many children with ASD have a very hard time learning to take turns and share much more than other children.This can make other children unwilling to play with them. People with ASD may have problems with expression, so they might have trouble understanding other people's feelings or talking about their own feelings. Many people with ASD are very sensitive to being touched and might not want to be held or cuddled. Repetitive behaviors (called "self - stimulatory behaviors"), common among people with ASD, may seem odd to others or make them uncomfortable, causing them to shy away from a person with ASD. Social issues, such as having trouble interacting with peers, saying whatever comes to mind even if it's inappropriate, adapting to change only with difficulty, and even poor grooming habits, can sometimes make it hard for adults with ASD to get and / or keep a job at their intellectual level. Anxiety and depression, which affect some people with ASD, can make existing social impairments even harder to manage. 12 Teaching Students with Autism Spectrum Disorders Social skills that many people learn by watching others may need to be taught directly to people with ASD. When deciding what to teach, remember the social value of learning independent living skills such as toilet training and other basic grooming skills (bathing, tooth brushing, dressing appropriately, etc.). Because children and adolescents with ASD are "different," and because they are often very literal and sometimes naïve and overly trusting, they are often the target of bullies and may be easily taken advantage of. It is very important to teach all children from a very young age to be tolerant and accepting of differences. It is also important to teach children and adolescents with ASD about personal safety and tell them to go to a parent, teacher, or other trusted adult if they need help. There are many strategies and curriculum supplements for teaching children and adolescents with and without ASD about bullying and other personal safety issues. These can be found by visiting a local bookstore, searching an online bookseller, or by contacting a publishing company that specializes in disability specific or education publications. Teachers and health care professionals are often good resources this type of information as well. Children with ASD also are slower in learning to interpret what others are thinking and feeling. Subtle social cues - whether a smile, a wink, or a grimace - may the same thing, whether the speaker is smiling and extending her arms for a hug or frowning and planting her fists on her hips. Without the ability to interpret gestures and facial expressions, the social world may seem bewildering. To com pound the problem people with ASD have difficulty seeing things from another person's perspective. Most 5 year olds understand that other people have different information, feelings, and goals than they have. A person with ASD may lack such understanding. This inability leaves them unable to predict or understand other people's actions. Although not universal, it is common for people with ASD also to have difficulty regulating their emotions. This can take the form of immature behavior, such as crying in class or engaging in verbal outbursts that seem inappropriate to those around them. Individuals with ASD may also be disruptive and physically aggressive at times, making social relationships still more difficult. They have a tendency to "lose control," particularly in a strange or overwhelming environment or when angry and frustrated. They may at times break things, attack others, or hurt themselves. In their frustration, some bang their heads, pull their hair, or bite their arms.

- **Interventions in Autism**

- **Behavioral Approaches**

- **1.Applied Behavior Analysis**

- ABA systematic approach for increasing desired behaviors and decreasing undesired behaviours is grounded upon the principles learning theory. Specifically, it is based upon the premise that behavior is influenced by environmental events. This understanding leads to structured interventions focused on measurable units of behavior. Data is gathered regularly for the purposes of assessment, monitoring of progress, and guiding adjustments in intervention. ABA has a significant research base, which supports its effectiveness in addressing a wide range of behaviors and skills for individuals with disabilities, including ASD. A variety of national model programs for children with ASD are based on an ABA framework. Research supports the positive gains from these approaches and models in various areas such as social skills, communication, and measured IQ. Because of differences in approaches and model programs based on ABA, however, general statements cannot be made about the effectiveness of ABA as a treatment for ASD. The research does support specific gains for specific intervention.

- **2. Discrete Trial Training**

- Discrete Trial Training is one method within the ABA framework of teaching new skills. Each trial includes the presentation of a stimulus or teacher's instruction, the child's response, and the consequence is based upon whether the child' response was correct or not. A correct response is reinforced with praise or a tangible reinforce, while incorrect responses result in correction such as verbal feedback or physical guidance. This type of training generally includes multiple trials teaching a specific behavior. Discrete Trial Training has been effective in initially teaching a variety of skills. However, skills need to be expanded quickly to more natural environments to promote generalization. In this teacher directed approach, the adult initiates the activity, determines the expected response, and provides the reinforcement. Support for discrete trial training comes from the young ASD program at the University of California-Los Angles, initiated by O. Ivar Lovaas in 1970.

- **Relationship Development Intervention (RDI)**

- RDI is parent based program developed to target deficits in experience sharing in a systematic manner, resembling stages of typical development. After an initial evaluation of the child's functioning, parents receive several days training from an RDI consultant. Training focuses on building motivation, modifying the communication style, enhancing memory formation, developing user friendly practice environments, and generalizing motivation and skills into everyday life. Through the use of videotapes of home sessions and live consultant, parents receive feedback and ongoing training.

- **Skill Based Interventions**

- **Social Stories**

- Social stories are short stories that describe a social situation and provide information about relevant social cues (eg what they mean and why they occur) to help an individual reflect on appropriate responses. They have been reported as effective for preschoolers through adults and particularly for those who have an interest in written or literacy based material. They are used to teach social skills and appropriate behavior for particular situations. Research indicates fewer inappropriate social behaviors for children with ASD in the home and school settings following the use of social stories. Social stories are a promising practice.

- **Video modeling**

- Video modeling is a visual strategy that clarifies the roles and responsibilities people take on in particular situations or how to perform a specific skill. People with ASD watch short videos of adults, peers, or themselves performing an identified skill or task. Then they are provided opportunities to practice those

skills in their daily lives. Video modeling has been used to teach skills such as greeting, naming, or labeling, independent play, cooperative and social play, self help skills, responding to questions and asking questions, and participating in a back and forth conversational exchange around a specified topic.

- **Facilitated communication (FC)**

Facilitated communication (FC) is a method of supporting individuals with severe communication problems while they type messages. It involves providing physical and emotional support to the person typing. Considerable controversy surrounded this intervention, as the authorship of the communication was questioned given the level of physical support provided to the communicator. The use of FC has been rejected by much, but not all, of the scientific and professional community (American Academy of Pediatrics,1998). There are over 50 research studies of FC with 143 communicators. The American speech language hearing Association (1994) has stated that there is lack of scientific evidence validating FC skills and a preponderance of evidence of facilitator influence on messages attributed to communicators.

- **Structured Teaching (TEACCH)**

Structured teaching is an intervention philosophy developed by the University of North Carolina, Division TEACCH (Treatment and Education of Autistic and related communication handicapped Children). It allows for implementation of a variety of instructional methods (eg, visual support strategies, picture exchange communication system (PECS), sensory integration strategies, discrete trial, music/rhythm intervention strategies, and Greenspan's floortime). The following information outlines some important considerations for structured teaching to occur. Eric Schopler, founder of Division TEACCH in the early 1970s, established the foundation for structured teaching in his doctoral dissertation by demonstrating that people with ASD process visual information more easily than verbal information.

DEFINITIONS: TECHNICAL TERMS

- **Dance movement therapy:** Focuses on the movement of the body as a way to express, communicate and understand self and others.
- **Social skills:** a set of learned abilities that enable an individual to interact competently and appropriately in a given social context. The most commonly identified social skills in coping, communication and friendship-making skills, interpersonal.
- **Autism spectrum disorder:** Deficits in nonverbal communicative behaviors used for social interaction, ranging, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures to a total lack of facial expressions and nonverbal communication.

MOTIVATION / RATIONAL

- Children with mild autism have difficulties in maintaining social relationship and expressive language development and communicate with others. There are several studies for improving social skills other interventions of children with high functioning autism. There studies where Dance Movement Therapy used to improve social and less structured, feel free to involve in the movement based activities for children with moderate autism.
- Social skills such as eye contact, turn-taking, sharing, understanding emotions, and responding to others are essential for children's integration into school and community life. Children with moderate autism often struggle with these abilities. Improving these skills can enhance peer relationships, independence, and emotional wellbeing**.**
- Although DMT is increasingly used in therapeutic and educational settings, scientific research on its effectiveness for children with moderate autism is still limited**,** especially in school and community contexts. Studying the effects of DMT can help determine whether it is an effective tool for improving social skills and peer interaction skills**.**
- Dance Movement Therapy focus on social interactions, responding, eye contact relationship with others and development. However DMT for children with mild autism has not been researched upon. Hence this study of DMT on Indian children having mild autism will be first of its kind and addresses the dearth of collaborative,

joyful ,play therapy in this field of disability.

REVIEW OF LITERATURE

Purpose of Review of Literature

A collective body of work done by earlier scientist is called literature. Any scientific information starts with a review of literature. In fact, working with literature is a essential part of research process and which generate the idea, helps in developing significant questions and is regarded as instrumental in the process of research design. The main objective are of a review of the literature are enumerated below:

- Identifying variables relevant for the research
- Avoidance of repetition
- Synthesis of prior works
- Determining meaning and relationship among variables

In addition to these specific purposes, these are some general purpose of the literature.

- To argue for the relevance and the significance of the research question
- To provide the context for one's own methodological approach
- To establish one's own credibility as knowledgeable and capable researcher
- To argue for the relevance and appropriateness of one's own approach

Review of related research

Based on this current study, the related literature has been made and described under the following areas:

a. **Dance Movement therapy and Autism**
b. **Social skills and Autism**
c. **Social skills training and Autism**
d. **Social skills training in other population**

a.Dance Movement therapy and Autism

(Mateos-Moreno & Atencia-Dona, 2013) combined music with DMT to investigate the effectiveness of intervention on scores from the Revised Clinical Scale for the Evaluation of Autistic Behavior (ECA-R; Barthe´le´my & Lelord, 2003). In comparison to the aforementioned interventions with individuals with ASD, the authors focused their work on eight adult participants with severe ASD during 36 one hour sessions over 17 weeks. Adopting a
Plurisensory approach, participants completed approximately eight activities per session, including ‘‘dance, instrumental practice, singing and observation/mimicking
of movement’’ (Mateos-Moreno & Atencia-Dona, 2013, p. 7). Results revealed a positive impact of intervention of regulation/behavioral variability (i.e., self adaptive Behaviors), imitation (i.e., sharing emotion and imitating).

Mitul Sengupta & Mallika Banerjee (2020) Persons with autism have a triad of impairment. The study reported here explored the possibility of dance movement therapy (DMT) as an intervention for the development of communication and body attitude in autism. Three participants aged between three and 11 years who had been diagnosed with severe autism were each given 24 sessions of DMT intervention, which included methods of mirroring, Bartenieff fundamentals, comfort touch and improvisation. Results were reviewed through evaluation at Post I, Post II and Post III stages, to establish the importance of DMT in supporting children with autism. The study concluded that, for these three participants, DMT had a positive

effect on both body attitude and communication. Although its effects subsisted for some time, follow-up results suggested that more therapeutic interventions would be needed to ensure a permanent effect.

Anna Mastrominico, Thomas Fuchs (2018) This study examines the effects of dance movement therapy (DMT) on empathy for adults with autism spectrum disorder (ASD). DMT based on the embodiment approach offers body-centered interventions, such as mirroring techniques, to address the needs of ASD patients.
Accordingly, findings of a feasibility study suggest that DMT may be an effective approach for clients on the ASD. The present study is a randomized controlled trial that was conducted as a multi center study within the framework of the EU-funded research project TESIS (Toward an Embodied Science of Inter subjectivity), and employed a two-factorial between-subject design. The treatment group (n = 35) participated in a 10-week manualized DMT intervention, whereas the control group (n = 22) received treatment only after a waiting period. Empathy, measured with the *Cognitive and Emotional Empathy Questionnaire* (*CEEQ*), was the main variable of interest, analyzed by a repeated measures analysis of variance. In order to also include incomplete data cases, we used the expectation-maximization algorithm for missing data estimation. Results suggest no significant changes in overall empathy between groups. We discuss the results and limitations, as well as future research options.

Catherine Nelson, Kristen Paul, Susan S. Johnston and Jaimee E. Kidder (2017)

Play skills are central to development of children's language and cognitive skills. However, social, symbolic, and object play skills of children with autism spectrum disorder (ASD) are frequently impaired. This study examined the effects of a strategy that utilized preferred play materials, antecedent creative dance activities, and priming of complex play with preferred play materials within dance activities on play behaviors of children with ASD during learning.

Elizabeth Manders, Sharon Goodill, Sabine C Koch, Ellen Giarelli, Marcia Polansky (2021)

Background: Individuals on the autism spectrum are often described as having atypical social interactions. Ideally, interactional synchrony helps any interaction flow smoothly with each individual responding verbally, non-verbally, and/or emotionally within a short timeframe. Differences in interactional synchrony may impact how individuals on the autism spectrum experience social encounters.
Method: This mixed methods pilot study examined interactional synchrony in five casesof adolescents and adults on the autism spectrum through secondary analysis of video of the participants in movement-based mirroring tasks during dance/movement therapy. Raters described the movement and interactions of the participants while they were leading and following mirroring and engaged in open-ended free dances with a partner. Videos were also scored on measures of affective engagement, flow of the interaction, and synchrony.
Results: One of the most striking findings of this study was the difference between engagement in the instructions of the task and engagement with the partner: participants often followed the instructions for the mirroring tasks with little further social engagement with their partner. When participants did engage in moments of social initiation, attunement to the partner, and interactive behaviors, these did not develop into longer interactions. A paired t-test of the correlation coefficients for each participant showed that scores on synchrony and affective engagement were more strongly positively correlated in the less structured open-ended dance and in video clips of interactive behaviors, than in the videos of simply leading or following mirroring. Synchrony was also significantly more strongly positively correlated with the observed flow of the interaction than with observed affective engagement. With the small sample size, however, most of the correlation coefficients were not significant and should be tested on alarger sample.
Discussion: Interpersonal synchrony may not be sufficient to effectively support social engagement when individuals on the autism spectrum simply follow instructions to synchronize their movements. Synchrony-based interventions may therefore need to include more complex open-ended social scenarios as interactional synchrony may then be more correlated with perceived interaction quality. Therapists may also need to partner with participants to model using non-verbal social behaviors to develop interactions within mirroring tasks.

Loman, S., & Sossin, K. M. (2016) The Kestenberg Movement Profile (KMP) is a complex instrument for describing, assessing, and interpreting nonverbal behavior. Over many years, Kestenberg pursued an enduring inquiry into the nature and significance of nonverbal behavior, beginning with her training with Paul Schilder (1950). In the early 1950s, she devoted extensive study to Effort/Shape Analysis that is based on the work of Rudolph Laban's motion factors and Warren Lamb's (1965) interpretation of their use and structure. By 1953, Kestenberg had begun longitudinal studies of the movement patterns of three children, who were each followed for twenty years. Later, Kestenberg's investigations into the role of nonverbal behavior in treatment and assessment were pursued further within the collaborative context of the Sands Point Movement Study Group. Kestenberg made important clinical and theoretical contributions through her observation of infants, children, and adults.

AIM OF THE STUDY

To study the effect of Dance Movement Therapy on Social skills among children with Moderate Autism.

OJECTIVES OF THE STUDY

- To develop Dance movement therapy package to increase social skills in children with moderate autism.
- To study the effect of Dance movement therapy on interpersonal relationships in children with moderate autism.
- To study the effect of Dance movement therapy on play and leisure time in children with moderate autism.
- To study the effect of Dance movement therapy on coping skills in children with moderate autism.

HYPOTHESES

- There will be a significant difference in pre & post scores of interpersonal relationship under socialization domain after the intervention.
- There will be a significant difference in pre & post scores of play and Leisure time under Socialization domain after the intervention.
- There will be a significant difference in pre & post scores of coping skills under Socialization domain after the intervention.
- There will be a significant difference in pre and post scores of Socialization domain after the intervention.

SAMPLE SIZE

The sample consists of 7 children with moderate autism. They were within the age range of 6-10 years.

DEMOGRAPHIC DETAILES OF THE PARTICIPANTS:

S.NO	No of participants	Gender	Age	Criteria
1	Participant-1	Male	6 years 2 months	Moderate ASD
2	Participant-2	Male	6 years 6 months	Moderate ASD
3	Participant-3	Female	7 years 1 month	Moderate ASD
4	Participant-4	Female	7 years 8 months	Moderate ASD
5	Participant-5	Male	8 years 5 months	Moderate ASD
6	Participant-6	Male	8 years 8 months	Moderate ASD
7	Participant-7	Male	9 years 2 months	Moderate ASD

LOCALE OF THE SAMPLE

Samples for the study were collected from the KIDZ LIFE autism center, Chandanagar.

SAMPLING TECHNIQUE

Samples were selected by using purposive sampling technique

STATISTICAL ANALYSIS: The data analyzed by using 20th version of Statistical Package for Social Sciences (SPSS). The statistical technique used to analyze the data was paired t-test to analyze Mean, Standard Deviation (SD) to find out the effect of Dance movement therapy on social skills.

Criteria for the selection of the sample

Inclusion Criteria:

Children with a diagnosis of moderate

autism. Children with age range 6-10 years.

Children who are Verbal.

Children with sufficient motor ability to do the movements.

Exclusive Criteria:

Children under medication

Children under sensory

problems Children under motor

deficit

TOOLS USED IN THE STUDY

Vineland Adaptive Behavior Scales (VABS)

Description of the tool: The Vineland Adaptive Behavior Scale, second edition 2005

(Vineland-ll) is an individually administered measure of adaptive behavior for age's birth to

90. This was developed by Sara.S.Sparrow, Domenic V. Cicchetti and David.A.Bella.

The Vineland ll survey forms represent substantial revision of the Vineland Adaptive Behavior Scales.

The scale is available in 3 versions:

1. Two survey forms : Survey interview form and Parent & Caregivers rating form
2. Expanded interview form
3. Teacher rating form.

Vineland ll has 383 items, divided into four domains.

Table: 2 Domains and sub-domains of VABS

Domains	**Sub-domains**
Socialization	● Interpersonal relationship ● Play and Leisure time ● Coping skills
Communication	● Receptive ● Expressive ● Written
Daily living skills	● Personal ● Domestic ● Community
Motor skills	● Fine motor skills ● Gross motor skills

Reliability: Reliability coefficients for the internal consistency of the entire scale are high, averaging 24 in the .80s and .90s.

Validity: The Socialization and Communication domains has been shown to have high internal consistency (r>.80) and substantial construct validity (r>.70).

Administration:

Test Materials: The test materials required for conducting the Survey interview Forms include manual, which contains scoring criteria for each items; survey interview form record booklet; and a pencil.

Testing Environment and Rapport: conduct the interview in quite room with adequate space. A comfortable temperature, Pleasant atmosphere and comfortable chairs. In most situations, only you and the respondent should be in the room during the interview; the individual being assessed shouldn't be present. Establishing a relationship that encourages the respondent to provide accurate, unbiased information about the individual's typical level of functioning is crucial for valid assessment.

It takes 20-30 minutes administer and an additional 15-30 minutes for scoring.

Scoring: The Vineland-ll Survey form in each adaptive behavior sub-domain scoring begins with the item designated for the individual's age. Score of each item "2",1",0",DK" or 'N/O".

- Circle "2" if the individual usually performs the behavior independently (that is , without any physical help or reminders).

- Circle "1" if the individual sometimes performs the behavior independently or partially performs the behavior independently.
- Circle "0" if the individual never performs the behavior or never performs it independently.
- If the respondent has no knowledge of the individuals performance of a given behavior, circle "DK" for don't know.
- If an item includes a scoring Tip, use the guidelines in the tip to help determine the appropriate score.
- If an item includes a scoring Tip that says you may circle "N/0" for No opportunity, You may circle that option, if appropriate, instead of a "2",1",0",DK".
- Some domains do not apply to children younger than three years of age. If child being assessed is younger than age of the first start point, do not administer that domain.

Record each score in the booklet by circling the applicable response option. If you have a question about any item, put a check mark on the line to the right of that items response options. When you have completed administration of sub-domain, you can write in the comments area about the item (s) in question.

Basal and Ceiling Rules: For each sub-domains basal item. If no ceiling is established, treat last item in the sub-domains basal item. If no ceiling is established, treat last item in the sub-domain ceiling item.

Table: 4 following classifications may be used for the standard scores 20-70.

Classification	**Standard score**
Mild deficit	50-55 approximately.
Moderate deficit	35-40 to 50-55.
Severe deficit	20-25 to 35 to 40.
Profound	Below 20 or 25.

***(Adapted from Grossman, H.H.(Ed). Classification in Mental retardation (1983 revision). Washington, DC: American Association of Mental Deficiency, 1983, p.13.**

ISAA Norms: To arrive at the taxonomy of ISAA, the scores of 376 children who scored 70 and above from autism group were analyzed. The mean score was found to be 106.09, range being 70.0 to 181.0 as given below.

Scores ranging from cutoff score to mean (70 to 106) has been classified as mild autism, scores

	N	Minimum	Maximum	Mean	S.D
ISAA Total	376	70.0	181.0	106.09	23.5

From mean to mean+2SD (106 TO 153) as moderate autism and scores above mean+2SD (>153) as severe autism, as indicated below.

Norms of ISAA for Diagnosis of Autism

ISAA Scores	**Degree of Autism**
<70	Normal
70 to 106	Mild Autism
107 to 153	Moderate Autism
>153	Severe Autism

Percentage of Disability as per the score:

Score	**Percentage (%)**
70	40
71-88	50
89-105	60
106-123	70
124-140	80
141-158	90
Above 158	100

RESEARCH DESIGN

The research design used for the study was pre-experimental design.

DANCE MOVEMENT THERAPY PACKAGE

The Dance movement therapy intervention package used in the present study was adapted from Movement based intervention How to build social skills by Joanne Lara. Since this model was judged to be less effective for the population (Children with moderate autism) of present study, the model had to be adapted to suit the study.

After conducting the pre-test on samples, Dance movement therapy sessions were started. One group consists of seven children and duration of each session lasted to 60 minutes and a total of 45 sessions were conducted. This intervention was delivered thrice a week.

Materials used: Music box, Songs CDs, Stop clock and video modeling.

Techniques used for the package development: Instruction, Modeling, Role playing, video modeling, Feedback, Reinforcement.

Instructions: Verbal descriptions of the behavior to be performed. Components of the behavioral skills training procedure. Instructions often are used in conjuction with modeling and are most effective when the person has an opportunity to rehearse the behavior modeling immediately.

Modeling: A type of prompt in which the trainer demonstrates the target behavior for the learner. Modeling works best in conjuction with instructions, in situations in which the learner has an opportunity to rehearse the modeling behavior immediately.

Feedback: In behavioral skills training procedures, feedbacks involve delivering praise for successful performance in a behavioral rehearsal and instruction on ways to improve the performance in the future**.**

Reinforcement: The process in which the occurrence of a behavior is followed by a consequence that results in an increase in the future probability of the behavior.

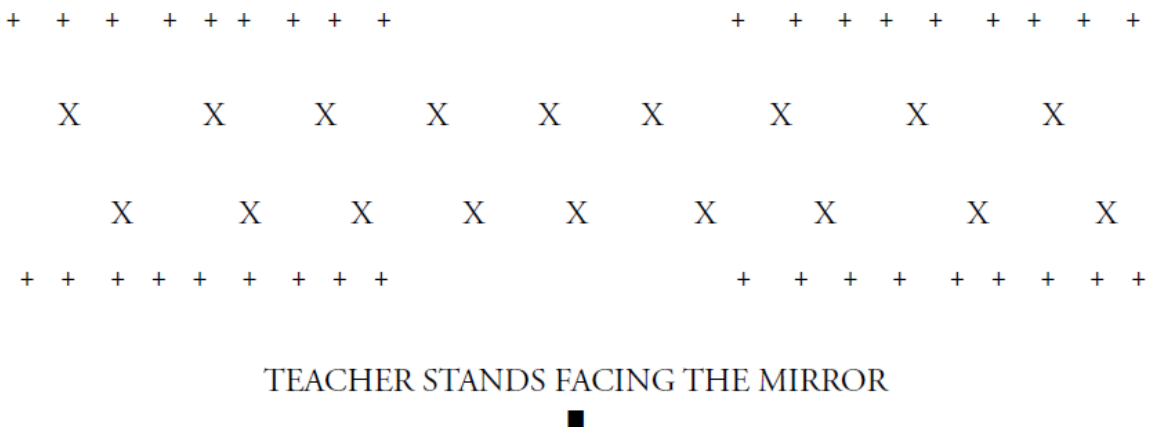
Structure of the sessions:

- Welcome session
- Warm up
- Hand Crossing
- Clapping Game
- Circle time

- Four movements and four sounds
- Naming Game
- Animal cross clapping
- Alphabet Hemispheric clapping
- Mouse
- Elephant
- Slides
- Story Dancing
- Freeze Dancing
- Imagination Game
- Farewell session

The participants entered the floor one after the other in a line and took their respective seats. The session started with mutual greetings. Each one of them greeted the other along with the therapist. They were asked how they liked the previous session and what they were expecting out of today's session. After the discussion, eventually the list of activities for the current session was introduced. The entire session was under the facilitation of the researcher. In each session the group members were explained about the rules briefly. It is important that each child be aware of the rules so that the session can be beneficial for all group members. The basic rules of the session were.

DMT classroom floor layout (Small group)



T- Dance Movement Teacher trainee
X- Students standing the position
+ - Students moving across the floor pathway

- All participates follows Instructions (group instructions and individual)
- All participates repeat the same movements
- All participates standing the their respective position

- Total 7 participates make to stand two rows on the floor
- All participates to keep distance between each participate same distance
- Turn taking in the group
- Be alert for music
- Maintain eye contact with others
- Maintain relationship with others
- If need ask help to others
- Coordination among children
- **Step by Step Procedure:**
- **1. Greeting:** All participates wishes to everyone in the group
- **2. Warm up:** Repetition of patterns and sequences jumping, clapping, turn around, stamp your feet's.
- **3.Hand crossing :** Clap hands on the things for two counts (1,2) than clap hands in front of the chest for two counts (3,4) push the hands out forward in front body for two counts (5,6) clap the hands in front of the on top of the head .for two counts (7,8). Bring the arms up over the head.
- **4. Four movements & Four Sounds:** Each student leads (Demonstrate) four movements with four sounds the group reproduces the student's four movements and four sounds going around the circle.
- **5. Circle time:** Ask the students to sit down on the floor in circle, leg crises-cross applesauce. The teacher leads the six circle floor exercise (these are without music
- **6. Clapping game:** four movements and four sounds but movements and sounds are replaced with clapping a rhythm and the students repeat the rhythm.
- **7. Animal cross hemispheric clapping:** Alphabet crosses hemispheric clapping, but instead of saying the alphabets, the students name animals.
- **8. Alphabet clapping game:** They clap in the middle of their body then they reach across the midline of their body with their right hand to pat their partners left hand one of the partners says the letter A.
- **9. Name Game:** Each student stands up and divides their name into syllables, then executes one movement in their name.
- **10. Mouse:** Mouse cleaning hair (While touching hair), mouse cleaning eyes, mouse noses, mouse cleaning cheeks, and so on until all the body parts.
- **11. Elephant:** Imitating an elephant walking, the arms being the trunk, they hop on their right leg towards the right with arms outstretched to the right and left leg extended behind.

- **12. Slides:** Two students at a time cross the floor with straight slides in each direction, they then add a half turn.

- **12. Story dancing:** Teacher begins with starter sentence I have a dog next student to the right repeats that sentence and then adds a line to it.

- **13. Freeze Dancing:** The participates move free style around the dance room to this Zydeco music. When the music stops, the participates freeze.

- **14. Imagination Game:** beach, mountain, desert, Zoo Park, park, exhibition.

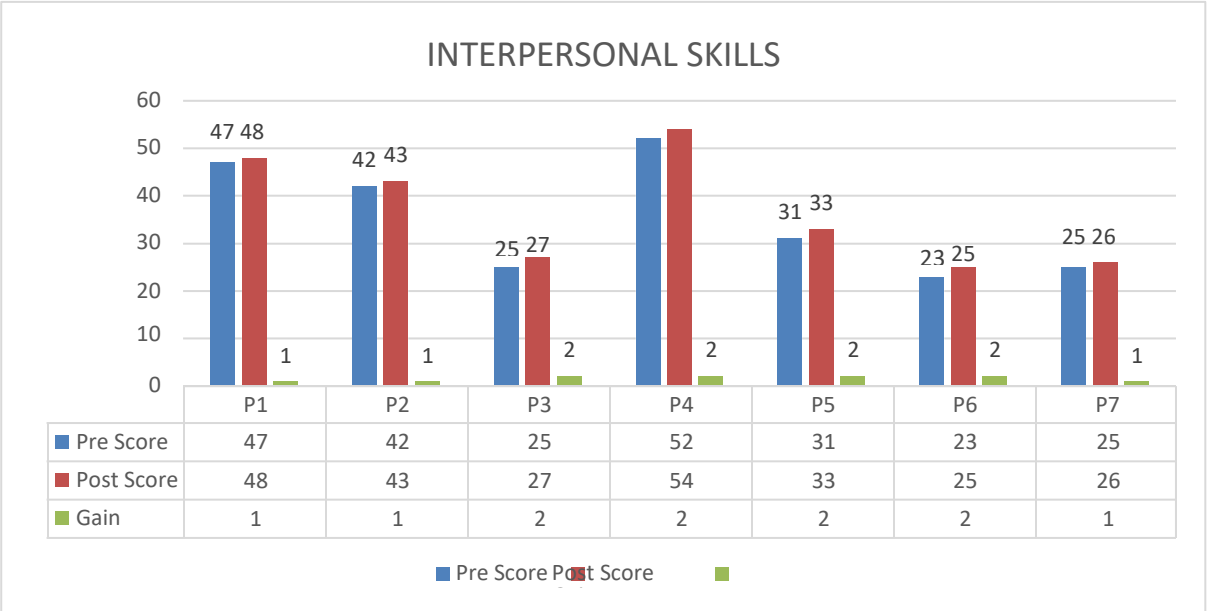
- **15. Farewell or Termination session:** All participates says bye bye to everyone and terminate the floor lay out.

RESULT AND DISCUSSION

Shows Mean, Standard Deviation and t-value of Interpersonal relationship skills under Socialization Domain Pre and Post test

Participant	N	Pre score	Post score	GAIN
Participant-1	7	47 (61.8%)	48 (63.1%)	1 (1.3%)
Participant-2	7	42 (55.2%)	43 (56.5%)	1 (1.3%)
Participant-3	7	25 (32.8%)	27 (35.5%)	2 (2.7%)
Participant-4	7	52 (68.4%)	54 (71.0%)	2 (2.6%)
Participant-5	7	31 (40.7%)	33 (43.4%)	2 (2.7%)
Participant-6	7	23 (30.2%)	25 (32.8%)	2 (2.6%)
Participant-7	7	25 (32.8%)	26 (34.2%)	1 (1.4%)
Mean		35.87	37.50	3.33
SD		11.24	11.41	
t-value	t=5.017 , df=6 ,(p<0.05), Significant			

Graphical representation of Interpersonal skills under the Socialization domain



Interpersonal relationship sub domain mean and standard deviation scores

Test	N	Mean	SD	t	p
Pre-test	7	35.89	11.24	5.01	0.000
Post-test	7	37.50	11.41		

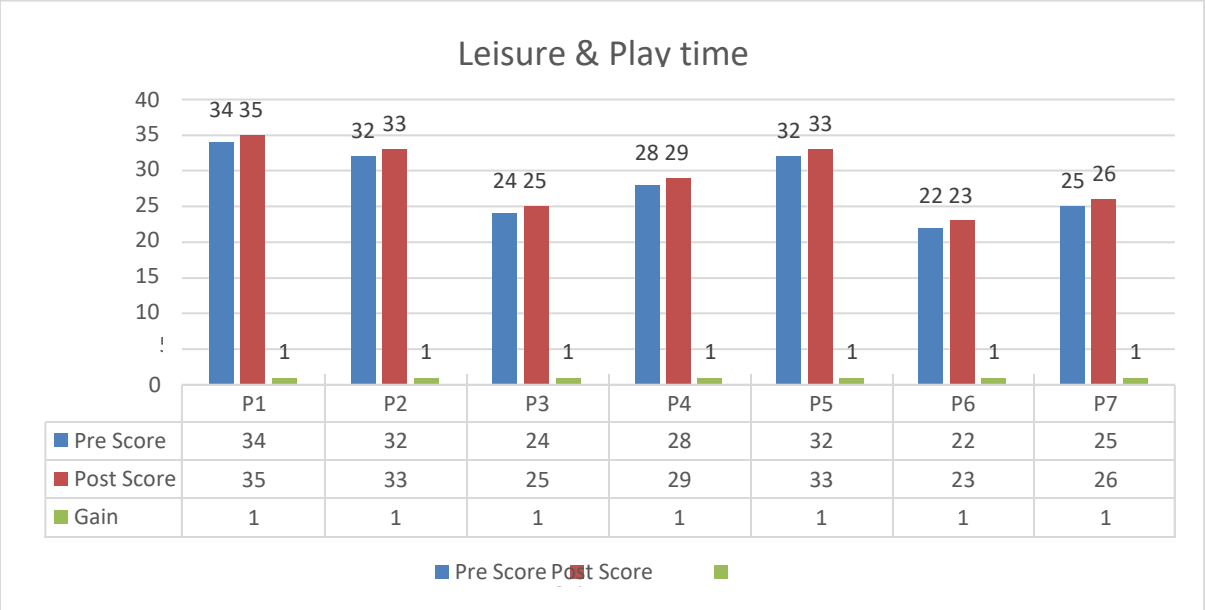
Table 1 presents the pre-test and post-test mean scores, standard deviations, and *t*-values for the interpersonal relationship subscale of the VABS-2. The results indicate a improvement in social iniation, group mingling and social interaction scores from a pre-test mean of 35.89 (SD = 11.24) to a post-test mean of 37.50 (SD = 11.41). The obtained *t*-value of 5.01 was statistically significant at the 0.05 level, indicating a significant improvement following the DMT intervention.

The individual participant data further revealed that the majority of children demonstrated an increase in social initiation, social interaction, and engagement with peer with gains ranging from 0 to 2 points. This consistent reduction suggests that the intervention was effective in addressing interpersonal relationship skills commonly observed in children with moderate autism.

Shows Mean, Standard Deviation and t-value of play & leisure time under the Socialization Domain Pre and Post test

LP				
Participant	**N**	**Pre score**	**Post score**	**GAIN**
Participant-1	7	34 (54.8%)	35 (56.4%)	1 (1.6%)
Participant-2	7	32 (51.6%)	33 (53.2%)	1 (1.6%)
Participant-3	7	24 (38.7%)	25 (40.3%)	1 (1.6%)
Participant-4	7	28 (45.1%)	29 (46.7%)	1 (1.6%)
Participant-5	7	32 (51.6%)	33 (53.2%)	1 (1.6%)
Participant-6	7	22 (35.4%)	23 (37.09%)	1 (1.6%)
Participant-7	7	25 (40.3%)	26 (41.9%)	1 (1.6%)
Mean		27.12	28.25	1.13
SD		4.99	4.89	
t-value	t=9.0 , df=6 ,(p<0.05), Significant			

Graphical representation of leisure and play skills under the Socialization domain



Leisure and play time sub domain means and standard deviation scores

Test	N	Mean	SD	t	p
Pre-test	7	27.12	4.99	9.0	0.000
Post-test	7	28.25	4.89		

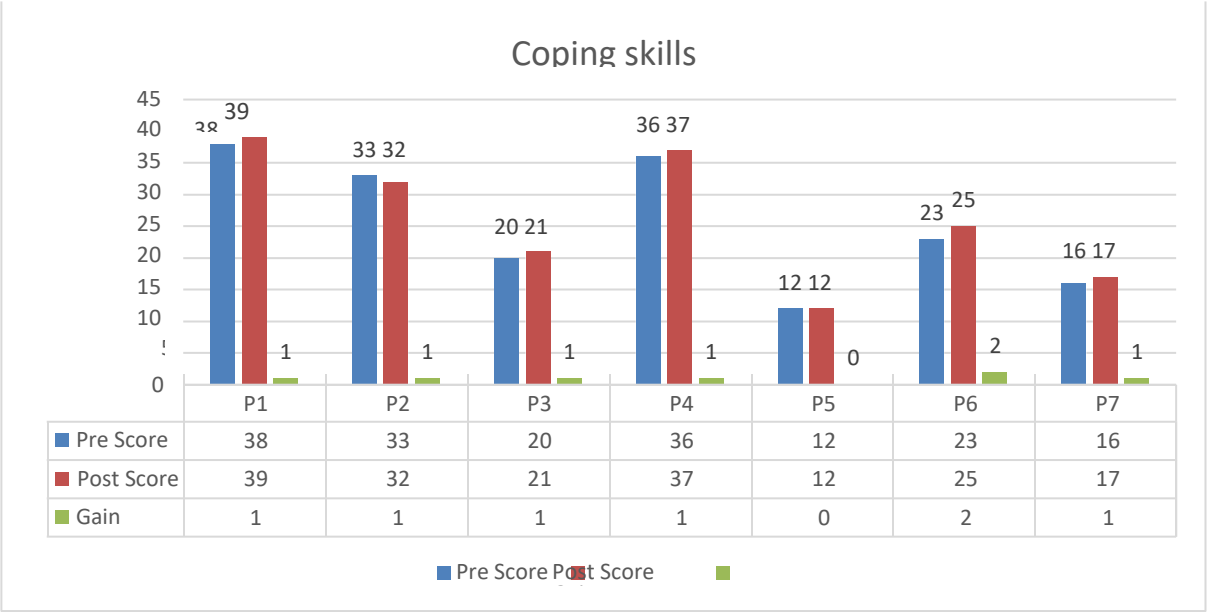
Table 2 presents the pre-test and post-test mean scores, standard deviations, and *t*-values for the leisure and play time of the VABS-2. The results indicate an improvement in play skills and leisure activities scores from a pre-test mean of 27.12 (SD = 4.99) to a post-test mean of 28.25 (SD = 4.89). The obtained *t*-value of 9.0 was statistically significant at the 0.05 level, indicating a significant improvement following the DMT intervention.

The individual participant data further revealed that the majority of children demonstrated an increase in play skills, engagement and leisure activities with gains ranging from 0 to 2 points. This consistent improvement suggests that the intervention was effective in addressing play skills, effective engagement and leisure activities schedule commonly observed in children with moderate autism.

Shows Mean, Standard Deviation and t-value of coping skills under the Socialization Domain Pre and Post test

CS				
Participant	**N**	**Pre score**	**Post score**	**GAIN**
Participant-1	7	38 (63.3%)	39 (65%)	1 (1.7%)
Participant-2	7	33 (55%)	33 (55%)	0 (0%)
Participant-3	7	20 (33.3%)	21 (35%)	1 (1.7%)
Participant-4	7	36 (60%)	37 (61.6%)	1 (1.6%)
Participant-5	7	36 (60%)	37 (61.6%)	1 (1.6%)
Participant-6	7	12 (20%)	12 (20%)	0 (0%)
Participant-7	7	16 (26.6%)	16 (26.6%)	0 (0%)
Mean		25.87	26.37	0.73
SD		10.85	11.21	
t-value	t=2.646, df=6 ,(p<0.05), Significant			

Graphical representation of coping skills under the Socialization domain



Coping skills sub domain means and standard deviation values

Test	N	Mean	SD	t	p
Pre-test	7	25.87	10.85	2.64	.000
Post-test	7	26.37	11.21		

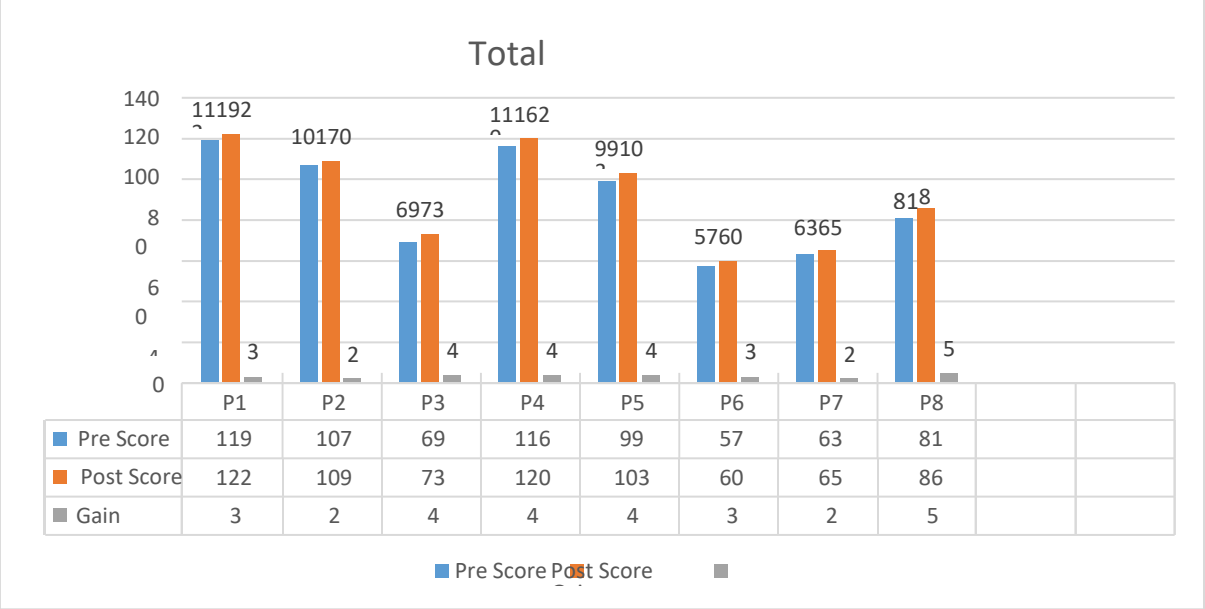
Table 3 presents the pre-test and post-test mean scores, standard deviations, and *t*-values for the coping skills subscale of the VABS-2. The results indicate an improvement in social interaction scores from a pre-test mean of 25.87 (SD = 10.85) to a post-test mean of 26.37 (SD = 11.21). The obtained *t*-value of 2.64 was statistically significant at the 0.05 level, indicating a significant improvement following the DMT intervention.

The individual participant data further revealed that the majority of children demonstrated an increase in coping skills and social interaction, with gains ranging from 0 to 2 points. This consistent improvement suggests that the intervention was effective in addressing socialization area commonly observed in children with moderate autism.

Shows Mean, Standard Deviation and t-value of total Socialization Domain Pre and Post test

TOTAL S				
Participant	**N**	**Pre score**	**Post score**	**GAIN**
Participant-1	7	119 (60.1%)	122 (61.6%)	3 (1.5%)
Participant-2	7	107 (54.04%)	109 (55.02%)	2 (0.98%)
Participant-3	7	69 (34.8%)	73 (36.8%)	4 (2%)
Participant-4	7	116 (58.5%)	120 (60.6%)	4 (2.1%)
Participant-5	7	99 (50%)	103 (52%)	4 (2%)
Participant-6	7	57 (28.7%)	60 (30.3%)	3 (1.6%)
Participant-7	7	63 (31.8%)	65 (32.8%)	2 (1%)
Mean		88.87	92.12	3.25
SD		24.5	24.7	
t-value	t=7.172, df=6 ,(p<0.05), Significant			

GRAPHICAL REPRESENTATION



Socialization domain

Test	N	Mean	Std.Deviation	t-value	Sig.
Pre-test	7	88.87	24.54	6.172	0.00
Post-test	7	92.12	24.78		

The results of the paired sample t-test is given in Table-13 shows that the socialization skills scores of subjects with respect to their pre-test and post-test scores differ significantly ($t=6.172$, $p<0.05$). It is inferred from this that there is significant improvement happened in learning through socialization I mean score of socialization domain in post-test when compared with pre-test. To state differently, there is significant difference between pre-test scores and post test scores in socialization domain.

DISCUSSION

Dance movement therapy has the potential impact the social skills among children with moderate autism. But due to the scarcity of available data in the research literature and in our Indian context it is important to verify the effectiveness of the therapy for population of especially as it relates to children with moderate autism has to be pinpointed. This study experimenter makes an attempt to provide some research findings and it will be explained in line with previous research evidences.

The results of the present study have proved the effect of Dance movement therapy on social skills with respect to different domains of socialization of children with moderate autism.

Group analysis and individual analysis have validated this finding.

LIMITATIONS OF THE STUDY

The intervention was used on a small sample size

This study used purposive sampling.

Limited number of sessions which may affect the maintenance of skill behavior.

The study doesn't consider variables such as gender, socio economic status of the children participated in this study.

SUGGESTIONS FOR FUTURE RESEARCH

For the generalization of results, similar studies can be done over a large sample size.

For maintaining and long duration of intervention effect, relatively large number of sessions should be given.

Further research can be done on same variables with different population of like ADHD, ID, Learning disability.

Future studies can be incorporated with direct observational methods rather than reling only on indirect method of assessment.

IMPLICATIONS OF THE STUDY

The findings of the present study will be useful to rehabilitation professionals for understanding the efficacy of dance movement therapy as an intervention to deal with children with moderate autism.

Explore the effectiveness of Dance Movement Therapy in improving social skills among children with moderate ASD.

Help educators, therapists, and parents understand how movement-based interventions can enhance social interaction and communication.

Contribute to the development of inclusive and creative therapy programs for children with autism.

Provide evidence-based support for alternative therapeutic interventions in special education and rehabilitation.

If provided meaningful activity through dance movement therapy, it will help children with autism to adapt effectively with the environment.

Dance movement activity enables adults to connect with children and provide guidance, without imposing authority, fear and hierarchy.

The kind of research will add to the literature on the effectiveness of specific dance movement intervention techniques with different clinical populations.

CONCLUSION

Dance movement therapy intervention new package program for the study was effective for the social skills of children with moderate autism. This study examined the effect of Dance Movement Therapy (DMT) on the social skills of children with moderate Autism Spectrum Disorder (ASD). The findings of the study indicate that DMT plays a significant role in improving various aspects of social functioning among children with ASD. Through structured movement activities, rhythmic interaction, and group participation, children showed improvements in social interaction, non-verbal communication, eye contact, and participation in group activities. Dance Movement Therapy also helped children express their emotions more freely, develop better body awareness, and build confidence while interacting with others. The use of movement and music created an engaging and supportive environment that encouraged children to connect with peers and therapists without relying solely on verbal communication. Therefore, DMT can be considered an effective complementary therapeutic approach for enhancing social skills in children with moderate autism. The study highlights the importance of incorporating creative and movement-based therapies in special education and rehabilitation programs. However, further research with larger sample sizes and longer intervention periods is recommended to better understand the long-term impact of Dance Movement Therapy on social development in children with Autism Spectrum Disorder. The result can be used to promote positive perceptions and attitudes toward, children with autism among both parents and teachers, and to promote the use of a comprehensive, multi contextual understanding of children dance movement activity and potential that is necessary for developing effective interventions. Everyone can find meaning and benefit from dance and focuses on movement with the help of a therapist. The engagement with music with movement enables positive transfer effects on extra movement development domain. Participating in pleasurable and fun activity contributes to a sense of wellbeing provides an antidote to the stress of living, and up lift and restore the spirit.

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