

# Effectiveness of Music Therapy on Communication Skill of Autistic Children

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## Abstract

The central impairments of people with autistic spectrum disorder (ASD) include social interaction, language and communication. Music therapy uses music and its elements to enable communication and expression, thus attempting to address some of the core problems of people with ASD.

**Keywords:** Autism; Communication; Music therapy; Non-verbal communication; Imitation & Listening Response.

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## Introduction

Human communication is embodies a rich tapestry of information conveyed through elements of verbalizations, gestures and emotional expressions. It is a process by which people interact with each other to form social relationships. It serves a number of social needs such as sharing pleasure, affection, desires, feeling, attitude etc it makes our life livelier. Moreover it helps us to develop an identity to ourselves. Communication is therefore a complex ongoing process, which develops and strengthens by experiences on social interaction.

Childhood Autism, a subgroup of Pervasive developmental disorder (PDD). PDD is a well-recognized syndrome. The key construct is the "triad of impairment", which affects social interaction, language and communication, and behavior and imagination, that can be identified through examination of early development and current presentation. Autism a developmental disability,

significantly affecting verbal and nonverbal communication of children.

Music therapy uses music and its elements to enable communication and expression, thus attempting to address some of the core problems of people with ASD. Music therapy has been defined as "a systematic process of intervention to help the client to promote health, using musical experiences and the relationships that develops through them as dynamic forces of change".

Music therapy also provides avenues for communication that can be helpful to those who find it difficult to express themselves in words. Research supports connections between speech and singing, rhythm and motor behavior, memory for academic material, and overall ability of preferred music to enhance mood, attention, and behavior to optimize the student's ability to learn and interact.

The processes that occur within musical improvisation may help people with ASD to develop communicative skills and their capacity for social interaction. Children with

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(Received on 02.04.2012, Accepted on 04.05.2012)

autism exhibit a high level of preference for the music modality, demonstrate a highly accurate memory for song lyrics, increased initiation of singing compared with speaking, and significant increases in attention, motivation, and emotional engagement during music activities.

#### *Need for the study*

Worldwide average ASD prevalence was 6.7 per 1,000 children in 2000 and 6.6 per 1,000 in 2002, or approximately 1 in 150 children. 4.5 cases per 1,000 births were reported in 2006. It means that an estimate of 67 children are diagnosed a day. The overall prevalence of autism for children between 3 and 12 years of age 1.3 cases per 1,000 births. Average male:female ratio is 4:1 and 1 in 104 males will be diagnosed.

In India, Prevalence of autism is on the rise. An estimate of 1 in every 10, 000 births were considered accurate during the 1970's, but today's literature agrees on a rate of 1 in every 150. They were 17.40 lakhs in 2005, 40 lakhs in 2006, and today the autism-affected population in India would be close to a Crore. That's 20,000 new cases every year. Unlike in the US and some European countries, there are no studies in India that document the rise in autism.

The worrisome syndrome has no treatment till now. While the disorder is not rare, a majority of children with autism, even in urban India have not been diagnosed and do not receive the services they need. In India there is a tremendous lack of awareness among professionals including medical professionals who may miss- diagnose and /or under diagnose the condition. Music therapy is emerging as one of the mode of treatment, accepted as an intervention for autistic people.

#### *Statement of problem*

A study to assess the effectiveness of music therapy on communication skill of autistic children in selected autistic center, Bangalore.

#### *Objectives of the study*

1. To assess the communication skill of autistic children among the experimental and control group in terms of pretest scores.
2. To assess the effectiveness of music therapy on communication skill of autistic children with pretest and posttest scores among experimental and control group.
3. To determine the association between pretest posttest communication skill and demographic variables among the autistic children.

#### *Hypothesis*

H<sub>1</sub>: There will be significant difference between the pretest and posttest communication skill scores of autistic children, among experimental group.

H<sub>2</sub>: There will be a significant difference between the communication skill scores of experimental and control group in terms of posttest score.

H<sub>3</sub>: There will be a significant association between the communication skill scores and selected demographic variables.

#### *Conceptual framework*

The conceptual framework selected for the study was based on Ernestine Wiedenbach's "prescriptive theory" (Helping art of clinical nursing theory 1968).

#### **Methodology**

The study design consisted of an evaluative approach with Quasi-experimental design. The population comprised of autistic children from selected autistic centers, Bangalore. The sample of 50 autistic children, 25 in experimental group & 25 in control group was selected by using Purposive sampling technique.

### *Development and description of tool*

The tool developed and used for data collection was Modified observational rating scale on communication skill consisting of two sections. Section A consisted of 17 items related to demographic variables and section B consisted of 40 items related to communication skill of autistic children. Covering the following areas, Receptive language, Expressive language, Verbal response, Non verbal response, Imitation and listening response.

### *Scoring*

The rating scales consist of 40 items, to be judged as Never, sometimes and always. The Never response was given '0' score, Sometimes response was given '1' score, and Always response was given '2' score with a total aggregate of 120 score.

### *Selection of music*

The following steps are adopted for selection of music for the study. Development of criteria checklist, Development of music therapy schedule, Content validation of music, Pretesting of the music therapy on autistic children.

### *Validity and reliability of the tool*

The content validity of the tool was established by 19 experts. The tool was found to be reliable and feasible. The reliability of the tool was established by using Split half method. The reliability Co-efficient is 0.9754 and Validity Co-efficient is 0.9876.

### *Data analysis*

The data gathered were analyzed and interpreted according to the objectives. Descriptive statistics were used and Mean, median, and standard deviation with graphical presentation of data. Inferential statistics was used to test hypothesis at 0.05 level significance. Chi-square test was applied for finding relationship between

communication skill and Music therapy and association between findings with demographic variables respectively.

### *Research findings*

#### *Section A: Description of Demographic variables (Sample characteristics)*

- Majority of the respondents 25 (50%) were in the age of 10-12 years.
- Majority of the respondents 39 (78%) were male.
- Majority of the respondents 31 (62%) were not having any complication during birth.
- Majority of the respondents 25 (50%) wear begin to speak at 16-24 months of age.
- Majority of respondents 41 (82%) were from Hindu families.
- Majority of the respondents 31 (62%) were from nuclear families.
- Majority of the respondents 37 (74%) belongs to family having income of above Rs 6000 per month.
- Majority of the respondents fathers 31 (62%) and respondents mothers 36(72%) were completed degree and above.
- Majority of the respondents 39(78%) from urban area.
- Majority of the respondent's father's 20 (40%) occupation was private employee and mothers 31 (62%) were housewives.
- Majority of respondents 26 (41%) were having 4-6 persons in the home.
- Majority of respondents 21(42%) were single child.
- Majority of the respondents 39 (78%) was not having any family history of mental illness /Autism.
- Majority of respondents 24(48%) were watching television.
- Majority of respondents 17(34%) were with occupational therapy.

- Majority of the respondents 36 (72%) were not having any associated health problems.

*Section B: Data on effectiveness of music therapy on communication skills of autistic children.*

There is improvement in communication after music therapy among experimental group. In the aspect of Non-verbal Response pretest and post test score was 48.3% and 68.7% which is more as compare to other aspect. However, The statistical paired 't' test implies that the difference in the pretest and posttest communication skill scores in various

aspects found statistically significant at 5% level. Hence the research hypothesis H<sub>1</sub> is accepted. So this indicates music therapy is effective for improvement in communication skill of autistic children.

Combined Mean Post test Score of Communication Skill among Experimental and Control Group is 79.1% and 46.5%. The obtained 't' value is 11.07. However, posttest scores of communication skill in various aspects among Experimental and Control Group found statistically significant at 5% level. Therefore research hypothesis (H<sub>2</sub>) was accepted. So this indicates music therapy is effective in the improvement of communication skill of autistic children.

**Table 1: Aspect wise Mean Pre test and Post test Communication Skill Scores of Experimental Group**

n = 25

No.	Aspects	Communication Skill Scores (%)						Paired 't' Test
		Pre test		Post test		Enhancement		
		Mean	SD	Mean	SD	Mean	SD	
I	Receptive Language	48.4	10.6	80.6	8.6	32.2	8.1	19.88*
II	Expressive Language	44.4	9.4	78.6	7.7	34.2	7.6	22.50*
A	Verbal Response	43.0	8.7	79.1	7.1	36.1	8.3	21.75*
B	Non-verbal Response	48.3	9.1	68.7	10.0	20.4	10.4	9.81*
C	Imitation & Listening Response	43.8	10.2	86.1	7.3	42.3	9.9	21.36*
	Combined	45.4	8.9	79.1	7.1	33.7	8.9	18.93*

Significant at 5% level,

t (0.05, 24df) = 2.064

**Table 2: Comparison of Aspect wise Mean posttest scores of communication skill among Experimental Group and Control Group**

No.	Aspects	Communication skill scores				Student 't' Test
		Experimental Group (n=25)		Control group (n=25)		
		Mean	SD	Mean	SD	
I	Receptive Language	80.6	8.6	53.1	12.5	9.06*
II	Expressive Language	78.6	7.7	44.3	14.1	10.68*
A	Verbal Response	79.1	7.1	42.5	13.6	11.93*
B	Non-verbal Response	68.7	10.0	47.5	14.7	5.96*
C	Imitation & Listening Response	86.1	7.3	44.6	16.3	11.62*
	Combined	79.1	7.1	46.5	12.9	11.07*

\* Significant at 5% level

**Table 3: Comparison of Over all Mean Posttest scores of communication skill among Experimental and Control Group**

Respondents	Sample (n)	Max. Score	Communication skill scores			Student 't' Test
			Mean	Mean (%)	SD	
Experimental Group	25	120	94.96	79.1	7.1	11.07*
Control Group	25	120	55.80	46.5	12.9	

\* Significant at 5% level

**Table 4: Classification of Respondents on Communication Skill level of Experimental Group**

Communication Skill Level	Classification of Respondents			
	Pre test		Post test	
	Number	Percent	Number	Percent
Inadequate (< 50%)	20	80.0	0	0.0
Moderate (51-75 %)	5	20.0	19	76.0
Adequate (> 75 %)	0	0.0	6	24.0
Total	25	100.0	25	100.0
Chi square	34.17*			

\* Significant at 5% level,

$\chi^2 (0.05, 1df) = 3.841$

Further the statistical  $\chi^2$  value is 34.17, which is significant at 5% level. There exists a significant association between communication skill scores of the respondents in pretest and posttest from experimental group.

*Section C: Association between pretest and posttest Communication skill and Demographic Variables among Autistic Children.*

Regarding gender, Male children had less communication skill scores as compared to female respondents. However there exists significant association between gender and pretest communication skill scores of autistic children. ( $\chi^2=9.03^*$ ,  $P<0.05$ ).

And there exists a non-significant association between pretest communication skills scores of control group and post test communication skills scores of autistic children among experimental group & control group and other selected demographic variables such as age, religion, any birth complications, type of family, area of living, education of parents, occupation of parents, family income, language, no. of family members, No. of

siblings, any psychiatric history of family, any associated health problem, behavior therapy.

## Discussion

The current study findings depict a real evidence of significant difference between posttest communication skill scores of experimental group and control group. Overall mean posttest communication skill scores of Experimental and Control Group was 79.1 and 46.5%. The obtained 't' value is 11.07 is statistically significant at  $p < 0.05$  level.

The above finding was supported by C. Edgerton, study on the effect of improvisational music therapy on the communicative behaviors of autistic children. Observational study revealed significant gains in autistic children communication behaviors as measured by Checklist of Communicative Responses/Acts Score Sheet (CRASS). Commensurate decreases in scores were noted when music therapy intervention was removed.

The above finding was supported by Katherine, study on Music therapy and autism. Result shows that music therapy has proven to be a very effective method in dealing with autism, allowing individuals to build social relationships and learn how to properly behavior in social situations. Interestingly, many with autism frequently show a heightened interest in music. While they are unable to communicate verbally with others, music is an avenue for many autistic people to express themselves and communicate with others nonverbally.

### Conclusion

The findings showed that none of the subjects had adequate communication skill score in the pre-test whereas 24 percent of the subjects had adequate and 76 percent of the subjects had moderate communication skill score in post-test.

From the statistical analysis it was clear that there was significant increase in the communication skill level of autistic children after administration of music therapy. From this it can concluded that music therapy was effective in bringing out communicative changes. We can use music therapy as one of the nursing intervention to treat autistic children.

### References

1. Erin Azbell, Teresa Laking. The short-term effect of music therapy on anxiety in autistic children. *UW-L Journal of undergraduate Research*. 2006; (9):1-8.
2. Incidence of autism. Available from: URL: <http://www.jammukashmirin.com/wikipedia.autism>.
3. Bunton Pierce G & Dunlap M. Autism and autism spectrum disorder (ASD). 1999; 11(4): 467.
4. Gold C, Wigram T, Elefant C. Music therapy for autistic spectrum disorder. *Journal of music therapy* [serial online] 2006 April; 19(2). Available from: URL: <http://www.google.com>.
5. Quotes about Music Therapy. American music therapy association. [serial online] 2007. Available from: URL: <http://www.google.com>.
6. Wigram T. Indications in Music Therapy: Evidence from assessment that can identify the expectations of music therapy as a treatment for Autistic Spectrum Disorder (ASD). *British Journal of Music Therapy*. 2002; 16(1): 11-28.
7. Marline Briciet Lauritsen. Effect of familial risk factors and place of birth on the risk of autism: a nationwide register- based study. *Journal of child psychology and psychiatry*. 2005; 46(9): 963-971.
8. P Balam. Autism, vaccines and editors. [serial online] 2004 April 10; 86(7):887-888. Available from: URL: <http://www.ias.ac.in/currsci/apr102004/887.pdf>.
9. Autism Information Center. Frequently Asked Questions - Prevalence of ASDs. [serial online] 2008. Available from: URL: <http://www.google.com>.
10. Is Autism on the Rise? The Hindu 2004 July 11; [cited on 2007 Nov 04]; Available from: URL: <http://www.hindu.com/2007/7/11/stories/>.
11. Autism disorder-Music therapy could bring a significant change. Available from: URL: <http://www.alterneteheals.com>.
12. Edgerton, C. The effect of improvisational music therapy on the communicative behaviors of autistic children. *Journal of Music Therapy*. 1994; 21(1): 31-62.
13. Katherine. Music therapy and autism. [serial online] 2007 [cited 2008 Oct 22]; Available from: URL: <http://www.pubmed.com>.