IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Assessing The Impact Of Music Therapy On Persons With Disabilities Across Different Domains

[1] Swetha Sadanandan Thoppil, [2] Sonam Sanger, [3] Yesha Sheth, [4] Rumani Trivedi, [5] Dr. Ruwab Khemchandani

[1] PhD Scholar, School of Doctoral Studies, National Forensic Sciences University, Gandhinagar, Gujarat
[2] Assistant Professor, National Forensic Sciences University, Delhi Campus
[3] Chief Scientific Officer, Essential Supportive Interventions, Qi to Happiness Foundation, Ahmedabad, Gujarat
[4] Senior Psychologist, Essential Supportive Interventions, Qi to Happiness Foundation, Ahmedabad, Gujarat
[5] Program Director, Essential Supportive Interventions, Qi to Happiness Foundation, Ahmedabad, Gujarat

Abstract:

Persons with disabilities are increasingly being offered a variety of therapies as alternatives, and one of the popular therapies in exploring the effect on their learning and social skill is the use of Music Therapy. Music therapy uses music as a medium for individuals to express their feeling and address their emotions in therapeutic process. In the current study, the authors explore the use of music therapy among the individuals suffering from mental health and disability. Music has a proven to have improvement in overall quality life in people with disabilities. 17 participants were observed on different domains including psycho-motor domain, social skills domain, communication skill domain, emotional domain and cognitive domain over different periods of time. The investigators scored participants in the above domains. The research findings indicate the need for further investigation as although there is a positive effect of music therapy on the beneficiaries, there were no significant differences found in the use of music therapy across domains.

Keywords: Psycho-motor Skills, Social Skills, Communication Skills, Emotional Domain, Cognitive Domain

Introduction:

According to World Health Organization, around 16% of the world's population experience disability (WHO, 2023). In India, the Rights of Persons with Disabilities Act, 2016 defines a person with disability as someone who has experienced, for a long time, any kind of physical, mental or intellectual or even sensory impairment that has an effect on one's full and effective interaction within the society equally with others. Furthermore, the provisions also define an individual with benchmark disability as someone with not less than 40% specified disability according to the certification of the authority, whether defined in measurable terms or not, which would be determined by the said certifying authority (Department of Empowerment of Persons with Disabilities, 2016).

According to the American Music Therapy Association (AMTA), music therapy addresses the physical, cognitive and social needs of individuals when provided by professionals using the therapeutic method of music by singing, creating or simply listening to it (American Music Therapy Association, 2015; Mendelson, et al., 2016). Some studies have used music therapy for psychological conditions to reduce anxiety, depression and addictive behaviours (Liu, Wang, Wei, & Liu, 2023). Music therapy has also been used in regulation of emotions in children with developmental disorders to improve their quality of life (Eisenberg, et al., 1996). The basic concept of music therapy comes from the idea that every individual has the capability to interact and engage with music (Loue, 2016).

This study, therefore, explores the psychomotor domain, social skills, communication skills, emotional domain and cognitive domain of persons with disabilities to evaluate changes in these areas over a period of time.

Review of Literature:

Music therapy has been observed to improve and re-activate several aspects of an individual's well-being by regulating their emotional, physical and overall health (Aldridge, 2000). According to a meta-analysis conducted on children with motor learning disability, it was observed that music therapy had an impact on reading and phonological awareness in children, indicating that communication skills can be improved using music therapy. This study also emphasized the importance of music therapy as an aid in cognitive abilities and auditory attention (Skeja, 2015; Hyde; et al, 2009).

Neurodevelopmental disabilities are sometimes characterized by the fact that individuals are unable to react socially to their environment appropriately. Research conducted on children which included only boys indicated that music therapy was impactful in improving their social skill due to the mood improvement that is accompanied by music. So, the study emphasizes that social interaction was better due to the effect of music therapy on the mood of the individual (Duffy & Fuller, 2001).

Music has been found to be important for the movement of our body. Music-supported therapy includes exercises involving a person to play instruments, ranging from easy exercises initially during the therapy to

increasing the difficulty over a period of time. This has shown improvement in individuals who were undergoing stroke rehabilitation (Schneider, Schonle, Altenmuller, & Munte, 2007). Similarly, rehabilitation of stroke patients who did not have any previous knowledge or training in music showed improvement in the patients' fine motor controls when the task of playing songs on the piano as an exercise was initiated. It was observed that music therapy not only elevated their fine motor control, it was also responsible for improved mood in individuals (Vugt, Ritter, Rollnik & Altenmuller, 2014).

Music therapy has been found to be effective in individuals suffering from multiple disabilities. Music has been found to be a successful therapeutic intervention especially for mental and physical disabilities. Over a 4-week period of time, each participant was given a one-hour music therapy session. Caregivers realized that during these sessions, there would be indication of some level of hand, leg, head and body movements in beneficiaries. This, in turn, points towards a positive outcome of music therapy in individuals with severe and multiple disabilities (Hatanpour, Zadehmohammadi, Masoumizadeh, & Sedigi, 2019).

Music therapy has been also found effective in the role of regulating emotions in persons with mild mental disorders who have shown significant change in their behaviour due to music therapy. The selection of the type of music used influences the effectiveness of music therapy. There are several aspects of music therapy that come together to determine its effectiveness. A study suggested that musical accompaniment had an effect on the level of empathy, and it enhanced the aspect of emotional recognition when pictures and pictogram were used (Huang & Gu, 2024). The association between music therapy and improvement in mental health and disabilities is widely supported by literature. Harmonic vibrations from music that is produced as sound is seen to have healing effects. Over the course of the development of psychology, music therapy has been encouraged to be used for several mental disorders as an alternative form of therapy. Music was especially seen to play a significant role in individuals with autism and other social behavioral issues. Music has an impact on social interactions amongst children with autism in the context of overall improvement in areas of social interactions such as increased eye contact, their initiation to start conversation, etc. These results were observed to be maintained for 20 months during the follow-up time period as well (Solanki, Zafar & Rastogi, 2013; Finnigan & Starr, 2010)

Methodology-

Scope of the study- The study was conducted on persons with disabilities who were receiving Music Therapy.

A) Research design- The study employs action research design, which is solution-driven and helps to carry out various observations by making solution-based interventions. The study will include descriptive accounts, and comparison between observations made about the participants over time.

B) Participants- Initially, 20 participants were part of the study but 3 participants were not able to continue. Hence, 17 participants were part of the study.

C) Sampling technique- Purposive sampling technique was employed as a method of selecting sample for the study.

D) Material/measures used for data collection- A structured questionnaire was used based on the

dimensions chosen as the area of the study i.e. psycho-motor domain, social skills domain, communication skills domain, emotional skills domain and cognitive domain.

E) Procedure for data collection- Data was collected by means of observations made by the therapist providing Arts Based Therapy over a time period of 6 months i.e. 2 quarters of the year. Initial observation was made before providing the therapy, the second observation was made after providing therapy for 3 months i.e. one quarter, and the third observation was made when the therapy had been provided for another 3 months i.e. second quarter.

Data analysis- Data analysis was done using SPSS.

Results:

Table 1: Mean value obtained by participants over various interval for different domains.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Psycho-motor Domain Before	17	30.00	77.00	53.5294	13.52367
Psycho-motor Domain-One Quarter	17	30.00	77.00	53.5294	13.52367
Psycho-motor Domain Second Quarter	17	28.00	75.00	55.8235	15.52915
Social Skill Domain Before	17	22.00	63.00	42.7647	12.06508
Social Skill Domain One Quarter	17	22.00	61.00	42.6471	11.86350
Social Skill Domain Second Quarter	17	19.00	64.00	44.6471	13.99081
Communication Skill Domain Before	17	38.00	89.00	67.1176	15.06603
Communication Skill Domain One Quarter	17	38.00	89.00	67.1765	15.11305
Communication Skill Domain Second Quarter	17	33.00	95.00	69.6471	19.16684
Emotional Skill Domain Before	17	41.00	78.00	59.9412	11.00267
Emotional Skill Domain one Quarter	17	41.00	78.00	60.0000	11.04536
Emotional Skill Domain Second Quarter	17	43.00	78.00	61.7059	11.68741
Cognitive Skill Domain Before	17	13.00	43.00	32.3529	9.86117
Cognitive Skill Domain One Quarter	17	13.00	43.00	32.3529	9.86117
Cognitive Skill Domain Second Quarter	17	13.00	49.00	33.5882	11.28638

Table1 Represents the mean value obtained by the participants on different domains at different periods of time when they underwent Music Therapy. The mean score obtained by participants on Psycho motor domain before providing the music therapy is 53.53, after the therapy was provided for one quarter the mean score is 53.53 which did not show much variation and however the mean score for the final quarter

i.e music therapy after two quarter was 55.82 which shows an increase in the mean before and the first quarter.

The mean score obtained by participants on Social skill domain before providing music therapy was 42.76, after the therapy was provided for one quarter the mean score was 42.64. After the second quarter of music therapy the mean score 44.67. There is again an increase in the mean score in second quarter.

The mean score obtained by participants on communication skill domain before the start of music therapy was 67.11 whereas for the first quarter after the music therapy was provided the mean score was 67.17. The mean score for the second quarter after providing the music therapy was 19.16 for communication skill domain. The mean score increased in the second quarter.

The mean score obtained by participants on Emotional skill domain before providing the therapy was 59.94 score. The mean score after providing music therapy was 60 for the first quarter. The mean score after providing the music therapy for the second quarter was 61.70 for emotional skill domain. The mean score obtained by participants on cognitive skill domain before providing the music therapy was 32.35, wherein the score remained the same even after providing the music therapy in the first quarter for cognitive skill domain. After providing the music therapy for the second quarter the mean score was 33.58 which indicates a slight increase from the previous quarter.

Table 2: Comparison of Psychomotor Domain Before and After the music therapy

Paired Samples Test								
	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 2	-2.29412	6.08034	1.47470	-5.42034	.83211	-1.556	16	.139
Pair 3	-2.29412	6.08034	1.47470	-5.42034	.83211	-1.556	16	.139

Pair 1- Psycho-motor Domain Before and Psycho-motor Domain- One Quarter Pair 2- Psycho-motor Domain Before and Psycho-motor Domain- Second Quarter

Pair 3- Psycho-motor Domain One Quarter and Psycho-motor Domain Second Quarter

Table 2 indicates the difference in the Psycho motor skills of the participants before and after receiving the music therapy across 2 quarter that is a period of 3 months after the therapy was provided. The difference indicates that there is no significant change in psychomotor domain of the participant due to introduction of music therapy. For psycho motor domain the significance is around (0.139) which is the same for both 1st quarter and 2nd quarter indicating no significant changes in the two sessions.

Table 3: Comparison of Social skill Domain Before and After the music therapy

Paired Samples Test								
	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1	.11765	.48507	.11765	-.13175	.36705	1.000	16	.332
Pair 2	-2.00000	4.66369	1.13111	-4.39785	.39785	-1.768	16	.096
Pair 3	-1.88235	4.94826	1.20013	-4.42651	.66181	-1.568	16	.136

Pair 1- Social Skills Domain Before and Social Skill Domain- One Quarter Pair 2- Social Skills Domain Before and Social Skill Domain- Second Quarter

Pair 3- Social Skills Domain One Quarter and Social Skill Domain Second Quarter

Table 3 indicates the difference in the social skills of the participants before and after receiving the music therapy across 2 quarter that is a period of 3 months after the therapy was provided. The difference indicates that there is no significant change in psychomotor domain of the participant due to introduction of music therapy. For psycho motor domain the significance before the therapy was provided is .332 at

0.05 level of significance. While the significance for first quarter is 0.096 and that of 2nd quarter 0.136 indicating no significant difference before and after the use of music therapy in the social skill domain.

Table 4: Comparison of communication skill domain Before and After the music therapy

Paired Samples Test								
	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1	-.05882	.24254	.05882	-.18352	.06588	-1.000	16	.332
Pair 2	-2.47059	6.75572	1.63850	-5.94406	1.00288	-1.508	16	.151
Pair 3	-2.52941	6.77419	1.64298	-6.01238	.95356	-1.540	16	.143

Pair 1- Communication Skills Domain Before and Communication Skill Domain- One Quarter Pair 2- Communication Skills Domain Before and Communication Skill Domain- Second Quarter

Pair 3- Communication Skills Domain One Quarter and Communication Skill Dmain Second Quarter

Table 4 indicates the difference in the communication skills of the participants before and after receiving the music therapy across 2 quarter that is a period of 3 months after the therapy was provided. The difference indicates that there is no significant change in communication domain of the participant due to introduction of music therapy. For communication skills domain the significance before the therapy

was provided is .0332. While the significance for first quarter is 0.151 and that of 2nd quarter 0.143 indicating no significant difference before and after the use of music therapy in the social skill domain.

Table 5: Comparison of Emotional Skill Domain Before and After the music therapy

Paired Samples Test								
	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1	-.05882	.24254	.05882	-.18352	.06588	-1.000	16	.332
Pair 2	-1.70588	4.81877	1.16872	-4.18347	.77170	-1.460	16	.164
Pair 3	-1.76471	4.77663	1.15850	-4.22062	.69121	-1.523	16	.147

Pair 1- Emotional Skills Domain Before and Emotional Skills Domain- One Quarter Pair 2- Emotional Skills Domain Before and Emotional Skills Domain- Second Quarter
Pair 3- Emotional Skills Domain One Quarter and Emotional Skills Domain Second Quarter

Table 5 indicates the difference in the emotional skills domain of the participants before and after receiving the music therapy across 2 quarter that is a period of 3 months after the therapy was provided. The difference indicates that there is no significant change in emotional domain of the participant due to introduction of music therapy. For communication skills domain the significance before the therapy was provided is .0332. While the significance for first quarter is 0.164 and that of 2nd quarter 0.147 indicating no significant difference before and after the use of music therapy in the emotional skill domain.

Table 6: Comparison of Cognitive Skill Domain Before and After the music therapy

Paired Samples Test								
	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 2	-1.23529	2.58673	.62737	-2.56527	.09468	-1.969	16	.067
Pair 3	-1.23529	2.58673	.62737	-2.56527	.09468	-1.969	16	.067

Pair 1- Cognitive Skills Domain Before and Cognitive Skill Domain- One Quarter Pair 2-

Cognitive Skills Domain Before and Cognitive Skill Domain- Second Quarter

Pair 3- Cognitive Skills Domain one Quarter and Cognitive Skill Domain Second Quarter

Table 6 indicates the difference in the cognitive skills domain of the participants before and after receiving music therapy across 2 quarters, that is a period of 6 months. The difference indicates that there is no significant change in the cognitive skills domain of the participant due to the introduction of music therapy. The significance for first quarter is 0.067 and that of second quarter is 0.067, indicating no significant difference before and after the use of music therapy in the cognitive skills domain.

Discussions:

The analysis of the result reflects the effect of music therapy on persons with neurodevelopmental disabilities in the context of five domains, namely psycho-motor domain, social skills domain, communication skill domain, emotional domain and cognitive domain. The findings of the study indicate minor differences in mean, which may be insignificant over a period of time. The pattern in psycho-motor and cognitive domains indicate that there are no major differences in performance with the use of Music Therapy. A deeper investigation is required to evaluate the effectiveness of Music Therapy for persons with disabilities.

One study on music therapy and cognitive intervention program for children with learning disabilities found a significant interconnection between music therapy and cognitive intervention program in the experimental group, and a significant different in the final test score of CAS (Skeja, 2015). This study indicates the benefits of use of other interventions along with music therapy to enhance the effect of music therapy, indicating a need for further exploration of other alternatives along with music therapy. In the current study, the findings are limited to a small sample size and therefore, increasing the sample size may yield significant results.

Conclusion:

This study serves as a foundation in understanding the effectiveness and impact of music therapy in five domains, namely psycho-motor domain, social skills domain, communication skill domain, emotional domain and cognitive domain. There is a need for further exploration of the use of music therapy with a more effective treatment plan to explore its effectiveness for persons with neurodevelopmental disabilities.

Acknowledgement-

Qi To Happiness Foundation’s Essential Supportive Interventions (ESI) program thanks all its donors,

patrons and partner organizations for their support, making ESI's therapeutic interventions accessible to persons with disabilities at the grassroots level. This program's work in disability and mental health is currently aided by Social Venture Partners, Ahmedabad Chapter and CSR partner Caterpillar Signs Pvt. Ltd., and is working in collaboration with partner organizations Samerth Charitable Trust and Blind People's Association.

References:

American Music Therapy Association. (2015). Retrieved from https://www.musictherapy.org/about/musictherapy/

Mendelson, J., White, Y., Hans, L., Adebari, R., Schmid, L., Riggsbee, J., . . . Dawson, G. (2016). A Preliminary Investigation of a Specialized Music Therapy Model for Children with Disabilities Delivered in a Classroom Setting. *Autism Research and Treatment, 2016*, 1-8. doi:http://dx.doi.org/10.1155/2016/1284790

Aldrige, D. (2000). Music Therapy in dementia care. *Jessica Kingsley*.

Department of Empowerment of Persons with Disabilities, I. (2016). *RPwD Act, 2016, rules & assessment guidelines*. Retrieved from Department of Empowerment of Persons with with Disabilities: https://depwd.gov.in/

Duffy, B., & Fuller, R. (2001). Role of Music Therapy in Social Skills Development in Children with Moderate Intellectual Disability. *Journal of Applied Research in Intellectual Disabilities*, 77-89. doi:10.1046/j.1468-3148.2000.00011.x

Eisenberg, N., Richard, F., Bridget, M., Mariss, K., Smith, M., & Maszk, P. (1996). The relations of children's dispositional empathy-related responding to their emotionality, regulation, and social functioning. *Developmental Psychology*, 195-209. doi:https://doi.org/10.1037/0012-1649.32.2.195

Hatanpour, R., Zadehmohammadi, A., Masoumizadeh, F., & Sedigi, M. (2019). The effects of music therapy on sensory motor functions of multiple handicapped People: Case study. *Procedia - Social and Behavioral Sciences 3*, 1124-1126. doi:doi:10.1016/j.sbspro.2011.10.219

Huang, C., & Gu, S. (2024). Effectiveness of music therapy in enhancing empathy and emotional recognition in adolescents with intellectual disabilities. *Acta Psychologica*, 1-6.

Hyde, K., Lerch, J., Norton, A., Forgeard, M., Winner, E., Evans, A., & Schlaug, G. (2009). The Effects of Musical Training on Structural Brain Development. *The Neurosciences and Music III: Disorders and Plasticity*, 182-186. doi:0.1111/j.1749- 6632.2009.04852.x

Janzen, T., Koshimori, Y., Richard, N., & Thaut, M. (2022). Rhythm and Music-Based Interventions in Motor Rehabilitation: Current Evidence and Future Perspectives. *Frontiers in Human Neurosciences*. doi:10.3389/fnhum.2021.789467

Liu, J., Wang, C., Wei, L., & Liu, Y. (2023). A Clinical Study on the Music Therapy within Educational Institutions. *Proceedings of the 2023 7th International Seminar on Education, Management and Social*. doi:10.2991/978-2-38476-126-5_222

Loue, S. (2016). Expressive Therapies: Music, Art, and Sandplay. Case WesternReserveSchoolofMedicine,Cleveland,OH,USA.

Schneider, S., Schonle, P., Altenmuller, E., & Munte, T. (2007). Using musical instruments to improve motor skill recovery following a stroke. *Journal of Neurology*, 1339-46. doi:10.1007/s00415-006-0523-2

Shuman, J., Kennedy, H., & DeWitt, P. (2016). Group Music Therapy Impacts Mood States of Adolescents in a Psychiatric Hospital Setting. doi:http://dx.doi.org/doi:10.1016/j.aip.2016.05.014

Skeja, E. (2015). The Impact of Cognitive Intervention Program and Music Therapy in Learning Disabilities. *Procedia - Social and Behavioral Sciences*, 605-609. doi:doi: 10.1016/j.sbspro.2014.12.433

Solanki, S. M., Zafar, M., & Rastogi, R. (2013). Music as a therapy: Role in psychiatry. *Asian Journal of Psychiatry*. doi:http://dx.doi.org/10.1016/j.ajp.2012.12.001

Vugt, F. V., Ritter, J., Rollnik, J., & Altenmuller, E. (2014). Music-supported motor training after stroke reveals no superiority of synchronization in group therapy. *Frontiers in Human Neuroscience*. doi: 10.3389/fnhum.2014.00315

WHO. (2023, March07). *World Health Organization*. Retrieved from https://www.who.int/news-room/fact-sheets/detail/disability-and-health