

THE INVESTIGATION OF MOTOR DEVELOPMENT LEVELS IN 08-12 YEAR OLD GROUPS OF GIRLS AND BOYS WHO STUDY IN PRIMARY SCHOOL

Elif TOP¹, Arslan KALLKAVAN²

Uşak University, Faculty of Sport Sciences, Turkey

²Karadeniz Technical University, School of Physical Education and Sport, Turkey
elif.top@usak.edu.tr

Abstract

The purpose of this study was to investigate the motor development levels in girls and boys, between the ages of 08 and 12, who study in primary school in the city of Kütahya. Bruininks–Oseretsky Test of Motor Proficiency-Second Edition (BOT-2)-Short Form were performed to determine basic motor characteristics of children. A total of 115 children (51 girls and 64 boys) participated in this research. According to age and gender of children based on measuring the degree of levels of basic motor development, homogeneity test was performed primarily. Two-way ANOVA test in the level of significant $\alpha = .05$ was performed. Tukey's HSD test was used as the second level test to determine the difference between the age groups. Test results showed that significant difference between the basic motor development scores of BOT-2 of 8, 10 and 12 age group children ($p < .05$). This study results showed that development differences in basic motor skills according to age. Difference between of the basic motor development levels of boys and girls in the same age group can be explained at the onset of puberty at different ages with by socio-cultural impact.

Key words: *Children, Motor Development, Bruininks-Oseretsky Test-2*

INTRODUCTION

Development means that structure and volume of the organism naturally observable the growth and differentiation. The early years are critical to a child's development and mastery of fundamental movement skills (FMS). The acquisition of FMS are developmentally sequenced and are contingent upon multiple external and internal factors (Louise et al., 2010).

Motor development has been identified as one of the important areas of a child's development because movement underpins their early learning (Hazel, 2011). Human motor development is a process of changes continuously. Motor development is seen as a progressive change in movement behaviour and occurs over the human life cycle. However, expert defined motor development as a study of changes in human behaviour that occur in life, the processes that cause these changes and the factors that influence it (Borhannudin et al., 2012). Research has demonstrated that if children feel confident about their motor ability they engage more often in physical activities such as dancing and sports compared with those children who lack confidence in this area. This suggests that targeting motor skills development may be a suitable approach to increasing physical activity participation in children, known to be important for the prevention of obesity and cardiovascular disease. Interventions have targeted physical activity participation in an effort to improve health outcomes. Increased

participation in physical activities in turn results in practice which is essential for motor skill development. It also leads to social skill development by providing opportunities to interact with other children in a play situation (Piek et al., 2012).

BOT-2 is a well-known measure of motor proficiency designed to provide clinicians, educators and researchers with useful information to assist them in evaluating the motor skills in students ranging from those who are normally developing to those with moderate motor skill deficits. The BOT-2 consists of eight subtests that were further organized into four composites according to both the muscle groups and limbs involved in the movements. These composites include fine manual control, manual coordination, body coordination, and strength and agility. The long version of BOT-2, described as the most widely used test of motor proficiency contains 53 items, whereas the short form has 14 items. As the long form takes at least 40–60 min to administer, the short form was chosen for this study, given the young age of the children. BOT-2 was developed to provide educators, clinicians, and researchers with useful information to assist them in assessing the motor skills of individual students, in developing and evaluating motor training programmes, and in assessing serious motor dysfunctions and developmental handicaps in children (Bruininks & Bruininks, 2005).

METHODS

BOT-2 was performed to determine basic motor characteristics of children who are studying and untrained boys and girls in classes second (8 age group), third (10 age group) and sixth (12 age group) grade, at the Kütahya Özel Başaran Yıldız Primary Public School in 2012 spring term. A total of 115 children, 41 children at the 8 age group (15 girls, 26 boys), 42 children at the 10 age group (21 girls, 21 boys) and 32 children at the 12 age group (15 girls, 17 boys), participated in this research. The children were divided in three age-groups. The study was approved by the Ethics Committee of the Department of Physical Education and Sport Science, University of Dumlupınar, Turkey.

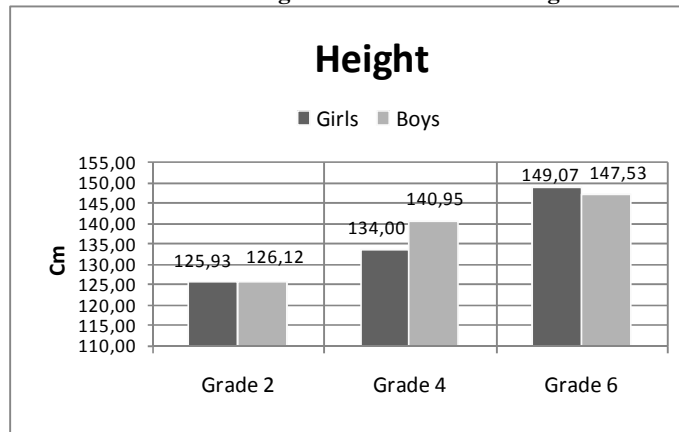
According to age and gender of children based on measuring the degree of level of basic

motor development, homogeneity test was performed primarily. Degree of basic motor development of children was determined to have a homogeneous distribution. After the test of homogeneity, to determine whether there is a difference between the levels of basic motor development of children depending on age and gender, Two-way ANOVA test in the level of significant $\alpha = .05$ was performed. Tukey's HSD test was used as the second level test to determine the difference between the age groups.

RESULTS

A total of 115 children, 41 children at the 8 age group (15 girls, 26 boys), 42 children at the 10 age group (21 girls, 21 boys) and 32 children at the 12 age group (15 girls, 17 boys), participated in this research.

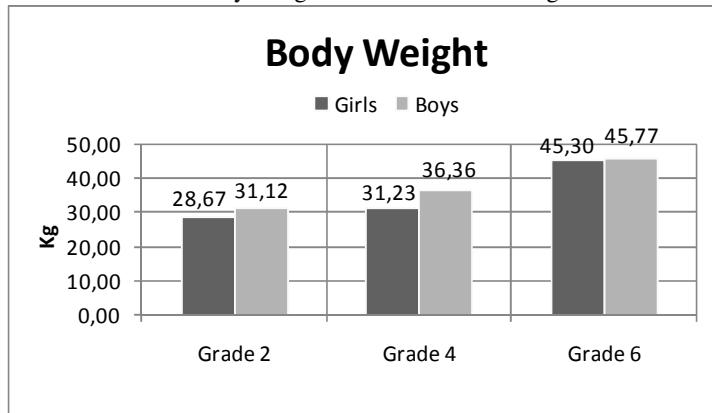
Table 1: Scores of Height of Children According to Grades



The results of Two-way ANOVA test showed that there were found a significant difference between

scores of height of children according to grade and gender ($F_{2,115}; 3.446; p < .05$).

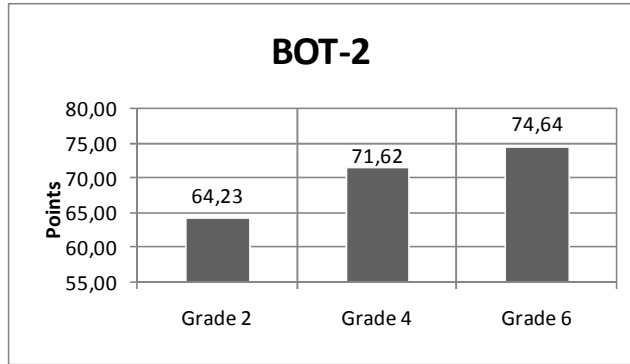
Table 2: Scores of Body Weight of Children According to Grades



The results of Two-way ANOVA test showed that body weight scores of children who are studying in classes second (8 age group), third (10 age group)

and sixth (12 age group) grade were found significant ($F_{2,115}; 34.066; p < .01$).

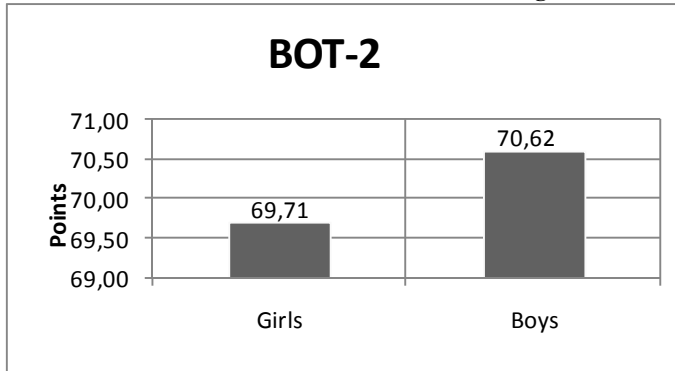
Table 3: Scores of BOT-2 of Children According to Grades



The results showed that BOT-2 scores of children who are studying in classes second (8 age group), third (10 age group) and sixth (12 age group) grade were significant ($F_{2,115}; 34.264; p < .05$). Tukey's HSD test (follow-up tests) was applied as the second-level test for determining of significant

differences between the groups. The test scores of VI. grade (74.641 ± 0.97) was statistically higher than IV. grade (71.61 ± 0.84) and II. grade (64.22 ± 0.89) according to the results of Tukey's HSD test, respectively.

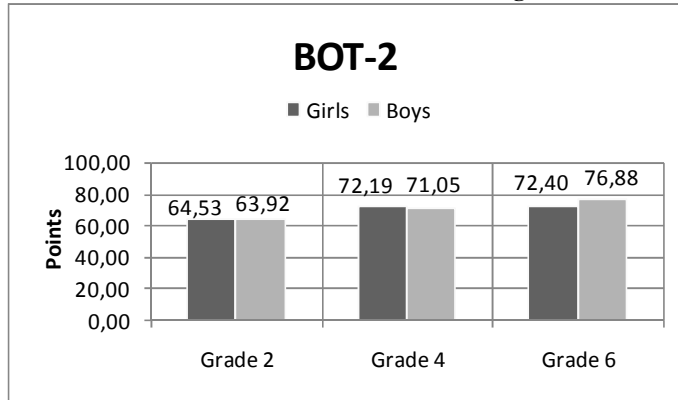
Table 4: Scores of BOT-2 of Children According to Gender



The results of Two-way ANOVA test showed that there was not found a significant difference between scores of BOT-2 of girls and boys ($F_{1,115}; 0.759; p > .05$). The scores of BOT-2 of boys

(70.61 ± 0.69) were higher than scores of girls (69.70 ± 0.77), although BOT-2 scores were not statistically significant between gender.

Table 5: Scores of BOT-2 of Children According to Grade and Gender



The results of Two-way ANOVA test showed that there was not a significant difference between

scores of BOT-2 of children according to grade and gender ($F_{2,115}; 2.754; p > .05$). Although the scores

of BOT-2 of boys (76.88 ± 1.33) in sixth grade were higher than girls (72.19 ± 1.19) and boys (71.04 ± 1.19) in fourth grade, girls (64.53 ± 1.41) and boys (63.92 ± 1.07) in second grade respectively, all these differences were not found significant. Similarly, Even though the scores of BOT-2 of girls (72.40 ± 1.41) in sixth grade were higher than girls and boys in fourth grade, girls and boys in second grade respectively, all these differences were not found significant. Again, although the scores of BOT-2 of girls in fourth grade were higher than boys in same grade, this difference was not found significant. In addition, the BOT-2 test scores of girls and boys in second grade also were found insignificant. Briefly, the BOT-2 test scores between the grades were found important. Although there were found differences between gender, grade and gender, all these differences were not seen important statistically.

DISCUSSION

The results showed that BOT-2 scores of children who are studying in classes second (8 age group), third (10 age group) and sixth (12 age group) grade were significant. According to the results of Tukey's HSD test, children in VI. grade scored statistically higher than children in IV. and II. grades, respectively. Venetsanou et al. (2009) investigated the validity of the Bruininks-Oseretsky test of motor proficiency-short form (BOTMP-SF) for the assessment of pre-school aged children. Three-hundred and eighteen children 48-71 months old ($M= 58.97$ months, $SD= 6.73$) participated in the study. The results of the ANOVA showed that age had a significant effect on the total battery scores. Moreover, the group of 60-65 months had a significantly higher mean total short form score than the groups of 48-53 and 54-59 months. Barnett et al. (2013) also concluded that motor skills were assessed for 76 children (42 female), mean age = 4.1 ± 0.68 . Child age, swimming lessons, and home equipment were positively associated explaining 20% of locomotor skill variance, but only age was significant.

The results of ANOVA test showed that there was not found a significant difference between scores of BOT-2 of girls and boys. The scores of boys were higher than scores of girls, although scores of BOT-2 were not statistically significant depending on gender. Mandy et al. (2007) concluded that the four fine motor subtests of the BOTMP were administered to a random sample of 264 Hong Kong children aged 6-10 years. There was a significant effect of age for all subtests. The analyses revealed no significant interaction effect between age and gender in most subtests except in Upper Limb Coordination. Boys were generally better than girls in Upper Limb Coordination and Response Speed. On the other hand, girls were better in Visual-Motor Control.

The results of ANOVA test showed that there were no found a significant difference between scores of BOT-2 of children according to grade and gender. Although the scores of BOT-2 of boys in sixth grade were higher than girls and boys in fourth grade, girls and boys in second grade respectively, all these differences were no found significant. Similarly, even though the scores of BOT-2 of girls in sixth grade were higher than girls and boys in fourth grade, girls and boys in second grade respectively, all these differences also were no found significant. In addition, although the scores of BOT-2 of girls in fourth grade were higher than boys in same grade, this difference was no found significant. In addition, the BOT-2 test scores of girls and boys in second grade also were found insignificant. Briefly, the BOT-2 test scores between the grades were found important. Although there were found differences between gender, grade and gender, all these differences were not seen important statistically.

Plimpton & Regimbal (1992) used the short form of the Bruininks-Oseretsky Test of Motor Proficiency (BOTMP) to compare the gross motor skills of 69 African-Americans (38 boys and 31 girls) and 111 Caucasian children (53 boys and 58 girls) who lived in the same metropolitan area of the mid-west of the United States. Results showed that African-American children were faster and more agile than Caucasian children. On the other hand, the Caucasian boys scored significantly higher than all other children in hand-eye coordination. Saeki, Clark & Azen (1985) compared the visual-motor skills of Japanese, Japanese-American and American children using the Design Copying and Motor Accuracy—Revised Tests of the Southern California Sensory Integration Tests. They found that both groups of Japanese-descent children performed better than the group of American children, in addition, the Japan-born children performed the best.

This study results show that development differences in basic motor skills according to age. Difference between of the basic motor development levels of boys and girls in the same age group can be explained at the onset of puberty at different ages with by socio-cultural impact.

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MENTAL PREPARATION FOR COMPETITION OF THE VOLLEYBALL PLAYER THAT ATTACKS FROM THE SECOND LINE

Dana Simona ȚURCANU, Florin ȚURCANU

University of Medicine and Pharmacy Tirgu Mures

Abstract:

Preparation for the competition includes the whole range of measures, actions, efforts undertaken by athletes and technicians to achieve performance in sports. This study aims to build a system of attitudes and conduct on volleyball players that attack from the second line, with operational and regulatory character that they can use to adapt creatively to the game's various situations and the opponent's actions. The sample of subjects in number 12, is the women's volleyball team CSU Medicina Tirgu Mures. The study period is 1 to 30 November 2012 and relates to participation in the Challenge Cup of CSU Medicina against Peelpush Meijel (The Netherlands). The research methodology consisted of compiling "the contest dossier" for the two official games. The material developed focused on information about mental preparation for the competition of the players that execute the second line attack and consisted on focused analysis of four major areas: information about themselves, information about opponents, information on the conditions of competition and contest information. All this information has been submitted for processing, interpretation and decision. "Profile sheets" were developed for both teams and, at the end, were compared to each other. The end result was unfavorable for CSU Medicina Tirgu Mures, in the sense of losing the confrontation with the team from The Netherlands. This was reflected on the effectiveness of the second line attack which was superior for the female players from Peelpush Meijel team.

Keywords: volleyball, second line attack, mental training, efficiency, opponent

Introduction:

Psychodiagnosis is one of the most important aspects of the motor activities field, with

broad impact on sports orientation, on the preparation and the results of motor activities [5].