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Unmuting Autism Through Music Therapy: An Experimental Study

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ABSTRACT

This experimental study is formulated to determine the efficacy of using music as a therapeutic tool among children with an autism spectrum disorder. The sample for the study was selected from the age group of 7-16 years who are attending special schools. After selecting 20 students, they were segregated into two groups i.e., control and experimental groups. The tool used for the analysis was a checklist prepared by the investigator along with BASIC-MR (Behavioral Assessment Scales for Indian Children with Mental Retardation). The intervention was done for 40 sessions each lasting 45 min for 2 months. A remarkable change was noticed in the pre and post-test scores in the statistical analysis. Hence, the study validated the significance of comprehending music as an intervention to enhance the development of functional social skills among autistic children.

Keywords: Autism, IEPs, Intellectual Disability, Music Therapy, Social skills.

1. INTRODUCTION

According to American Psychiatric Association, Autism spectrum disorder (ASD) is a complex developmental condition involving persistent challenges with social communication, restricted interests, and repetitive behaviour. While autism isconsidered a lifelong disorder, the degree of impairment in functioning because of these challenges varies between individuals with autism. The symptoms of ASD include lack of eye contact, stereotypical repetitive movements such as tapping feet, clapping hands, spinning head, having fixed and specific routines which when disturbed might lead to anger and crankiness, etc. The major downside of ASD is that the children eventually might become socially aversive thereby leading them to either alienate themselves from society or develop aggression and violent behavioural problems like self-harming, biting, etc. Some might even forget the language skills they have acquired earlier due to lack of usage in daily life. Hence, it is imperative to make certain interventions and therapies to improve their social skills or the functional social skills at the least.

2. BACKGROUND

While there are a lot of therapies like Cognitive Behaviour Therapy (CBT), Speech Therapy, PECS (Picture Exchange Communication System), and so on, Music Therapy showed to be more functional, especially in the progress of social skills. Therapists have started researching the benefits of music in improving interaction among children with developmental disorders and have succeeded in designing an interactive and effective tool. Music therapy addresses the physical, emotional, cognitive, and social needs of the individual. In this kind of therapeutics, children use singing, playing an instrument, dancing creating a tune/song, or just simply listening. It enables individuals in expressing themselves with comfort by humming, singing aloud, banging instruments, or shouting which satiates their emotional needs. The significant outcomes using music therapy were reduction in echolalia, improvement in language comprehension, and creativity in expressing themselves. Unlike other therapies, music therapy does not rely upon speech and hence it makes the children with speech processing difficulties also capable of getting benefited by interpreting music as a therapy.

3. OBJECTIVES

- To distinguish between the control group who were intervened with conventional IEPs and therapies and the experimental group who were exposed to Music Therapy and find the mean scores of both pre-tests and post-tests to calculate the usefulness.
- To determine the usefulness of music therapy and analyse the range of its impact on different levels of disability.

4. METHODOLOGY

A. Research Design and Approach

- Two groups (Experimental and Control) pre and post-test experimental research designs was implemented to measure the potency of music on the progress of functional social skills among children with autism.
- The checklist was prepared considering all the variables of the participants and consent was taken from the concerned guardians.
- The participants were chosen because they exhibited highly unfitting social behaviors and hence were the most suitable candidates for the experiment.

B. Sampling

- A sample of 20 students (16 boys and 4 girls) was taken from different special schools and the children were selected from a handpicked lot by considering the requirements of the experiment.
- The sample was made sure to comprise of different levels of Mental Retardation homogeneously in both groups to make the comparison more lucid and accurate.

C. Procedure and Data Collection

- Ten students were selected based on their scores achieved during the pre-requisite skill test and were divided into two groups.
- For this study, the investigator has prepared a pre-test sheet (checklist) along with the BASIC-MR tool, and the scores were recorded before the intervention.
- Social skills were taught to the experimental group using melodies and tones while the control group was taught the same skills in the traditional unaltered manner.
- The skills of making eye contact and greeting hello were taught by tuning the words “Hello, Good Morning. My name is XXX” and making them repeat their jingle the whole session by taking turns. Reinforcements like playing their favourite song or giving them an instrument to play were done along with clapping which in turn inculcated a habit of appreciating others and taking turns. Hence, the solitary, group, and community social skills were all focused on one single activity.
- Although it was difficult to hold the children focused for the whole session duration, it took a few weeks for them to establish a routine in the therapeutic environment. They kept switching over from one instrument to another and were hesitant to sing/repeat in front of their group.
- The session initially lasted for 30 min and was eventually increased to 45 min. It took 2 months and 40 sessions to achieve the desired outcome.
- Tests were conducted for both the groups before the intervention and after every 2 weeks during the therapies. Post-tests were conducted at the end of the sessions and the data was recorded.

D. Evaluation Criteria

The test scores were marked by evaluating the children based on the BASIC-MR social skills along with a self-prepared checklist which consisted of a few performance indicators such as:

- Facial expressions and eye contact, emotional state, expressions (happy, distress, angry or neutral, etc.)
- Vocalization (humming, sound production, speech modulation, shouting, neutral, etc.)
- Posture and Movements such as whether the child is facing the communicator, his gestures, etc

5. RESULTS AND ANALYSIS

A. SCORES

TABLE 1: ANALYSISBASEDONTHECALCULATEDMEANSCORESOFTHEPRE-TESTFORFUNCTIONALSOCIALSKILLSOFBOTHCONTROL GROUP(C) ANDEXPERIMENTALGROUP(E).

Group	N	Mean	SD	Df	t-value	Sig-level
Experimental	10	10.5	1.84	18	0.51	P=0.62 NotSignificant
Control	10	10.1	1.66			

TABLE 2: ANALYSIS BASED ON THE CALCULATED MEAN SCORES OF POST-TESTS FOR FUNCTIONAL SOCIAL SKILLS OF BOTH CONTROL GROUP (C) AND EXPERIMENTAL GROUP (E).

Group	N	Mean	SD	Df	t-value	Sig-level
Experimental	10	16.2	1.24	18	8.41	P<0.0001 Extremely Significant
Control	10	10.4	1.79			

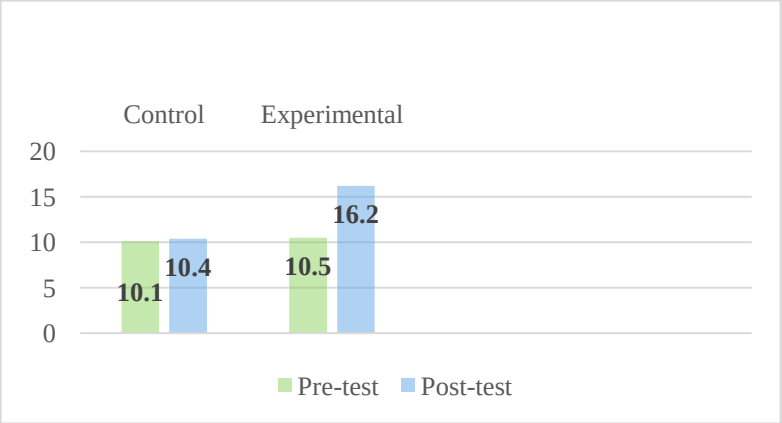

Figure 1: Comparative Analysis of the pre-test and post-test mean values in both the groups.

B. ANALYSIS

Table 1, Table 2 and Figure 1 represent the mean scores of both the group's pre and post the intervention. It is evident in the above charts that there is no significant difference in the pre-test scores of the functional social skills between the groups at the baseline level. Hence, these groups can be treated as a homogenous group for the study of the effectiveness of teaching through music therapy for the development of functional social skills among children with autism. While the scores of means during pre-test and post-test of the control group had a minimal difference, there has been a dramatic increase of the same in the experimental group. The mean scores have risen from 10.5 to 16.2 with the standard deviation reducing from 1.84 to 1.24. The P-value has fallen to less than 0.0001. By conventional criteria, this difference is statistically extremely significant.

C. INFERENCES

- Considering the above analysis, it can be deduced that although there has been a growth in the performance of both the groups from pre-test to post-test, the factor of improvement is remarkably high in the experimental group.
- Hence, it can be concluded through the observations that music therapy has a powerful impact on the improvement of social skills and can be considered as an effective intervention or a potential teaching strategy to be adopted by special educators dealing especially with children with autism.
- However, according to the scores, the children with extremely low scores in the pre-test have shown a great improvement in comparison to the children with average scores already. The children who had scored almost nearer to the mean have not shown a considerable difference as such.
- Thus, music therapy might help the profound and severe levels of the disability more competently than those with mild and moderate levels.

CONCLUSION

- Music has shown pieces of evidence of being used to treat a range of people varying from neurological problems to intellectual disability.
- It has been an effectively adopted therapeutic intervention in the development of cognitive, social, and emotional aspects of any individual and particularly the children with autism.
- The above study has proven the fact statistically and throughout the process, noticeable progress has been observed which was reinforcing to the children in return.
- The children who had nil or less social skills showed more improvement than those with a pre-existing level of social skills.

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