

# Effectiveness of Play Activity on Fine Motor Skills among Mentally Retarded Children

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## Abstract

**Introduction:** Motor development process is vital for the development of children and lasts their entire lifetime. Mentally retarded children have some incompetency with their motor developmental process as with other developmental processes. Motor development improves with physical development and growth.

**Aim:** The aim of the study was to evaluate the effectiveness of play activity on fine motor skills (FMS) among mentally retarded children.

**Materials and Methods:** True experimental pre-test–post-test control group design was used. The study was conducted in the Institute for Mentally Retarded children. 30 in each (experimental and control) group selected by simple random sampling. Madras Developmental Programming System – behavioral scale used to assess the FMS. Play activity was given to the experimental group, 30 min for 15 days. Post-test was conducted after 5 weeks.

**Results:** Significant improvement noted in fine motor skills in experimental group. Association between FMS and type of delivery was significant at  $P < 0.042$ .

**Conclusion:** Play activity was effective in improving the FMS among mentally retarded children.

**Key words:** Fine motor skills, Mentally retarded children, Special education

## INTRODUCTION

Mental health is a state of well-being in which the individual realizes his or her abilities, can cope with the normal stresses of life, can work productively, and is able to make a contribution to his or her community. The values we impart to our children today, consciously and unconsciously, will have a major impact on society tomorrow. The World Health Organization estimated that globally over 450 million people suffer from mental disorders.<sup>[1,2]</sup> At present, mental and behavioral disorders account for about 12% of the global burden of diseases. This is likely to increase to 15% by 2020.<sup>[3]</sup> Major proportions of mental disorders come from low- and middle-income countries.<sup>[2]</sup> In India, the highest number of disabled has been reported from

the state of Uttar Pradesh nearly 3.6 million. A significant number of disabled from the states such as Bihar is 1.9 million, West Bengal is 1.8 million, and Tamil Nadu and Maharashtra about 1.6 million each. Tamil Nadu is the only state, which has a higher number of disabled females than males. Among the states, Arunachal Pradesh has the highest proportion of disabled males (66.6%) and the lowest proportion of female disabled.<sup>[3]</sup> Motor control develops from the top to down and from central to peripheral muscles. Motor proficiency leads to the development of fundamental motor skills. Fundamental motor skills play a significant role in the development of a child's overall motor skill. Fine motor development primarily involves the development of fine manipulation skills and coordination with age. Play activity is an active approach that can be used individually or in groups. In a way that allows children to reveal their conscious and unconscious emotions through games.<sup>[4,5]</sup>

## Aim

The aim of the study was to evaluate the effectiveness of play activity on fine motor skills (FMS) among mentally retarded children.

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## MATERIALS AND METHODS

### Inclusion Criteria

Children in the age group of 6–14 years, with mild and moderate mental retardation, mentally retarded children, who are able to follow instructions about play activity, and both male and female mentally retarded children were included in the study.

### Exclusion Criteria

Severe and profound mentally retarded children, mentally retarded children, and those who are not able to understand and follow the instructions about play activity were excluded from the study.

- Section A: Semi-structured interview schedule about demographic variables.
- Section B: Standardized Madras Developmental Programming System – behavioral scale.

Demographic data of the subjects were collected for both groups. The pre-test was conducted using Madras Developmental Programming System – behavioral scale for both groups. The experimental group was divided into two groups, 15 numbers in each group and play activity was demonstrated and practiced by each group 30 min for 15 days. Play activity consists of a screw and unscrews – nut and bolt, segregation of color beads and pick up and drop water using ink filler. Play activity was not demonstrated to control group and they follow the routine class taught by their teachers. After completion of the intervention, post-test was administered to both the experimental and control group.

## RESULTS

In this, 30 mentally retarded children were included in the study. Majority of the subjects, 12 (40%) were in both 6–8 and 9–11 years and the remaining 6 (20%) were between 12 and 14 years in the experimental group. In the control group, most of subjects 15 (50%) were in 9–11 years, 8 (26.7 %) were in 12–14 years, and 7 (23.3%) belonged to 6–8 years. 22 (73.3%) were males and 8 (26.7%) were females in both experimental and control groups. In the experimental group, most of the subjects 17 (56.7%) were mild and 13 (43.3%) had moderate and none of them belongs to severe mental retardation. In the control group, 16 (53.3%) were mild, 14 (46.70%) belonged to moderate and none of them belongs to severe mental retardation. Most of the subjects 23 (76.7%) were in the moderate range, 5 (16.7%) were in low range, 1 (3.3%) scored very low range, and 1 (3.3%) scored high range on FMS among the experimental group. In control group, most of the subjects 22 (73.4%) scored moderate, 6 (20%) scored low,

1 (3.3%) scored low range, and 1 (3.3%) scored high range on FMS among the control group [Figure 1].

In the experimental group, the mean score was increased from 9.56 to 10.83 and it shows that 1.26 increased in level of FMS after the intervention [Figure 2].

About 18 (60%) were in the moderate range, 6 (20%) were in low, and 6 (20%) were in the high range on the level of FMS in the experimental group. In control group, most of the subjects 22 (73.4%) scored moderate range, 6 (20%) scored low, 1 (3.3%) scored very low, and 1 (3.3%) is the high range on the level of FMS [Figure 3].

## DISCUSSION

Child's population is the greatest potential of any nation. Children need a healthy environment for the achievement of normal growth and development, which enables the children to enjoy a state of health, i.e., complete physical, mental, social, and spiritual well-being. This equilibrium is disturbed, affecting the child's population from the independent function. Mentally retarded children with the developmental delay have a deficit in motor skills and adaptive behavior. Play activity enables the mild and moderate mentally retarded children to develop their self-help skills by their improvised motor coordination.

Vidoni specified in his article that FMS are needed in most everyday activities, such as dressing, eating, and playing and that these skills are achieved by the maturation of the central nervous system and specific motor experiences.<sup>[6]</sup>

Yu and Smith in their study mentioned that there are strong relationships between FMS, learning ability, and communication skills. These findings indicate that there is a strong relationship between the functions of the cerebellum and functions of the brain, which are closely related to learning and social behavior.<sup>[7]</sup> Cho *et al.* mentioned the adverse effects of motor problems, especially fine motor problems, in childhood that can cause problems in social and academic (school) competence. Indeed, children with motor problems avoid physical activities thereby causing obesity, social communication disorders, low self-esteem, and poor academic performance.<sup>[8]</sup>

Accordingly, previous work that has not considered FMS as distinct from graphomotor skills may be confounded.<sup>[9]</sup> Given the importance of not conflating graphomotor skills with FMS and the focus here on preschool play activities, we center our consideration of FMS on more typical activities (such as bead-threading), as opposed to graphomotor skills and writing. Historically, FMS

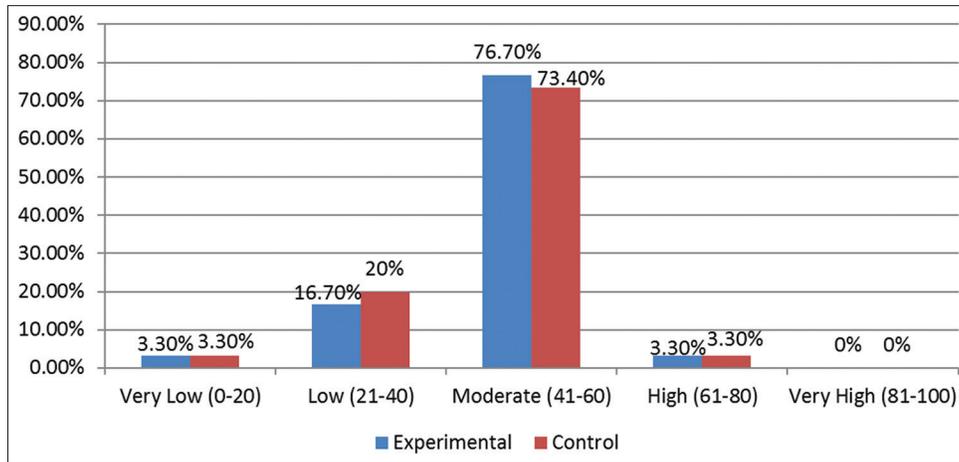


Figure 1: Distribution of the level of fine motor skills before the test

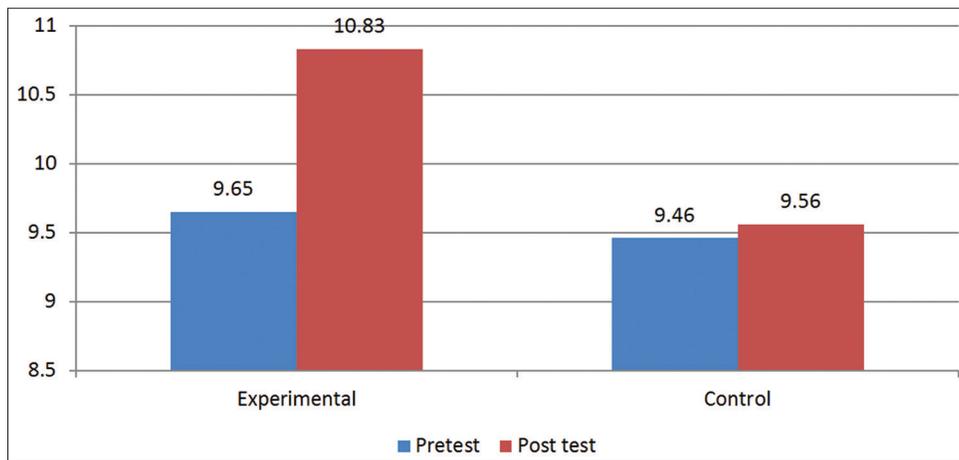


Figure 2: Effectiveness of play activity on the level of fine motor skills

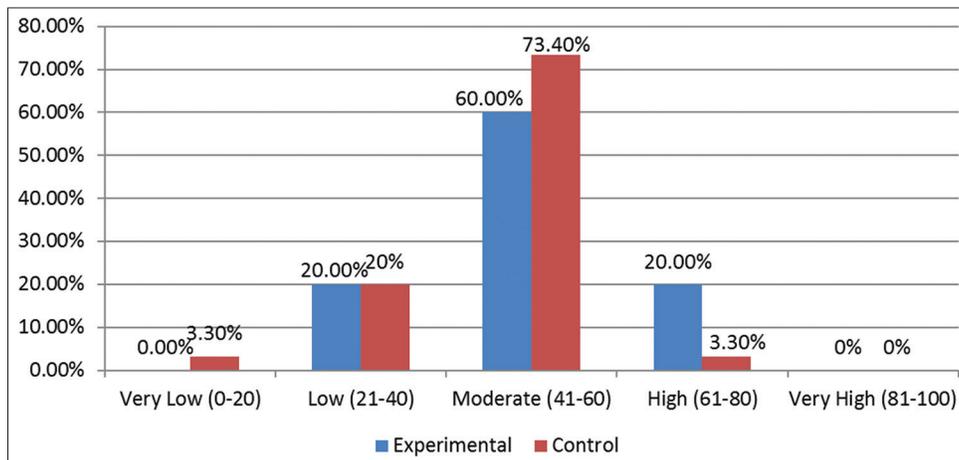


Figure 3: Distribution of the level of fine motor skills post-test

has been emphasized as an important factor in school readiness. In support of this idea, studies indicate links between FMS (broadly defined) and cognitive skills, such as reasoning, memory, and crystallized intelligence in preschool children.<sup>[10,11]</sup> Theoretical explanations for links

between FMS and cognitive skills are as diverse as they are inadequately researched. One theoretical account centers on maturation and parallel developmental processes. According to this idea, both cognitive skills and FMS undergo sharp development in early childhood, which

may give rise to spurious behavioral links that are in reality driven by maturation.<sup>[12]</sup>

## CONCLUSION

The study findings statistically proved that play activity improved the level of FMS among mentally retarded children. Hence, the researcher concluded that play activity is low cost, noninvasive, and highly feasible, it can be used to improve FMS among mentally retarded children.

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