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## Efficacy of movement-oriented music therapy on fine motor skills among mentally challenged children

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### Abstract

The purpose of the study was to find out the effect of movement-oriented music therapy on fine motor skills among mentally challenged children. To achieve this purpose, twenty mild (educable) mentally challenged children (age 13-18) were randomly selected from Mithra School, Kilpauk, Chennai. The subjects were trained for 12 weeks with movement-oriented music therapy like yoga, aerobics, calisthenics, and music therapy. The fine motor skills (coloring, sessoring and stringing beads) selected as a criterion variable were recorded prior to and immediately after the training program by test (coloring, sessoring and stringing beads) through the special educators. As the study was conducted on a special group of subjects being mentally challenged, only a single group design was used. The t-ratio was applied to find out the significant difference, if any, in the criterion variables between pre and post-tests. The result of the study revealed that there were significant differences on fine motor skills (coloring, sessoring and stringing beads) after a training period of 12 weeks.

**Keywords:** Music therapy, fine motor skills

### Introduction

The power of music was recognized by the ancient people as a means of promoting health and well-being. Plato, Pythagoras, and even the apostles in the Bible wrote on the restorative and healing qualities of music. The discipline of music therapy is a modality that harnesses the power of music to effect positive changes in individual.<sup>[1]</sup> The health benefits of music to patients in Veterans Administration hospitals following World War II became apparent, leading to its use as a complementary healing practice. Musicians were hired to work in hospitals. Degrees in music therapy became available in the late 1940s, and in 1950, the first professional association of music therapists was formed in the United States. The National Association of Music Therapy merged with the American Association of Music Therapy in 1998 to become the American Music Therapy Association<sup>[2]</sup>.

Music can be beneficial for anyone. It can be used therapeutically for people who have physical, emotional, social, or cognitive deficits<sup>[3]</sup>. Those who are healthy can use music to relax, reduce stress, improve mood, or to accompany exercise. There are no potentially harmful or toxic effects. Music therapists help their patients achieve a number of goals through music, including improvement of communication, academic strengths, attention span, and motor skills. They may also assist with behavioral therapy and pain management<sup>[4]</sup>.

Depending on the type and style of sound, music can either sharpen mental acuity or assist in relaxation. Memory and learning can be enhanced, and thus used with good results in children with learning disabilities. This effect may also be partially due to increased concentration that many people have while listening to music. Better productivity is another outcome of an improved ability to concentrate<sup>[5]</sup>.

### How music therapy is used

Specific activities and exercises to help the patient progress shall be selected. Objectives may include development of communication, cognitive, motor, emotional, and social skills. Some of the techniques used to achieve this are singing, listening, instrumental music, composition, creative movement and guided imagery<sup>[6]</sup>.

Music therapy facilitates the creative process of moving toward wholeness in the physical,

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emotional, mental, and spiritual self in areas such as: independence, freedom to change, adaptability, balance, and integration. The implementation of music therapy involves interactions of the therapist, client, and music. These interactions initiate and sustain musical and non-musical change processes which may or may not be observable. As the musical elements of rhythm, melody, and harmony are elaborated across time, the therapist and client can develop relationships which optimize the quality of life. We believe that music therapy makes a unique contribution to wellness, because man's responsiveness to music is unique.

**Hypothesis**

1. It was hypothesized that there would be significant improvement on colouring due to influence of movement-oriented music therapy.
2. It was hypothesized that there would be significant improvement on scissoring due to influence of movement-oriented music therapy.
3. It was hypothesized that there would be significant improvement on stringing beads due to influence of movement-oriented music therapy.

**Methodology**

To achieve this purpose twenty mild mentally challenged children (age 13-18) were randomly selected from Mithra School, Kilpauk, Chennai. The subjects were trained for 12 weeks with movement-oriented music therapy like yoga, aerobics, calisthenics, and music therapy. The fine motor skills (coloring, scissoring and stringing beads) selected as criterion variables and they were recorded prior to and immediately after the training program by tests through the special educators. The t-ratio was applied to find out the significant differences, if any, in criterion variables. The results of the study revealed that there were significant differences on fine motor skills (coloring, scissoring and stringing beads) after training.

**Results and Discussion**

The statistical analysis comparing the initial and final means of fine motor skills of coloring, scissoring and stringing beads due to the music-oriented movement therapy of mentally challenged children presented in table and graphs.

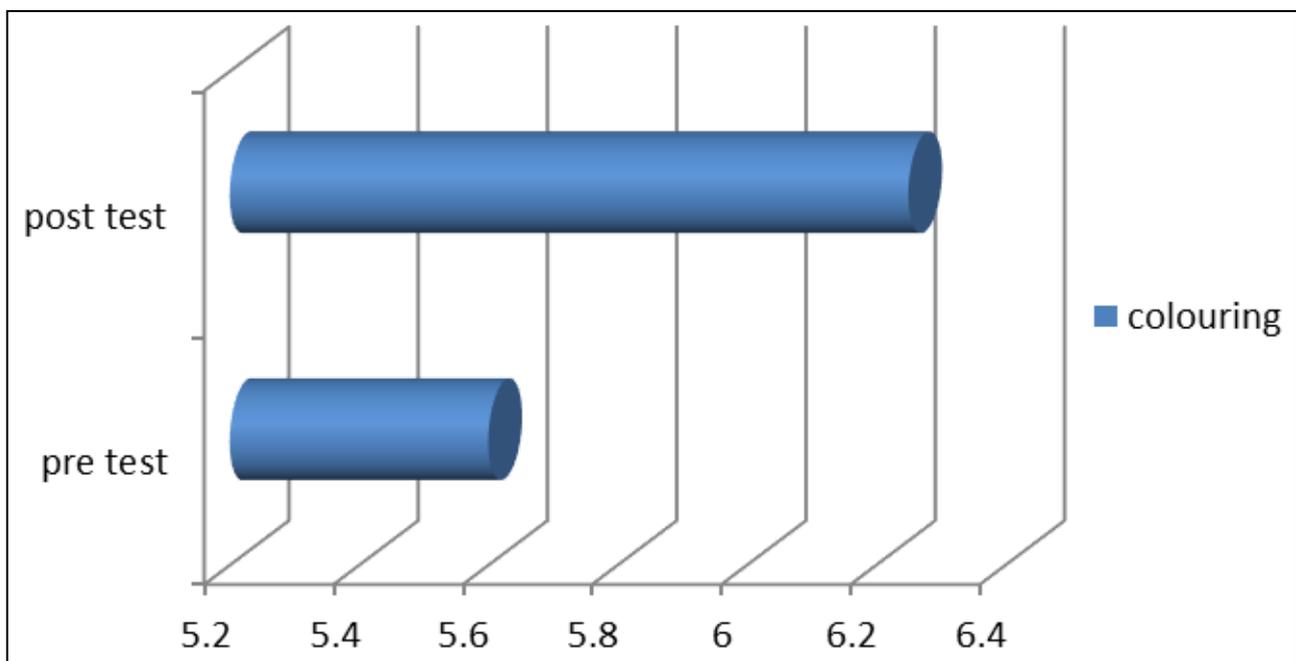
**Table 1:** Mean, Standard Deviation and T-Ratio for the Scores in Colouring

Test	Mean	SD	t - Ratio
Pre test	5.6	2.0	1.08
Post test	6.25	1.28	

Significant at 0.05 level

The result showed that the obtained t-value of the selected variable colouring 1.08 was lesser than required t-value 2.02

at 0.05 levels. Hence, there was no significant difference between the pre and post test.



**Graph 1:** Showing the mean difference in colouring

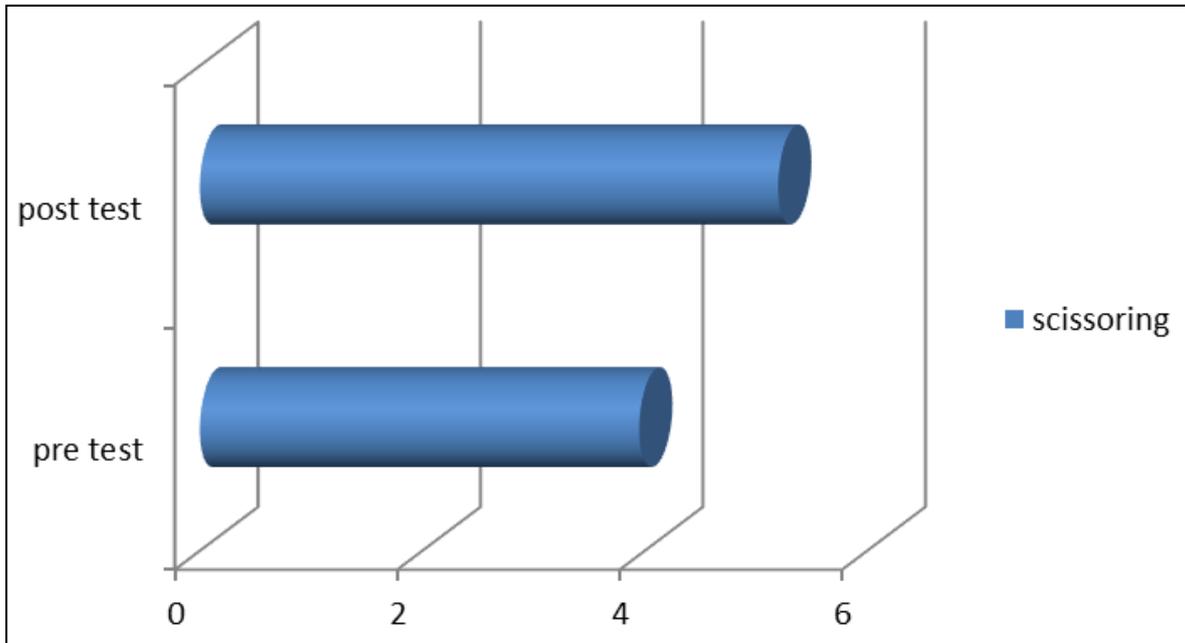
**Table 2:** Mean, Standard Deviation and T-Ratio for the Scores in Scissoring

Test	Mean	SD	t-Ratio
Pre test	3.95	2.08	2.08
Post test	5.2	1.69	

\*significant a 0.05 level

The result showed that the obtained t-value of the selected variable scissoring 2.08 was higher than required t-value 2.02

at 0.05 levels. Hence, there was a significant difference between the pre and post test.



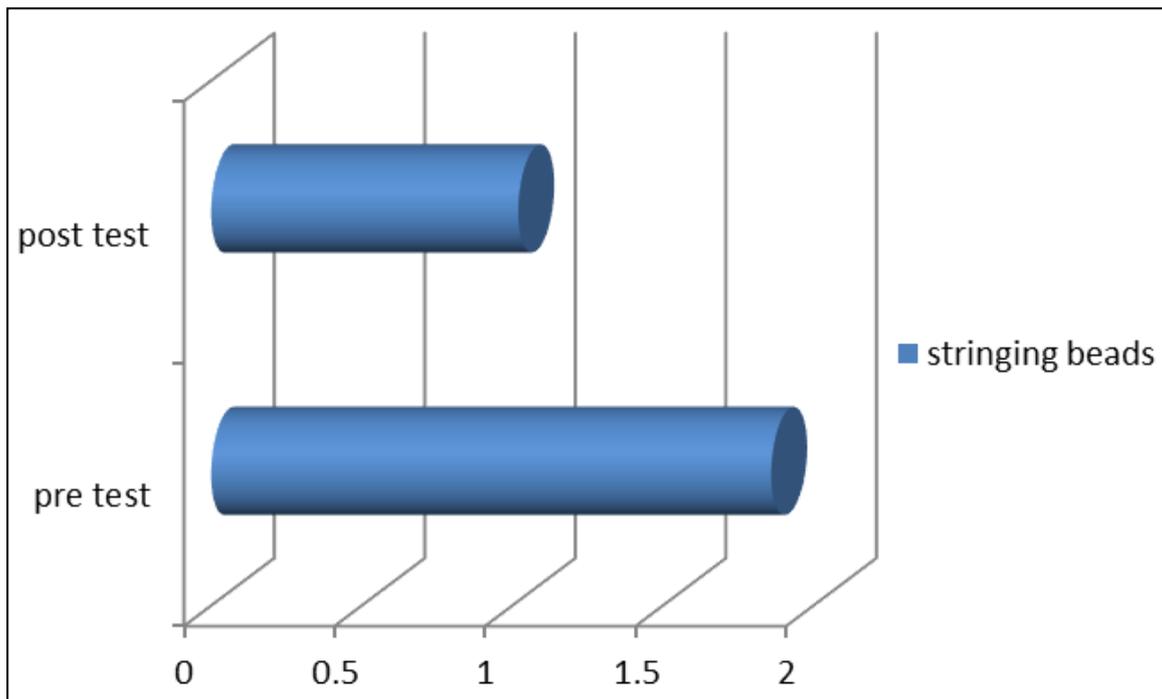
**Graph 2:** Showing the mean difference in scissoring

**Table 3:** Mean, standard deviation and t-ratio for the scores in stringing beads

Test	Mean	SD	t-Ratio
Pre test	1.86	0.92	1.87
Post test	1.15	1.18	

The result showed that the obtained t-value of the selected variable stringing beads was lesser than required t-value 2.02

at 0.05 levels. Hence, there was no significant difference between the pre and post test.



**Graph 3:** Showing the mean difference in stringing beads

**Discussion on Findings and Hypotheses**

The results of the study revealed that movement-oriented music therapy had influenced an increase in scissoring as a fine motor skill among mild mentally challenged children. The formulated hypotheses that there would be significant improvement on scissoring was accepted at 0.05 level of confidence and rejected for the fine motor skills colouring and stringing beads.

**Conclusions**

1. It was concluded that the movement-oriented music therapy did not significantly improve colouring as a fine motor skill.
2. It was concluded that the movement-oriented music therapy had significantly improved scissoring as a fine motor skill.
3. It was concluded that the movement-oriented music

therapy did not significantly improve stringing beads as a fine motor skill.

4. Though there were improvements on colouring and stringing beads due to the influence of music therapy, they were not significant.

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