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Case Study

A Case Study: Indian Ragas Adjunct to Floor Time Therapy for of a Child with Autism

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ABSTRACT

Autism is a pervasive developmental disorder characterized by abnormal functioning in social interaction, communication, and restricted, repetitive behaviors. Efforts have been made to meet the rising demands for innovative therapeutic services that can give autistic children to develop intellectually, socially and to discover their talents & cope with their challenges. One such therapeutic module is "Floor time therapy". It is a component of the comprehensive Developmental, Individual-difference, Relationship-based intervention and assumes that language, cognition, emotional and social skills, are learned through relationships that involve emotionally meaningful exchanges, children vary in their underlying motor and sensory processing capacities, and progress in all areas of development is interrelated. The tools were used Developmental Screening Test, Indian adaptation of Vineland Social Maturing Scale and Indian Scale for Assessment of Autism. The therapeutic potential of Indian ragas has been well documented in the treatment of various psychological problems. Ragas are believed to affect specific chakras or energy centers and create an atmosphere of harmony in the body. The result shows that the potential ragas were played in a pre-planned sequence during the Floor time therapy sessions. Integration of these two therapeutic techniques showed positive results.

Keywords: *Autism, Floortime therapy and Indian Raga*

Autism is a pervasive developmental disorder characterized by abnormal functioning in social interaction, communication, and restricted, repetitive behaviors (WHO, 1992). Efforts have been made to meet the rising demands for innovative therapeutic services that can give children with Autism the best chance to develop intellectually and socially and to discover their talents and cope with their challenges. One such therapeutic module is "Floortime therapy". It is a component of the comprehensive DIR-based (Developmental, Individual-difference, Relationship-based) intervention programme and assumes that (a) language and cognition, as well as emotional and social skills, are learned through relationships that involve emotionally meaningful exchanges, (b) children vary in their underlying motor and

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sensory processing capacities, and (c) progress in all areas of development is interrelated (Greenspan, and Wieder, 2007). Floortime is both a specific technique—in which for twenty or more minutes, at a time, a caregiver gets down on the floor to interact with the child—and a general philosophy that characterizes all daily interactions with the child. Through this approach child can learn to relate and engage with warmth, trust, and intimacy; interact, read and respond to social signals; engage in imaginative play, and also use language and reflective thinking in more creative manner (Solomon et al., 2007; Josefi and Ryan, 2004; Greenspan, and Wieder, 1997).

Another innovative technique that has been used in various psychiatric disorders is the use of music. According to American Musical Therapy Association, music can be used to design interventions to promote wellness, manage stress, alleviate pain, express feelings, enhance memory, improve communication, and promote physical rehabilitation (Dileo, 1999). As a form of therapy, music can be used in multiple variations. Lots of well-documented theories and arguments about the value of improvisation of music in therapy work for the clinical population is existing (Wigram, 2004). Efficacy of Indian ragas for mind and body is also well documented (Sarkar, and Biswas, 2015). The potential of different ragas has also been researched on children with Autism. Banerjee et al., in their research on 20 children with Autism found out that the ragas “Hamsadhani” and “Deepak” promoted aggressive behavior while ragas “Pilu”, “Mishrapilu”, and “Shreewas” made the children calm and increased the level of their ability to express themselves.

In the present case report, Indian ragas (Music Therapy) have been used as an adjunct to Floortime therapy.

CASE REPORT

Index child AM, 7 years old, male, studying in U.K.G, hailing from higher socio-economic status of urban Odisha, was brought by his parents with the chief complaints of poor eye contact, poor social interaction, and repeated hand flapping behavior since the age of two and half years and loss of previously acquired speech (i.e. babbling few words which he had learned before like – maa, papa etc) at the age of 3 years. According to parents, a child was born of normal delivery in a Government hospital. The birth cry was spontaneous and no pre, peri or postnatal complications were reported. Up to the age of two and a half years, his developmental milestones were age-appropriate, except speech which was delayed. Till the age of two years, he was not able to speak any single word. At the age of three years, he started speaking two-three words like ma, pa, di etc. but in a span of one year, he again lost all those words and stopped speaking anymore. After consulting a physician, parents took the child to a speech therapist in Odisha for six months, but no improvement was seen. At approximately 2½ years of age, his family members also started noticing that he was different from other children of his age in terms of his response to social stimuli. He would not respond to his parents even after being called repeatedly. He never maintained eye contact in any kind of conversation or show a social smile. He would prefer staying aloof and did not show any interest towards his surrounding or any person including his parents. He would stare at an object for a long time, like a pen or book etc. and never demanded any kind of toys even when taken to toy shops. He had also started making repeated hand-flapping movements. However, it was reported that he had a great interest in cartoon channels and could sit for more than three hours continuously watching them.

The child was assessed using Developmental Screening Test (DST) (Bharatraj, 1983), Indian adaptation of Vineland Social Maturing Scale (VSMS) (Bharatraj, 1992), and Indian Scale for Assessment of Autism (ISAA) by the National Trust, Ministry of Health and Family Welfare, and Ministry of Social Justice and Empowerment of the Government of India (Mukherjee et al., 2015). Pre-treatment assessment of the child suggested a moderate delay in developmental milestones (Developmental Quotient- 36), moderate impairment in socio-adaptive functioning (Social Quotient-40) and a moderate level of autism according to ISAA (score-130). Behavioral observation on the first day showed that he was not responding or maintaining any eye contact even on repetitive calling. When he was taken to the playroom, instead of holding any of the toys, he was kicking them. When put inside the ball pit, he came out within seconds. He was trying to hit others inside the room randomly. After two days of observation, it was found that child liked to sit on a bean bag and this was used as the first medium to carry out the floor time therapy.

PRE, MID AND POST INTERVENTION ASSESSMENTS RESULT:

	Pre	**Mid**	**Post**
ISAA	130	125	120
CARS	39	37	33

DISCUSSION

A total of 24 sessions, spread over a time period of 6 weeks, with 4 sessions each week were planned. The first session included psychoeducation of the parents about childhood autism and explaining the rationale of the treatment programme. All their concerns about the child and therapy programme were handled.

From the second session onwards, the child and his parents were taken to a playroom where other children (with pervasive development disorder) and their parents were also present. During the floor time therapy time, in the playroom, Hindustani ragas on the tunes of 'Santoor' were played on an audio player as background music. The time chosen for playing the ragas was 1 PM - 2 PM. Each session was divided into two parts. For the initial three weeks, **Raga Pilu** was played for the first 25 minutes and **Raga Baha** was next 25 minutes' sessions followed by 10 minutes of break period. Then in the second three weeks' period, **Raga Pilu** was played for the first 25 minutes and **Raga Khamaj** was played next 25 minutes, followed by a 10 minutes break period.

As a part of Floortime therapy session, the child was engaged in games which he enjoyed. The therapist and the parents entered in the child's game space. They followed the child's lead. Parents were also taught by the therapist about how to direct their children into increasingly complex interactions through "opening and closing circles of communication." Emphasis was given on back-and-forth play interactions. The aim was to establish the foundation for shared attention, engagement, and problem-solving. Parents and therapist helped the child maintain focus, to improve his interaction patterns and abstract, logical thinking. For example, if the child was tapping on a toy truck, the parent tapped on the toy car in the same way. To encourage interaction, the parent then put the car in front of the child's truck and added language to the game.

Week 1	The child didn't respond to the therapist nor made eye contact and resisted any attempt to be held. He hit the therapist when attempts were made to caress or tickle him. He was constantly trying to pull his mother to leave the room and

	when she did not comply, he started screaming and biting his knuckles. It took three sessions for the child to get adjusted to the setting and for the therapist to identify the areas in the playroom which the child liked (e.g., sitting on the bean bag for five minutes, and disassembling toys). These were hence chosen as activities to work on the target areas. The therapist sat in front of the child on a stool. Few blocks were assembled and given to the child to separate them. Mother was asked to observe the activities carefully. In between that, it was noticed child was kicking a therapist at times, but while separating the blocks, he was curious and smiling.
Week 2-3	On the third session of the second week, the therapist and the mother started playing with the blocks with him and he seemed to like it. Mother was asked to make funny sounds to attract his attention. On hearing those sounds, he started laughing. By the end of the week, he stayed back in the room without demanding to go back. The mother had reported that at home the child preferred to play with bat and ball and hence the same was made available. Initially, he was only interested in throwing the ball while sitting on the bean bag. Gradually, he started showing interest in running behind the ball rather than just sitting on the bean bag. By the end of the 3rd week, the child started showing interest in coming to playroom by self. He started calling his mom "mama, Mujhe chahiye" instead of grabbing her hand for any demand. The mother was asked to carry out activities and methods used during the play session when she spent time with the child in the ward or outside.
Week 4-5	The parents were taught to join him in his act by creating and expanding ideas. Gradually he started showing interested in the toys, mainly bat-ball, blocks, and education board. Mother was instructed to verbally praise the child after he finished any task. The child seemed happy and smiled after getting appreciation from the mother. So mother was suggested to do it in the children ward when he would show desirable behavior like playing bat-ball with other kids, sharing his food with mother, wearing shirts by his own etc. He started enjoying the playroom and would often hold the therapist's hands on his own while walking to the room. When deliberately she would try to take the wrong path, he would hold her hand and guide to the right way. By the end of the fifth week, it was observed that the child had started showing his mother the need to be helped like getting ready for the playroom or perform other activities at the correct time. He also started watching children around him and would often ask his mother to help him do the activities that the other children were engaged in.
Week 6	During the last week, the play was continued and the last two days were kept for the post-intervention assessment. Parents had some doubts that were clarified regarding the use of these techniques at home without play items. They were also educated about follow-up and medical adherence. Parents were given three video clips of floortime demonstration.

CONCLUSION

Many researchers have used music as a basic part in floortime therapy and it has been found that it generates great interest in children (Wolfberg, 2009). As per Carpente, the therapist's task is to improvise music built around the child's responses, reactions, and/or movements to engage him or her in a musical experience that will facilitate (musical) relatedness, communication, socialization, and awareness (Carpente, 2009). The therapeutic potential of

Indian ragas has been well documented in the treatment of various physical and psychological problems. Ragas are believed to affect specific chakras or energy centers and create an atmosphere of harmony in the body (Solanki, Zafar, and Rastogi, 2013). In the above-mentioned case, the potential ragas were played in a pre-planned sequence during the Floortime therapy sessions. Integration of these two therapeutic techniques showed positive results. Further investigations can be done to understand the efficacy of Indian ragas as an adjunct to floortime therapy over the two modes of therapy done individually. The changes in biological parameters of the children undergoing this therapy schedule can also be researched to get more substantial information.

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Conflict of Interest
The authors carefully declare this paper to bear not a conflict of interests

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