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The effect of music on autistic children

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Abstract
Music interconnection with society can be seen throughout history. Every known culture on the earth has music. Music seems to be one of the basic actions of humans. However, early music was not handed down from generation to generation or recorded. Hence, there is no official record of "prehistoric" music. Even so, there is evidence of prehistoric music from the findings of flutes carved from bones. The influence of music on society can be clearly seen from modern history. Albert Einstein is recognized as one of the greatest scientist who has ever lived. A little known fact about Einstein is that when he was young he did extremely poor in school. His grade school teachers told his parents to take him out of school because he was "too stupid to learn" and it would be a waste of resources for the school to invest time and energy in his education. The school suggested that his parents get Albert an easy, manual labor job as soon as they could. His mother did not think that Albert was "stupid". Instead of following the school's advice, Albert's parents bought him a violin. Albert became good at the violin. Music was the key that helped Albert Einstein become one of the smartest men who has ever lived. Einstein himself says that the reason he was so smart is because he played the violin. In general, responses to music are able to be observed. It has been proven that music influences humans both in good and bad ways. These effects are instant and long lasting. Music is thought to link all of the emotional, spiritual, and physical elements of the universe. Music can also be used to change a person's mood, and has been found to cause like physical responses in many people simultaneously. Music also has the ability to strengthen or weaken emotions from a particular event such as a funeral. In this paper we are presenting the effect of music on autistic children. The tests were done using 3 autistic children and playing different types of music – Hindustani classical, piano and pop song.

Keywords: Autism, Neural development, Music Therapy, remediation

1. Introduction

Individuals of all ages and all abilities can benefit from music therapy. Previously, music therapy has been used to support emotional, cognitive and social development in many populations. Music therapy may help to promote wellness by managing stress, enhancing memory, and improving communication. Autism [1] is a condition caused by a disorder in the neural development. The symptoms of autism are the inability to interact socially, being unable to speak or communicate properly and repetitive behavioral patterns. These symptoms normally surface in children who suffer from autism by the age of three. Music therapy [2] has been found to be beneficial to children with autistic conditions as it does not involve verbal communication.

Music therapy has been found to be especially effective in the remediation and development of speech among autistic children. Some autistic children are able to sing even though they cannot speak. Another observation is that autistic children are sensitive to music [3]. They often are able to play musical instruments.

A 2004 study from the Journal of Music Therapy [4] found that music in interventions used with children and teens with ASD can improve social behaviors, increase focus and attention, increase communication attempts (vocalizations, verbalizations, gestures, and vocabulary), reduce anxiety, and improve body awareness and coordination.

Many additional studies have found that children and adults with autism spectrum disorders (ASD) respond well to music. Often, individuals with autism respond positively to music when little else is able to get their attention, which makes music a potential therapeutic tool.

Hypothesis

Our hypothesis is that Autistic children will be more relaxed and calm when music is played in the background.

2. Materials

The materials required for the trial:

1. 3 autistic children matured 10 to 12 years of age
2. Approval of their guardians to have them included in this trial.
3. 1 classical music CD

4. 1 piano instrumental music CD
5. 1 pop melody CD
6. 1 CD player
7. 1 stopwatch

Procedure

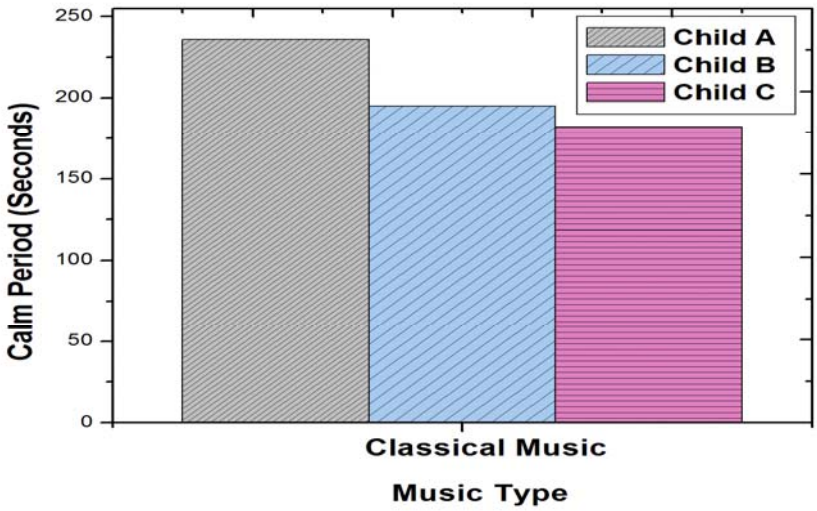
1. For this examination, the free variable is the kind of music played – classical music, piano instrumental music or pop tunes. The subordinate variable is the period of time the youngster has the capacity sit and be casual. This is controlled by utilizing a stopwatch to record the time the mentally unbalanced kid tries to avoid panicking. The constants (control variables) are the age of the youngsters, the sexual orientation of the kids and nature of the room utilized for testing.
2. Permission is first obtained from the parents of the 3 autistic children.
3. On the 1st day of experiment, the autistic children will be tested with the classical music. The first child to be tested is brought into the room used for testing and given some time to adjust and sit comfortably. The classical music is played on the CD player for 15 minutes and the autistic child is observed. The longest period of time the child is able to sit relaxed while the music is being played is taken with a stopwatch and recorded in the table given below.
4. Procedure 3 is repeated on the second and third child. The longest time they are able to sit calmly while the music is being played for 15 minutes is recorded in the table below.
5. Procedures 3 and 4 are repeated using piano instrumental music or pop songs on the second day and third day.
6. On the fourth day, the 3 autistic children are made to sit in the same place for 15 minutes without any music and the length of time they are able to sit relaxed is noted and recorded in the table given below.

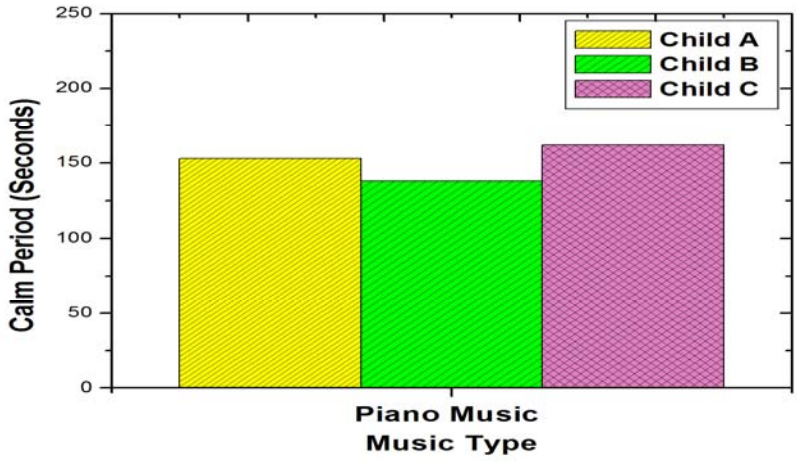
Observation

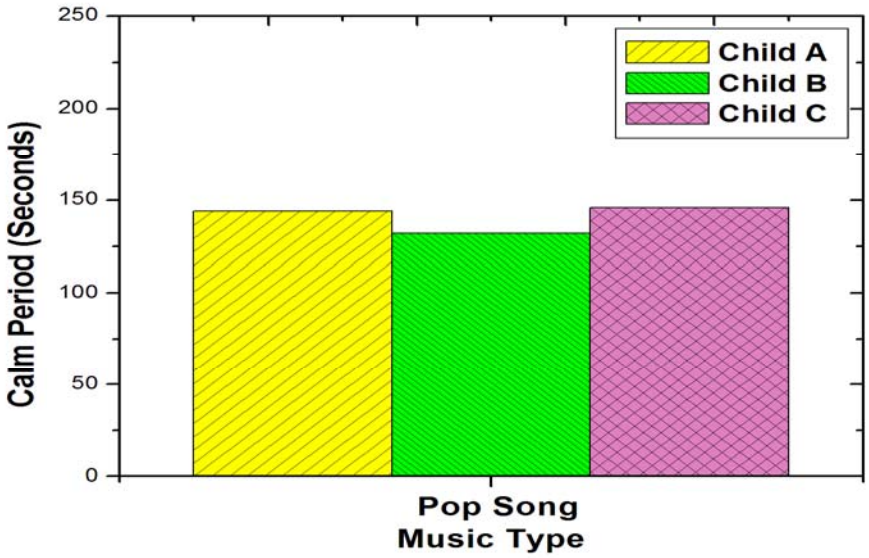
The results showed that the autistic children were able to relax longer when music being played in the background. They were able to remain calm the longest when classical music was played.

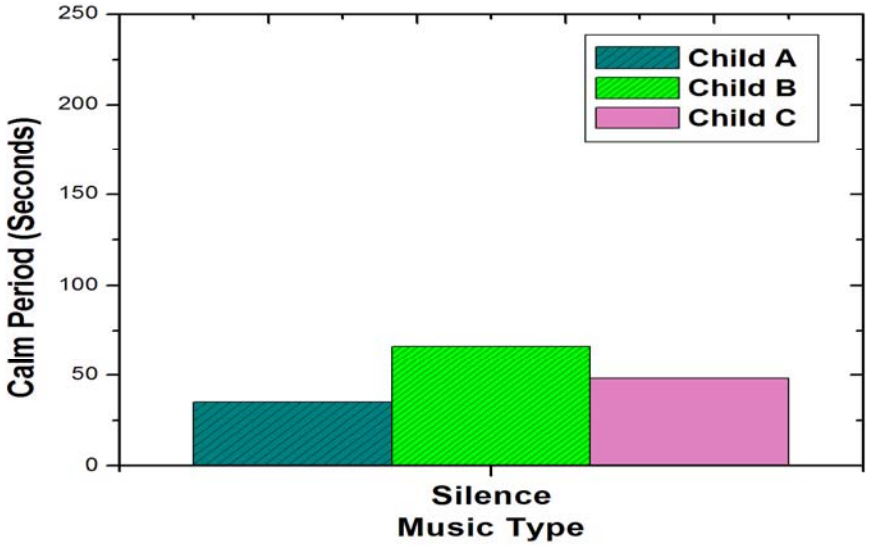
Autistic child	Length of time the child was relaxed when music was played (seconds)			
	Classical	Piano	Pop song	Silence
Child A	236	153	144	35
Child B	195	138	132	66
Child C	182	162	146	48

The graph below represents the results of our experiment.









3. Conclusion

Autism is a neurological disorder where the brain's normal functions are adversely affected. The symptoms normally appear during early childhood and continue through a person's adulthood. Currently there is still no known cure for this condition. However, music therapy has been accepted and used on autistic persons since the 1950's.The hypothesis that autistic children will be more relaxed and calm when music is played in the background is proven to be true.

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