

AIM

Effect of an Indian Percussion Music Instrument on the Oral Health Status, Motor Skills & Social Skills of Autistic Children.

Effect of an Indian Percussion Music Instrument on the Oral Health Status of Autistic Children

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RESULTS & CONCLUSION

OBJECTIVE

This study focused on strengthening the motor skills of the upper limbs through music therapy involving a rhythm-based instrument (the Tabla) whose diverse effects on the neurological system can simultaneously improve the social skills of the autistic children. An improvement in these motor skills can help them in better grasping of the toothbrush, thus reducing the chances of oral diseases.



MATERIALS & METHOD

Parental consent was obtained for five autistic children between 6-12 years of age. Pre & post assessment scores were recorded using the Gingival & Plaque Index (Loe 1963 & 1964), the Autism Social Skills Profile (Bellini, 2007) & the Quality of Upper Extremity Skills Test (DeMatteo, 1993). Statistical data was analysed by using a t-test. Thirty training sessions were held, each lasting 1 hour. Music therapy for each child was based on the model proposed by Michael Thaut in 1984. The idea was to improve the grasping, command, and power over the upper limbs by teaching beats that work on shoulders, elbows, wrist, palms, and fingers. Additional equipment like an electronic metronome was used for rhythmic cueing. Clapping patterns were often mixed with beats in order to increase the attention span of the children.

DISCUSSION

Children with autism often face barriers to dental care (Du YR et al, 2018 & Da Silva SN et al, 2016). Lack of cognitive function & physical challenges further deteriorate their oral health. Primary preventive measures like toothbrushing, if done right, can improve their oral health status. In order to achieve this, their command of daily living skills needs to be improved (Jasmin et al, 2008). Music therapy by self-playing a percussion instrument can improve their motor & social skills (Kaplan R, 2005 & Srinivasan et al, 2013). Motor skill deficits in autism are hand-eye co-ordination (Rose et al, 2015) grasping (Mari et al, 2003), & reaction time (Zheng et al, 2018). All three components play a major role in efficient toothbrushing. Tabla is a rhythm-based percussion instrument. Various music therapy studies involving rhythm have shown a direct link with the neurological system (Bharathi et al 2019, Sarkamo et al, 2013). The use of auditory rhythmic cueing like the metronome further adds to the enhancement of gross motor skills (Shemy et al, 2018). Music-based treatments strengthen the neural connections responsible for social skills of autistic children (Wan et al, 2010).

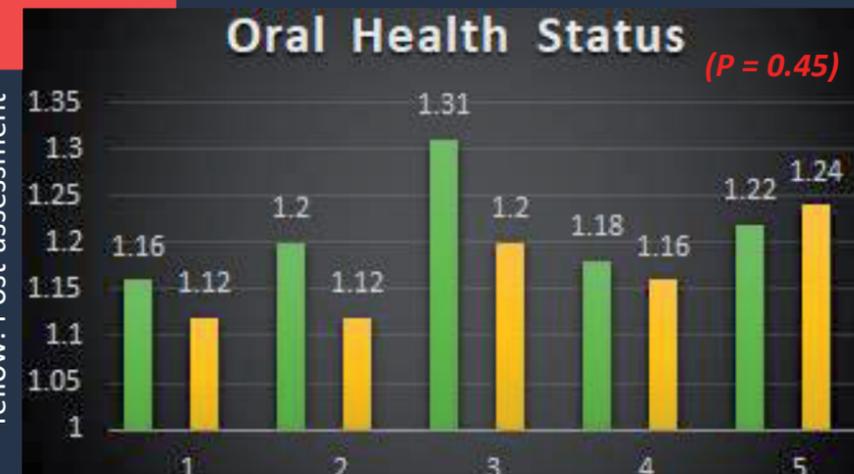
A similar study (Maqbool et al, 2015) using Tabla as an instrument for therapy showed an improvement in hand functioning of children with Down's Syndrome. The results are consistent with the current study, which showed a significant improvement in motor skills. Children reported better scores for social skills and oral health status but were not significant. There have been no previous studies linking the use of Tabla in autistic children to improved oral health. This study lays down a foundation for future research which can involve prolonged sessions of instrument playing (Tabla) with a larger sample size.



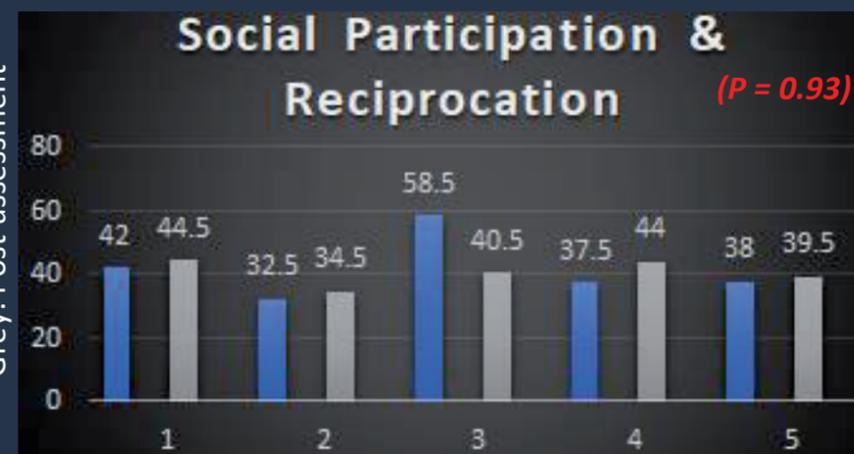
Electronic Metronome

SCALE	BEFORE	AFTER
Oral Health Status	1.21±0.06	1.14±0.05
Social Participation & Reciprocation	37.1±3.3	38.8±3.8
Detrimental Social Behavior	35.2±5.15	33.8±5.03
Motor Skills	70.2±12.9	84.9±5.8

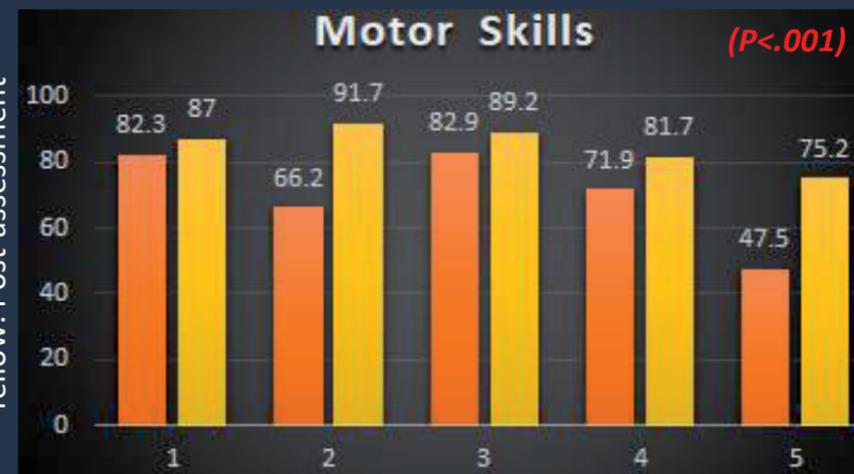
Key
X-Axis: Participants
Y-Axis: Mean of Gingival & Plaque Index
Green: Pre-assessment
Yellow: Post-assessment



Key
X-Axis: Participants
Y-Axis: Mean of Social Participation & Reciprocation
Blue: Pre-assessment
Grey: Post-assessment



Key
X-Axis: Participants
Y-Axis: Motor Skills score
Orange: Pre-assessment
Yellow: Post-assessment



Key
X-Axis: Participants
Y-Axis: Detrimental Social Behaviour
Blue: Pre-assessment
Orange: Post-assessment

