Evaluation of Motor Skills for Special Children

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Dr. S. Sumathi
Assistant Professor
Sri Sarada College of Physical Education for Women
Salem, Tamil Nadu, India

Dr. M. Uma Kamalavathi
Assistant Professor
Sri Sarada College of Physical Education for Women
Salem, Tamil Nadu, India

Abstract

The study was aimed at assessing the basic motor skills of the children and young adult with a moderate level of mental retardation (MR). The current research also evaluated the variations between boys and girls as well as various age groups. The purpose of the research was to identify the seven loco motor skills that included walking, running, jumping, throwing, kicking, agility and balance of moderate MR children and the young adult with a different age group. The sample included n=90 students (45 boys and 45 girls) of moderate MR between the age of 9 and 15 years. The participants were in special schools of St. Annes Convent and St. Bishop Sargent School of the mentally retarded children, Tirunelveli. Respondents were split in three groups (9-11, 12-13 and 14-15 years old). The evaluation of the basic motor skills was done using Test of Gross Motor Development (TGMD, Ulrich, 1985). The TGMD studies on seven loco motor skills. The effect of the two categories of variables on the dependent variables was assessed using descriptive statistics and the two- way factorial (2x3) Analysis of variance (ANOVA). In the case that the obtained F ratio of interaction was significant; the simple effect test was applied to determine which of the mean performance score of gender and age groups were significant. The test used to compare interpretations was the scheffes test which was done in the individual comparisons. The findings showed that the age groups varied significantly in the performance of basic motor skills of the children and young adult boys and girls having moderate MR. It is therefore advisable that the adapted physical educators should focus on in a special designed adapted physical education program to the advancement of basic motor skills in the children with moderate mental retardation.

Keywords: Mental Retardation (MR), Moderate MR, Motor Skill and Loco Motor Skill.

Introduction

Basic movement skill is ordered concatenation of minimal movements that entails junction of patterns of movement of two or more body parts that can be divided into stability, locomotors or manipulative movement (Gallahue, 1996). In the case of individual with mental retardation, the most valuable gain of the fundamental motor skills development is within the field of functional skills. Those skills

competencies may be transferred to functional competencies that are required to make movements required in daily living (Eichstaedt and Lavay, 1992).

Mastery of the execution of basic motor skills (FMS) has been regarded as a key to the expediency of the more sophisticated motions applied in aquatics, dancing, games and sports. Nevertheless, motor skills mastery is not restricted to sports only. Eichstaedt and Lavay (1992) opine that competence in these skills translates to functional skills that are needed to execute movements needed in daily living activities. Moreover, the constant inability to execute culturally normative skills in the field of acceptable competence can culminate into severe secondary emotional and behavioral issues (Cratty, 1967).

The physically retarded children are not as active as the children without retardation and get the opportunity to practice their motor skills. According to the recent study conducted by Rarick and Dobbins (1972), the results indicated a large increase in body fat content and a decrease in physica1 fitness score of wide age-range of mentally retarded children they measured. The problem is also caused by the over protection by others especially parents and teachers of retarded children. The pre-school years constitute an important period in the motor skill development. There are several inherent conditions that restrict the availability of opportunities of motor practice to the preschool mentally retarded child. This article discusses some of these factors.

Statement of the Problem

The aim of the experiment was to make comparisons of the selected motor skills of agility, static and dynamic balance between moderate retarded and non retarded children.

Methodology

The aim of the research was to test the basic motor abilities of the children and the young adult with the Moderate Mental Retardation (MR). It was also in the current study that the difference between the boys and girls and between various age groups was evaluated. The research question was to establish aerobic loco motor skills like walking, running, jumping, throwing, kicking, agility, and balance of moderate MR children and young adult in relation to various age groups. The participants included n= 90 students (45 boys and 45 girls) with moderate MR that was between the ages of 9 and 15 years old. The participants were enrolled in special schools of St. Annes Convent and St. Bishop Sargent School of Mentally Retarded Children, Tirunelveli. The subjects were separated into three age categories (9-11, 12-13 and 14-15 years old). The assessment of the basic motor skills was carried out with the help of the Test of Gross Motor Development (TGMD, Ulrich, 1985). The TGMD analyses seven loco motor skills. The effect of the two classes of variables on the dependent variables was assessed by using descriptive statistics and the Two- way factorial (2x3) Analysis of variance (ANOVA). In case the significant interaction of the obtained ratio of F was significant, then the test of simple effect was adopted to determine the performance score of the mean of the gender and the age group that had significant performance. The interpretations were compared individually by the test of scheffes. The level of significance was set at the level of.05.

Analysis and Interpretations of Data

Table I

The Mean and Standard Deviation oFundamental Motor Skills of Moderate Retarded Boys and Girls in Three Different Age Groups

Groups		9 & 11 years	12 & 13 years	14 & 15 years
Boys	Mean	45.07	50.6	59.4
	SD	2.54	3.65	4.52

Girls	Mean	40.4	43.87	46.53
		2.58	3.85	6.25

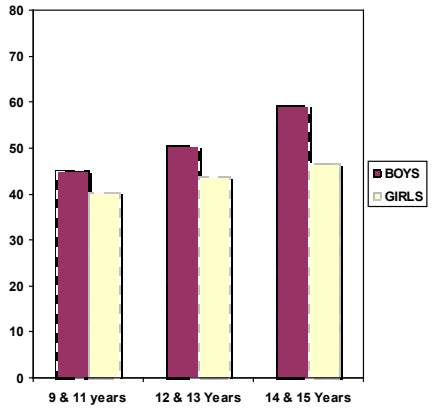

Figure I: Mean Scores of Moderate Mr Boys and Girls in Different Age Groups on Fundametnal Motor Skills

Tabie Ii
Two-Factor Anova on Fundamental Motor Skills of Moderate Mr Boys and Girls in Different Age Groups

Source of Variance	Sum of Squares	df	Mean Squares	Obtained F-ratio
A factor (Gender)	1472.17	1	1472.17	37.41*
B factor (Age Groups)	1578.42	2	789.21	20.06*
AB factor (Interaction)				
(Gender and Age)	272.82	2	136.41	3.47*
Error I	3305.2	84	39.348	

*Significant at .05 level. (Table values required for significance at 0.05 level with df 1and 84 & 2 and 84 are 3.95 and 3.10 respectively.)

Table III
The Simple Effect Test Scores of Gender (Rows) and Three Age Groups (Columns) on Fundamental Motor Skills

Source of Variance	Sum of Squares	df	Mean Squares	Obtained F ratio
Gender and 9 & 11 years	163.33	1	163.33	4.15*
Gender and 12 & 13 years	340.03	1	340.03	8.65*
Gender and 14 & 15 years	1241.63	1	1241.63	31.55*
Age groups and Boys	1567.51	2	783.75	19.92*
Age groups and Girls	283.73	2	141.87	3.60*
Error	3305.2	84	39.35	

* Significant at 0.05 level of confidence.
(Table values required for significance at .05 level with df 1 and 84 & 2 and 84 are 3.95 and 3.10 respectively.)

Table IV The Scheffe's Test for Difference between Paired Means of Moderate Mr Boys in Different Age Grouups on Fundamental Motor Skills

Adjusted Post Test Means			Mean Difference	Confidence Intervals
9 & 11 years	12 &13 years	14 & 15 years		
45.07	50.6		5.53	6.44
45.07		59.4	14.33	6.44
	50.6	59.4	8.8	6.44

* Significant at.05 level

Table XII The Scheffe's Test for Difference between Paired Means of Moderate Mr Girls in Different Age Grouups on Fundamental Motor Skills

Adjusted Post Test Means			Mean Difference	Confidence Intervals
9 & 11 years	12 &13 years	14 & 15 years		
40.4	43.87		3.47	6.44
40.4		46.53	6.13	6.44
	43.87	46.53	2.66	6.44

* Significant at.05 level

Results and Discussion on Findings

ANOVA results revealed that, there was a significant difference between the paired means of factor A (gender), factor B (age groups) and interaction effect (between A and B) on the basic motor skills. The simple effect test is used as the follow-up test since the interaction effect is a significant.

The Simple Effect results suggest that, there was a significant difference between the paired mean of gender and 9&11 years gender and 12&13 years on fundamental motor skill and 14 and 15years on fundamental motor skills. And also there was a considerable difference between the paired means of age groups and boys, and age groups and girls of fundamental motor skills. The scheffe test was used as the post hoc test since the F- ratio value obtained is found to be significant in the simple effect on columns and the two gender groups and three age groups are compared to determine the paired means difference.

The outcome of the scheffe showed that that, there existed a significant difference in fundamental motor skills between the paired means of 911 and 1213 and 1214 and 1415 years old boys and girls. Yet the basic motor skill was substantial amongst 14 15 years age group boys in comparison with 9 11 and 12 13 years age group boys and girls.

A large part of the past studies has backed the shifts in the qualitative performance which is age related among children with MR. The moderate mentally retarded are distinguished by physical fitness and gross-motor performance that are significantly lower than that of counterparts of higher age. In certain other studies, the two to four year lag between girls and boys has been pointed out in most motor activities (Rarick and Dobbins, 1972., Rariek, Widdop and Broadhead, 1970).

The less the intelligence quotient of the mind or mental age, the larger the motor proficiency deficits of the retarded (Cantor and Stacey, 1951). When a motor task is of higher Complexity; its cognitive demand is more and therefore, the higher the Complexity of the task the lower the motor performance of the moderately retarded (Fait & Kupferor, 1956., Groden, 1969). There is more intra individual variability and a broader individual difference in the retardate motor performance scores as compared to the general population (Rarick andDobbins, 1972) and the mental retards are particularly susceptible to the influence of motivation in their motor performance activities (Levy

Joseph, 1974). A recent study conducted by Rarick and Dobbins (1972) recorded a significantly more body fat content and a significantly lower score on physica1 fitness of the wide age range of children with mental retardation that they had to measure.

Based on the outcome of the research and also based on the literature provided above, this study concluded that quality in the performance of the basic motor skills does improve with the increase in age in children and young adult with moderate MR. Such outcomes might be explained by the fact that there are certain curriculum programs, in special schools, where the focus lies on the development of such skills.

Therefore this study highly suggested that, even as pre-school years is a significant stage in the growth of motor skills. More opportunities of the MR children to practice the motor skills in schools should be made. Also adapted physical educators are supposed to focus on special designed and separate adapted physical education program in regard to the cultivation of the basic motor skills of the lower and higher age group children with moderate mental retardation.

Conclusions

1. Significant difference was present between the three different age groups and the basic motor skills of the boys of girls with moderate MR.
2. It was established that the 16 and 17 years boys groups were superior in basic motor skills as compared to other age groups.
3. The boys were dominating over the girls at three different age groups in basic motor skills.

Recommendations

1. The research results of the study suggest that the adapted physical educators are to focus more on a special designed and separate adapted physical education program to the acquisition of the basic motor skills.
2. Other than motor skills could be chosen as similar study could be attempted.
3. The same study can be tried by picking up older age groups.

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