

## Effects of Play and Music Therapies on Social Interaction among Autistic Children in Therapeutic Day Care Centre, Enugu

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ChrisMichael Joy Mbanugo, M.O. Ezenwa, C.A.F Okoye,  
Chijioke Andrew O. & Stella Ugwueze

### Abstract

This study focused on the effects of play and music therapies on social interaction among autistic children in therapeutic day care centre, Enugu. A total of 40 autistic children (those with mild and moderate levels of impairment, who were in an existing therapeutic care at the school), from Therapeutic Day Care Centre (TDCC), Abakpa Nike, Enugu East, Nigeria, They were 24 (60%) males and 16 (40%) females from the nursery and primary section of the school. Their age range was from 5 to 11 years, with a mean age of 7.8 and a standard deviation of 1.9. The participants were randomly assigned to 4 different groups (gospel music group, cultural music group, play therapy group and control group) by the researcher and research assistants. It was a group play/music therapy session. The instruments used in this study include: Autism Treatment Evaluation Checklist (ATEC). ATEC was developed by Rimland and Edelson (1999).. The hypothesis one above revealed that there is statistically significant difference between gospel music and control group on social interaction among autistic children. Therefore, the hypothesis was accepted. The hypothesis two above revealed that there is no statistically significant difference between gospel music and cultural music on social interaction among autistic children, Therefore the hypothesis was rejected. The hypothesis three above revealed that there is no statistically significant difference between gospel music and play therapy on social interaction among autistic children, Therefore the hypothesis was accepted. The hypothesis four above revealed that there is statistically significant difference between cultural music and control group on social interaction among autistic children, the hypothesis five above revealed that there is statistically significant difference between cultural music and play therapy on social interaction among autistic children, Therefore the hypothesis was accepted. The hypothesis six above revealed that there is statistically significant difference between play therapy and control group on social interaction among autistic children. Therefore the hypothesis was accepted. The design for this study was pre-test / post-test control group experimental design because the same participants were tested before and after treatment. On the statistics, paired sample T-Test was used to analyze the data collected. The choice of this statistics was that one group was tested before and after the application of the therapy. The Statistical Package for the Social Sciences, IBM SPSS version 20 was used to manage the data.

**Keywords:** play therapy, music therapy, social interaction, autistic children

### Background to the Study

Over the years, people who live with autism are faced with different challenges which serve as threats to their lives (Uwaezuoke, 2015). This calls for urgent intervention. Globally, autistic children have deficits in social interaction and communication skills which made the disorder a social issue both to the individual, the family and the society. Children with autism are sometimes referred to as mentally retarded, having spiritual problems, schizophrenic or suffering from maternal deprivation; some are either diagnosed or wrongly diagnosed (Audu & Egbochuku, 2020). Many Nigerians believe that autism spectrum disorder has supernatural causes precipitated by angered ancestral spirits, wrongdoing, predominantly by the mother, or the action of the devil; and that it is a common pathway in Africa for a child with a neuro-developmental disorder to be taken first to a traditional healer, before a parent seeks orthodox medical assistance (Bakare & Munir, 2021). Human beings are social beings by

nature and it is expected that they gaze at people, initiate and respond to smiles and friendship and even respond to voices which possibly starts at a very tender age in life. In contrast, young children with autism have difficulties learning to engage in everyday interactions with adults or other children (Tsao, 2020). These problems are first seen in the absence of social interaction and communication skills observed among autistic children.

Therapeutic play allows children the opportunity to express themselves fully and at their own pace with the assurance that they will be understood and accepted (Landreth & Bratton, 2021).

Also, Axline (2021), believed that play was the natural form of communication for children. Therefore, adopting principles and modalities in play, the researcher tried to see if autistic children will have tremendous improvement in their social interaction and communication skills.

The play based autism treatment advocated in this research work was a cultural (Igbo Akpankoro) play technique often observed in schools in the South-East Igbo speaking part of Nigeria, at break time or during moonlight tales by children. The reason is to bring home the play technique to the cultural method of play and life which Igbo people are known for and to incorporate autistic children into interpersonal activities since it has been noted that they are often isolated and stigmatized by peers; assuming that it will have positive effect in their social interaction. Again play is universal and has cultural influence on children, which autistic children are not excluded. This particular play is used with special considerations to the play of the culture of the participants and its quality with regards to the characteristics (interaction, action, practice, and expression) of play.

Krystal (2019), observed the use of musical instruments and dramatic play in play therapy session as part of cultural diversity in play therapy. The music the researcher used was Igbo gospel and cultural music written in Igbo language respectively. The reason is to bring home the gospel and cultural music to the life which Igbo people are known for, knowing that culture and language have impact in the lives of individuals.

A lot of studies have revealed that people's perception and emotional impact within music is associated more with cultural tradition than the elements of the music itself (Bright, 2021). MT in this study will be played in group following the findings by (Overy & Szakacs 2019), that group musical environments provide opportunities for learning social skills such as imitation, turn taking, social reciprocity, joint attention, shared affect, and empathy among autistic children.

### **Statement of the Problem**

The study focused on the effective use of cultural play and music in the treatment of social interaction deficits among autistic children. Autistic children have difficulties initiating and keeping friends, they rarely smile; they avoid contact with others and are insensitive to others' feeling. A lot of research has shown that development in the areas of social interaction and communication skills of autistic children are impaired which lead to deficits in their social interaction (Autism Society of America, 2022).

### **Purpose of the Study**

The major purpose of the study was to assess the effect of play and music therapies on social interaction among autistic children. Therefore, the specific objectives were as follows:

1. To determine whether there will be a significant difference between participants exposed to gospel music and those in control group on social interaction among autistic children.
2. To determine whether there will be a significant difference between participants exposed to gospel music and cultural music on social interaction among autistic children.
3. To determine whether there will be a significant difference between participants exposed to gospel music and play therapy on social interaction among autistic children.

4. To determine if there will be a significant difference between participants exposed to cultural music and those in control group on social interaction among autistic children.
5. To determine whether there will be a significant difference between participants exposed to cultural music and play therapy on social interaction among autistic children.
6. To determine whether there will be a significant difference between participants exposed to play therapy and those in control group on social interaction among autistic children.

### **Participants**

Participants for this study were 40 autistic children (those with mild and moderate levels of impairment, who were in an existing therapeutic care at the school), from Therapeutic Day Care Centre (TDCC), Abakpa Nike, Enugu, South-East, Nigeria, who met the inclusion criteria and whose parents gave their consent by signing a consent form, and they were all Igbos. They were 24 (60%) males and 16 (40%) females from the nursery and primary section of the school. Their age range was from 5 to 11 years, with a mean age of 7.8 and a standard deviation of 1.9. All the participants were Christians by religion (100%) and Igbo by tribe (100%). Ten of the participants had mothers with primary education, seven with secondary education and twenty-three with tertiary education. Five of the participants had fathers with primary education, fifteen with secondary education and twenty with tertiary education. On family background, data showed that 5 (12.5%) of the participants were from polygamous family background and the other 35 (87.5%) were from monogamous family background. The participants were randomly assigned to 4 different groups (gospel music group, cultural music group, play therapy group and control group) by the researcher and research assistants. It was a group play/music therapy session.

### **Instruments**

The instruments used in this study include:

**Autism Treatment Evaluation Checklist (ATEC)** ATEC was developed by Rimland and Edelson (1999). The checklist was developed to help evaluate the effectiveness of various treatments for children and adults living with autism, and to help parents to measure changes in response to treatment. It also helps parents\teachers to determine if their children benefit from a specific treatment. Parents and teachers use Autism Treatment Evaluation Checklist to monitor the progress in their autistic children's performance over time. Autism Treatment Evaluation Checklist is different from other diagnostic instruments because it measures the effect of treatment, as opposed to diagnosing autism. Thus, it is not a diagnostic checklist. ATEC has three forms designed to be completed by parents, teachers, or caregivers. Only that of teachers was used in this present study.

### **Procedures**

The instruments the researcher used for music therapy included: a gospel music in a Compact Disc entitled "Ngozi Chukwu" by Mich. C. Philips, track 2 named "Iheonunkem emeela". The CD has 9 tracks in it but track 2 was used in this study. It was produced by Gozie Okeke, marketed and distributed by God's Strength Music. No. 3 Oshodi Road, Oshodi, Lagos. The second instrument was a compact disc that contains music entitled "Sweet Mummy" by Jesus Kids, Mummy ooo, mama gwamihe m ga-eme, track 2. The CD has eight tracks in it but track 2 was used in this research. It was produced by Kabatex Studio, at No. 1 Obi Line; Marketed and distributed by Labaco Music, No. 94 Iwaka Road Onitsha; and Sunlight Music, No 96 Iwaka Road Onitsha. *An LG Home Theatre System: Model: HT3585D, with serial number: 509TRAR036744 produced in Japan in September 2015 was used to play the music. The children are expected to beat the local instruments in the music room, nod their heads, make movements in connection to the beating and express themselves to the tone of the music as they watch the researcher and research assistants do that.*

*In play therapy, the play used was Igbo cultural play (Akpankoro - kpankoro) often used in schools and during moonlight tales, for Igbo people in South-East Nigeria. To play this, participants are organized in a cycle holding each other with their special teachers and research assistants being in-between each autistic child as they take turns in doing this. The researcher and research assistants sing akpankoro-kpankoroudu moo ogene onye omara*

suruyaya suruyaaa, at the mention of suruyaaa the participants are expected to stoop down. The last person to stoop down at this period will be told that he/she failed it, and then the play continues. At last the participants that did not fail two times or more will receive chocolate as motivation for performing well that day. The play therapy was a directive type of play and was based on observation/role play.

**Design and Statistics**

The design for this study was pre-test / post-test control group experimental design because the same participants were tested before and after treatment. On the statistics, paired sample T-Test was used to analyze the data collected. The choice of this statistics was that one group was tested before and after the application of the therapy. The Statistical Package for the Social Sciences, IBM SPSS version 20 was used to manage the data.

**Result**

**Table 1**

Summary Table Mean and Standard Deviation for paired sample T-test of effect of gospel music and control group on social interaction among autistic children

Pair 1 gospel music and control group	Paired difference				t	Df	Sig.(2 tailed)
	Mean	Std. deviation	Std. error mean	95% confidence interval of the difference			
	10.80000	3.15524	.99778	Lower 8.54288			
					10.824	9	.000
						.978	

The hypothesis one stated that there will be a significant difference between participants exposed to gospel music and those in control group on social interaction among autistic children. The paired sample t-test result on the effect of gospel music and control group on social interaction among autistic children on table one above revealed that there is statistically significant difference between gospel music and control group on social interaction among autistic children at (t = 10.824, df = 9, p<0.000, two-tailed). Therefore the hypothesis was accepted.

**Table 2**

Summary Table Mean and Standard Deviation for paired sample T-test of effect of gospel music and cultural music on social interaction among autistic children.

The hypothesis two stated that there will be a significant difference between participants exposed to gospel music

Pair 2 Gospel music and Cultural music	Paired difference				t	Df	Sig.(2 tailed)
	Mean	Std. deviation	Std. error mean	95% confidence interval of the difference			
	.40000	.84327	.26667	Lower -.20324			
					1.500	9	.168
						.685	

and cultural music on social interaction among autistic children. The paired sample t- test result on the effect of gospel music and cultural music on social interaction among autistic children on table two above revealed that there is no statistically significant difference between gospel music and cultural music on social interaction among autistic children at (t = 1.500 df = 9, p<0.168 two-tailed). Therefore the hypothesis was rejected.

**Table 3**

Summary Table Mean and Standard Deviation for paired sample T-test of effect of gospel music and play therapy on social interaction among autistic children.

Pair 3 gospel music and play therapy	Paired difference				t 1.909	Df 9	Sig.(2 tailed) .089	
	Mean	Std. deviation	Std. error mean	95% confidence interval of the difference				
	1.40000	2.31900	.73333	Lower				Upper
				-.25892				3.05892

The hypothesis three stated that there will be a significant difference between participants exposed to gospel music and play therapy on social interaction among autistic children. The paired sample t- test result on the effect of gospel music and play therapy on social interaction among autistic children on table three above revealed that there is statistically significant difference between gospel music and play therapy on social interaction among autistic children at (t =1.909 ,df = 9, p<0.089, two-tailed). Therefore the hypothesis was accepted.

**Table 4**

Summary Table Mean and Standard Deviation for paired sample T-test of effect of cultural music and control group on social interaction among autistic children.

Pair 4 Cultural music and control group	Paired difference				t 11.215	Df 9	Sig.(2 tailed) .000	
	Mean	Std. deviation	Std. error mean	95% confidence interval of the difference				
	10.600000	2.98887	.94516	Lower				Upper
				8.46189				12.73811

The hypothesis four stated that there will be a significant difference between participants exposed to cultural music and those in control group on social interaction among autistic children. The paired sample t- test result on the effect of cultural music and control group on social interaction among autistic children on table four above revealed that there is statistically significant difference between cultural music and control group on social interaction among autistic children at (t = 11.215 df = 9, p<0.000 two-tailed). Therefore the hypothesis was accepted.

**Table 5**

Summary Table Mean and Standard Deviation for paired sample T-test of effect of cultural music and play therapy on social interaction among autistic children.

Pair 5 cultural music and play therapy	Paired difference				t 2.228	Df 9	Sig.(2 tailed) .053	
	Mean	Std. deviation	Std. error mean	95% confidence interval of the difference				
	1.60000	2.27058	.71802	Lower				Upper
				-.02428				3.22428

The hypothesis five stated that there will be a significant difference between participants exposed to cultural music and play therapy on social interaction among autistic children. The paired sample t- test result on the effect of cultural music and play therapy on social interaction among autistic children on table four above revealed that

there is statistically significant difference between cultural music and play therapy on social interaction among autistic children at ( $t = 2,228$ ,  $df = 9$ ,  $p < .053$  two-tailed). Therefore the hypothesis was accepted.

**Table 6**

Summary Table Mean and Standard Deviation for paired sample T-test of effect of cultural music and control group on social interaction among autistic children.

Pair 6 play therapy and control group	Paired difference				t	Df	Sig.(2 tailed)	
	Mean	Std. deviation	Std. error mean	95% confidence interval of the difference				
	10.400000	3.09839	.97980	Lower				Upper
				8.18355				12.61645
					10.614	9	.000	
						.082		

The hypothesis six stated that there will be a significant difference between play therapy and those in control group on social interaction among autistic children. The paired sample t- test result on the effect of play therapy and those in control group on social interaction among autistic children on table six above revealed that there is statistically significant difference between play therapy and control group on social interaction among autistic children at ( $t = 10.614$ ,  $df = 9$ ,  $p < .000$  two-tailed). Therefore the hypothesis was accepted.

**Discussion of Findings**

The findings made in this work showed that some studies were in line with the findings made and very few were contrary to the findings. The first hypothesis which stated that there will be a significant difference between participants exposed to gospel music and those in control group on social interaction among autistic children was accepted. This finding showed that autistic children belong to a particular culture and language and also enjoy the local pattern of lives of their people too. As rightly stated by Shelemay (2015), that human beings came into this world with an innate capability for music and that this capability is shaped by the music system of the culture in which a person is raised. This result is in line with the findings made by Eren, (2015) whose findings showed that some adolescents with ASD improved in areas such as turn taking, eye contact, listening, self-expression, coordinated movement in their groups decision making with others, and acceptance of others’ differences using music therapy.

The second hypothesis which stated that there will be a significant difference between participants exposed to gospel music and cultural music on social interaction among autistic children was rejected. The music adopted in this study was Igbo music which Igbo indigenes are in love with. It was obvious that culture played significant role here, so the music culture of Igbos played the role in stimulating the participants and creating results. Palladian and Lerner (2022), rightly observed that offering music experiences in children’s language, supports dual language development in the first three years and beyond. Kim, Wigram and Gold, (2020) found significant evidence supporting the value of music therapy in promoting social, emotional and motivational development in children with autism.

The third hypothesis which stated that there will be a significant difference between participants exposed to gospel music and play therapy on social interaction among autistic children was accepted. This could be that cooperative play was used in this therapy. In cooperative play, a child plays in a group that is organized for the purpose of making some material product or striving to obtain some competitive goal, or of dramatizing situations of adult and group life. There is a division of labor, the taking of different roles by various group members, and the organization or activity so that the efforts of one child are supplemented by those of another. The effectiveness of

play therapy more than music therapy possibly showed that children are naturally in love with play and that being a cultural play its application brought home cultural method of play and life which Igbo people are known for. The hypothesis four stated that there will be a significant difference between participants exposed to cultural music and those in control group on social interaction among autistic children was accepted. This was in sharp contrast with the findings made by Reynolds, Stagnitti and Kidd (2021), who compared a play based curriculum versus a traditional curriculum and observed that the play based children improved significantly more in narrative language, complex play ability and social cohesion than children in the traditional curriculum. However, this result showed that culture and activities going on within a setting have great influence in the lives of people. This result is in line with findings made by the following researchers, (Simpson, 2021), they found that music therapy is very effective in the social interaction and communication of autistic individuals. Also, Boxill and Chase, (2022) demonstrated that music therapy encourages communicative behaviour of autistic children through the unique non-verbal way of communication provided by music.

The hypothesis five which stated that there will be a significant difference between participants exposed to cultural music and play therapy on social interaction among autistic children was accepted. This is a typical indication that the lives of children are filled with playful activities. This study is in tandem with the findings made by Whitebread et al, (2019), they observed that children suffering from severe play deprivation suffer abnormalities in neurological development, but the provision of play opportunities can at least partially remediate the situation, the effect of play in this study actually showed involvement of these autistic children who have long been suffering from play deprivation by peers.

Hypothesis six stated that there will be a significant difference between participants exposed to play therapy and those in control group on social interaction among autistic children was accepted. This showed that play is the language children understand and to speak their language you convert it into playful activity.

### **Implications of the Study**

The findings of the study have far reaching implications to the society, parents, the autistic children, teachers, researchers, NGOs and government will benefit from the study. Parents will benefit from this study because it will help them adopt the practice of music and play therapies for their autistic children as one of the intervention strategies. Government will also benefit from this study because it will help them in formulating policies that will consider the plight of the autistic children and in providing them with necessary facilities needed to help them. The society will also benefit because when there is improvement in the intervention modalities and educational system of the autistic children especially on the areas of social interaction and communication skills there will be reduced number of autistic persons allowed roaming the streets tagged as mad persons and nuisances.

### **Recommendations**

Based on the findings made in this study, the researcher therefore made the following recommendations:

1. It is recommended that local music and play be used in schools, at homes and therapeutic centres to enhance the social interactions of autistic children.
2. It is also recommended that folk play such as akpankolo which has been in existence as an informal therapy will be integrated into the formal therapy as found in this study; it can be used as one of the treatment procedures for helping autistic children. It is also very important to start these interventions early enough so as to lessen the amount of damage non-intervention among the autistic children could cause.

### **Suggestions for Further Study**

Based on the findings of this study, the researcher hereby suggests that additional studies will be valuable to replicate and expand this work. In further studies also there is need to increase the sample size, and two or more schools should be included in the study, this will bring about more conclusive and generalizable inferences and

will also help to reduce bias. More so, efforts should be made to accommodate cross-cultural studies for wider ecological validity. There is need also to use our local music and play to enhance the activities of the autistic children.

### **Conclusion**

This study examined the effect of play and music therapies on social interaction among autistic children. The participants for this study were 40 autistic children from Therapeutic Day care center, Enugu. Autism Treatment Evaluation Checklist was used to evaluate treatment progress on the participants. Six hypotheses were postulated for this study, five were accepted and one was rejected. Based on the findings, the study recommended the use of cultural method of therapies in schools and homes with autistic individuals. Also, based on the limitations discovered, several ideas were suggested for future research in clinical psychology, and studies among autistic children in Nigeria.

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ChrisMichael Joy Mbanugo, Department of Psychology, College of Management and Social Sciences, Renaissance University Ugbawka, Agbani, Enugu. [Chris.mike123@yahoo.com](mailto:Chris.mike123@yahoo.com) and [mbanugo.cj@mu.ng](mailto:mbanugo.cj@mu.ng)

M. O. Ezenwa, Department of Psychology, Nnamdi Azikiwe University, Awka, Anambra state

C.A.F Okoye, Department of Psychology, Nnamdi Azikiwe University, Awka, Anambra state

Chijioke Andrew O., Department of Psychology, College of Management and Social Sciences, Renaissance University Ugbawka, Agbani, [chijiokeandrew1@gmail.com](mailto:chijiokeandrew1@gmail.com) and [Andrew.chijioke@mu.edu.ng](mailto:Andrew.chijioke@mu.edu.ng)

Stella Ugwueze, Department of Psychology, College of Management and Social Sciences, Renaissance University Ugbawka, Agbani, Enugu. [stellaug@gmail.com](mailto:stellaug@gmail.com)