

Effectiveness of Dance/Movement Therapy on Quality of Life in children with Autism Spectrum Disorders (ASD)

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Abstract - Background: Autism spectrum disorder is neurodevelopmental disorder seen in children. These children suffer from behaviors included extreme aloneness, failure to assume anticipatory postures, delayed or deviant language, and a limited range of spontaneous activities and lack of socialization. There are lots of studies are done for the behavior modification and for socialization. Hence the study incorporates dance/movement therapy to find out its effects on quality of life in children with autism spectrum disorder.

Objectives: To find out the effectiveness of dance/movement therapy on quality of life in children with autism spectrum disorder.

Methodology: 25 participants with age 6-16 yrs for study with mild autism on childhood autism rating scale (CARS) were recruited for the study. Dance/movement therapy protocol was given for 12weeks period. Pre and post intervention values were measured for Indian Scale for assessment of autism, Quality of life questionnaire, Questionnaire for parents or caregivers of childhood.

Results-Comparison between pre and post intervention Indian autism rating scale for autism shows extremely significant result (<0.0013) and quality of life values shows significant result (p<0.0392).

Conclusion: Improvement in quality of life, in children with autism spectrum disorder when treated with dance/movement therapy.

Key words: Autism Spectrum Disorder (ASD), Dance/Tovement therapy, Quality of Life.

I. INTRODUCTION

Autism Spectrum Disorder (ASD) is a class of developmental disorders typically diagnosed during childhood. Kanner psychiatrist from John Hopkins University, first described the term Autism. Autism identified behaviors included extreme aloneness, failure to assume anticipatory postures, delayed or deviant language, and a limited range of spontaneous activities.¹ It is specific, because it involves problems in all domains. Symptoms of autism spectrum disorder include qualitative impairment in social interactions, impairment in communications,

restricted, repetitive, stereotyped behaviors and activities.² Restricted Repetitive Behaviors (RRB) and Stereotypic Behaviors (SB) count among the key symptoms of autism.³ Early signs of autism are often noticed by 18 months of age or even earlier. Some early signs or "red flags" that a child may have an ASD includes lack of or delay in spoken language, repetitive use of language, little or no eye contact, lack of interest in other children, lack of spontaneous or make-believe play, persistent fixation on parts of objects, poor response to his/her name, fails to imitate caregivers, and motor mannerisms (e.g., hand-flapping).⁴

According to the latest report from the centers for disease control, 1 in 110 children in the general population will be diagnosed with ASDs, an incidence significantly greater than the 1 in 150 reported in 2000. The incidence of ASDs is five times more common in boys (1 in 54) than girls (1 in 252).⁵ The diagnostic criteria for autism based on continued observations and research resulting in the current criteria in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) and the International Classification of Disease (ICD-10).⁶ The Autism Spectrum Disorder (ASD) is umbrella term consist of five disorders such as Autism, Asperger syndrome, Pervasive Developmental Disorder - Not Otherwise Specified (PDD-NOS), Rett's syndrome and Childhood Disintegrative Disorder (CDD).⁷

The exact cause of autism is unknown but prenatal factors such as maternal bleeding after the first trimester, meconium in the amniotic fluid, respiratory distress syndrome, neonatal anemia are found to be contributing factor in autistic disorder. Neuroanatomical factors such as brain enlargement, temporal lobe damage and decrease in cerebellar Purkinje cell are also found to be causative for autistic disorder.⁸ Genetics appear to play an important role in causing some cases of autism.⁹

The most striking aspect of autism is often the difficulties with social interaction infant may have difficulties using and understanding eye contact, facial expressions, gestures, intonation. Child with autism also have difficulty with

keeping and making friends. Communication in children with an ASD can vary from mild to severe. Language delays and language regression are also common in children with an ASD. Children with autism often engage in a restricted range of behaviors, interests and activities in a repetitive and stereotypic way. Early indicators of an ASD include a lack of eye contact with others, deficits in joint attention and pretend play, a lack of interest or engagement with others, and failure to develop relationships with peers. Even slight deviations may result in intense reactions or tantrums.¹⁰

The primary goals of treatment are to maximize the child's ultimate functional independence and Quality Of Life (QOL) by minimizing the core features of disorder, facilitating development and learning, promoting socialization and educating parents.¹¹ Dance/movement therapy is the new concept of treatment for mental health, rehabilitation, medical, educational purpose. DMT is considered appropriate for clients as it is reported to be effective for individuals with developmental, medical, social, physical and psychological impairments. Based on the assumption that body and mind are interrelated dance/movement therapy is defined by the American Dance Therapy Association (ADTA) as "the psychotherapeutic use of movement as a process which furthers the emotional, cognitive and physical integration of the individual." Dance/movement therapy effects changes in feelings, cognition, physical functioning, and behavior.² Dance is an art form that generally refers to movement of the body usually rhythmic to music and used as a form of expression, social interaction, presented in a spiritual or performance setting. Dance/ Movement Therapy include touch, movements, fine motor and gross motor functions. So it is useful for tactile or kinesthetic learner.¹² As a form of exercise, dance therapy can be useful for both physical and emotional aspects of Quality of Life.

According to World Health Organization (WHO) Quality of Life can be defined as "individuals perception of their position in life in the context of the culture and value systems in which they live in relation to their goals, expectations, standards and concerns"¹³

II. MATERIALS AND METHODS

A Total of 25 participants from Aarambh Autism Centre and Slow Learners, Aurangabad Maharashtra State, India-413736 were selected for the study. Twenty participants with mild autism between 6 to 16 years of age were included in the study. The inclusion criteria for the study were 1) Participants in the age group of 6-16 years, 2) both Boys and girls, 3) Children with mild autism (according to Childhood autism rating scale [CARS]Scale), 4) Able to follow simple verbal commands The exclusion criteria for the study were as follows- 1) Severe and moderate autism(according to CARS Scale), 2) Auditory and visual problem, 3) Autism

with mental retardation, 4) k/c/o any musculoskeletal disorder Among that 20 participants 2 dropped out because of they have time constraints. so total 18 participants are selected for study An informed written consent was taken from all the parents. Two participants were dropped out of the study since they had time constraints. Participants included were with the diagnosis of mild autism and able to follow verbal commands on the basis of CARS scale assessed by psychologist. An intervention, which included warm up session last for 5 minutes including stretching, slow running, spot jogging and bouncing. Dance Movement therapy session last for 25-30 minutes including joint proprioception, wall pushups, push the big objects like ball or big boxes, rolling on floor and cool down period last for 5 minutes includes shavasana. The pre and post values were taken for the outcome measures, Indian Scale for assessment of autism, Quality of life questionnaire, Questionnaire for parents or caregivers of childhood.

Data analysis

The objective of the study was to find out the effectiveness of dance/movement therapy on quality of life in children with Autism Spectrum Disorder(ASD). The data which was collected and recorded at the pre and post intervention was used to analyze the results. The results for the study were analyzed in terms of quality of life which was indicated by change in scores in ISAA and QP& CG CARS. Comparison of the results was made at pre and post intervention readings. Statistical analysis was done by trial version of Graph Pad InStat (v 3.06) software. The data was entered into an excel spread sheet, tabulated and subjected to statistical analysis. Various statistical measures such as mean, standard deviation (SD) and test of significance that is 'paired t test' used for comparing data. The results were concluded to be statistically significant which was seen at the post intervention.

1) Indian Scale for Assessment of Autism :-

The pre intervention mean value of Indian scale for assessment of autism was 86.72 while the standard deviation was ± 12.69 (Table 4.2). Using the 'paired t test' the p value is < 0.0013 which shows significant difference. The t value $= 3.8282$ and $df = 17$. The post intervention mean value of Indian scale for assessment of autism score was 84.50 with standard deviation ± 11.9 .

2) Questionnaire for parents or caregivers of childhood CARS 2

The pre intervention mean value QPCG CARS2 of was 56.28 while the standard deviation was ± 1.15 (Table 4.2). Using the 'paired t test' the p value is < 0.0361 which shows significant difference. The t value $= 2.2763$ and. The post intervention mean value of Indian scale for assessment of autism score was 54.44 with standard deviation ± 16.38 .

Table 1.1:-Comparison of IAAS Scores at Pre-intervention and post intervention

IASS	PRE INTERVENTION	POST INTERVENTION	p VALUE	t VALUE	RESULT
MEAN ±sd	86.72±12.69	84.50±11.90	0.0013	3.8282	statistically Significant

Table no. 1.2 comparison of QPCG CARS2 Pre and post intervention

QPCG CARS 2 SCALE	PRE INTERVENTION	POST INTERVENTION	p VALUE	T VALUE	RESULT
MEAN±sd	56.28±17.15	54.44±16.38	0.0361	2.2763	statistically Significant

Table no.1.3 Comparison of pre and post intervention score of Quality of life questionnaire

Score of QOL	PRE INTERVENTION	POST INTERVENTION	p VALUE	t VALUE	RESULT
MEAN± sd	52.22±9.27	53.61±9.83	0.0392	2.234	statistically Significant

3) Quality Of Life Questionnaire

The pre intervention mean value QOL of was 52.22 while the standard deviation was ±9.27 (Table 4.5). Using the ‘paired t test’ the p value is <0.0392 which shows significant difference. The t value =2.2340 and. The post intervention mean value of Indian scale for assessment of autism score was 53.61 with standard deviation ± 9.83

The data analysis shows that there was marked reduction in the score of IAAS and QPCG CARS 2 in the 18 participants of the study. Also result shows that there is increased score of quality of life.

Discussion

The present study “Effectiveness of dance/movement therapy on quality of life in children with Autism Spectrum Disorder” is aimed to see how the dance/movement therapy helps in improving quality of life in children with autism spectrum disorder. Aarambh center for autism and slow learners was chosen for the study of twelve weeks. The results of the study found significant difference in the pre intervention reading that was taken on the first day of the intervention and in 12th week in Indian scale for assessment of autism, questionnaire for parents and caregivers CARS2 and in quality of life questionnaire. Thus, these strategies can be applied on a regular basis for helping such autistic children to overcome their behavior issues and to cope up effectively with the environment.

Dance is one of best way to do exercise. Dance helps increase the temporal and prefrontal activity to improve memory, multi-tasking, planning and attention skills. Dance helps the older brain to form new interconnections and work faster. An individual with an ASD diagnosis will be described in terms of severity of social communication

symptoms, severity of fixated or restricted behaviors or interests and associated features.⁷

The present study shows effect on improving behavior strategies in Indian scale for assessment of autism. Dance provides a way to release the tension through movement while allowing the inner feelings to be expressed via movement. Dance is a rich context for examination of human memory because dance is communicative, expressive, and universal as well as non-verbal, temporal, spatial and kinesthetic.¹⁴

A study done by See, C. M. on behavior modification in Autism children shows that music and movement therapy has positive effects on the behaviors of these children especially in helping in improving restlessness, fidgety, temper tantrum and inattentive behaviors¹⁵.

Dance movement therapy improves quality of life for children and their caregivers through its holistic approach and is widely used because of its ability to establish calm and gentle behavior.¹⁵

III. CONCLUSION

This present study concludes that the dance/movement therapy is better intervention for improving the behavior problem, communication skills, socialization and improves overall quality of life.

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