SUMMARY

Autism is a Pervasive Developmental Disorder, which was previously considered as 'infantile schizophrenia'. Later in 1943 Kanner coined the term on the basis of the characteristics typical to this disability. The characteristics of this disability are hidden in the term itself, which has been derived from the words 'auto' and 'ism'.

The primary deficits observed in children with autism are in communication, socialization and stereotypic behaviour which often takes the form of problem behaviour. These major deficits resist the normal development in these children and build an impenetrable wall which makes them engrossed in their own world. Consequently, they are segregated from the rest of the world. Apart from these basic dysfunctions in the three significant developmental spheres, these children display a variety of behavioural problems which have their origin in the sensory dysfunctions.

Presently autism is considered as a neuro-developmental disorder. Different surveys and researches report that autism is diagnosed in 1 child out of every 150 births. It has been mostly observed in males in comparison to females, the ratio being 6:1.

Socialization is a process, beginning in infancy, whereby one acquires the attitudes, values, beliefs, habits, behaviour patterns and accumulated knowledge about one's society, through the processes of child rearing, education and social interaction.
Autistic children lag behind their non-autistic counterparts in establishing 'attachment' and 'affectional bonds' with the significant others. As a result they lack the warmth in their social and emotional reciprocity with others. Instead, their interaction is characterized by 'mechanical expression' of their basic needs.

Communication involves acquisition of language and also the appropriate expression of language to express one's feelings and needs to others. It is also facilitator of cognitive development and social interaction. Some autistic children cannot acquire language in spite of having flawless organs responsible for the development of speech. Others who develop speech use it 'mechanically', only to express their basic needs. Autistic speech characterizes echolalia, pronoun reversal and perseverance.

Behavioural problems can be considered as a significant hurdle which stops the children with autism from the maximum utilization of whatever potentialities they have. Orintz (1983) commented that most of the behavioural problems of autism are due to the sensory dysfunctions. These dysfunctions are manifested in form of self stimulatory behaviours by activating different sense organs. These problems thicken the impenetrable walls of autism and make it difficult for them as well as for the others to interact with them.

The glass wall within which they captivate themselves can best be penetrated through music. Music is the eternal love of all living creatures and more so of people with autism. Past researches have attempted to heal autistic symptoms with the help of music. The
present research has also aimed the same varying the types of music.

It has taken a total of 90 children all diagnosed reliably with autism and all presently in a therapeutic set up. All of them were assessed with the help of Portage Early Education Program on communication and socialization. A problem Behaviour checklist (Guharay unpublished Ph.D. thesis 2007) was duly filled. So the children were assessed along the 3 parameters-communication, socialization and problem behaviour.

45 children were there in the experimental group and 45 others in the control group. It was a matched pair. The experimental group was divided into 3 groups on the basis of age:

- Group A-age 4-8
- Group B-age 8-12
- Group C-age 12-16

15 children were present in each group

It was rearranged into 2 more groups. One being on the basis of severity:

- Mild to moderate
- Moderate to severe.

22 children were there in the first group and 23 in the second one.

Another group was on the basis of epilepsy.
• 15 children were selected who had an epileptic attack with the past 6 months.

• 15 children matched with them were also selected.

Musical intervention was provided with 2 types of music:

• Hundusthani Classical music-thorough a process of selection and elimination a flute recital of 11 minutes in raga misra pilu by pt. Raghunath Seth was selected.

Pilu uses all the twelve notes giving lots of freedom and independence to the artist for creativity. This is meant to be improvised for lighter forms of Indian Classical music like Thumri, Dadra, Hori or Kajri. It is also a well known fact that these lighters forms emphasize more on the emotional aspects, creating an emotional appeal rather than the sheer joy of technical correctness.

• In its improvised versions Pilu popularly encourages the sequential usage of the usual and softer versions of the same note. For example a “Meer” (rolling from one note to another) combination can be “sa ni Ni dha Dha pa ma ga Ga sa ni sa”. This smooth gliding of notes all across the octaves can create a very soothing effect on the mind, even if someone misses the mastery and control needed to execute the same.

Raga Misra Pilu was selected. Mishra Pilu is a variant of Pilu and thus inherits most of its parental traits. The pure raga would involve more of technical correctness and that might lead to a
compromise in the aesthetic appeal of the rendering. A pilot study was conducted. There was a significant decrease in hyperactivity. A flute composition by Raghunath Seth was selected.

- **Western music**- Mozarts' K448 was selected as a tried and tested medicine for the children. The demonstration was of 4.5 minutes. It was played back to back twice for the children.

In the western world the sonatas and symphonies of Mozart has time and again been used to heal persons with autism and epilepsy.

The concept of the "Mozart effect" was described by French researcher, Dr. Alfred A. Tomatis (1991) in his book *Pourquoi Mozart?*. He used the music of Mozart in his efforts to "retrain" the ear, and believed that listening to the music presented at differing frequencies helped the ear, and promoted healing and the development of the brain.

Rauscher, Shaw & Ky (1993) investigated the effect of listening to Mozart's Sonata for Two Pianos in D major K.448 has also been known to reduce the number of seizures that people with epilepsy have. The University of Illinois Medical Center did an experiment on 29 epileptic patients. After listening to the piece for up to 300 seconds, 23 of the 29 patients experienced significant decreases in epileptiform activity, even from patients in comas. They are not certain if this effect is immediate or if it requires 40-300 seconds to become apparent.
Rapport was established with the children and they were lead into the room prepared for music therapy. It was a semi-dark one. A reclining chair was arranged for them and a headphone was used. Children who were reluctant were given 3 trial sessions. If they did not calm down with that they were dropped.

Half of the children received Hindustani Classical music at first and the other half received Mozart at first to nullify order effect. During statistics the 2 groups were merged.

ANOVA computed showed that the children have gained significantly from both eastern and western music. The gain is more with western music. The observation is true for all the communication socialization and problem behavior at a significant level. The children in age group C(12-16) and children in group B(8-12) have gained more than group A(4-8).

Both epileptic and non epileptic; as well as children with the two different levels of autism(mild-moderate; moderate-severe) gained almost equally from the intervention provided.

Overall the research shows that music, both eastern and western heal autistic symptoms.