Research Paper

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Comparative Analysis of Physical Growth and Coordinative Abilities Among Rural and Urban School Boys

Physical Education

KEYWORDS : Physical growth, coordinative abilities, school boys

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ABSTRACT

Childhood is considered one of the most important stages in man's life. During this stage, a child's abilities develop and his talents mature and they gets suitable and passive. The study on physical growth of children is the most important criteria for recognizing health of children. Increase in height and weight are the clinical sign of growth. Coordination is about controlling all of body parts while doing different activities of children. It is about making and maintaining connections between the brain and the muscles that control movement of the children. The purpose of the study was to compare the physical growth and coordinative abilities between urban and rural school going boys. For this purpose One hundred eighty boys age ranging from 10 to 15 years were selected as subjects for the study of which ninety were urban and the remaining ninety boys were rural school going from different schools of Bangalore District, Karnataka. The subjects were tested their respective school ground for a week. The criterion measures included are height, weight and chest circumference, differentiation ability was used measured by backward medicine ball throw test; hand-eye coordination was used measured by alternate hand wall toss test. For the purpose of comparison of above criterion variables between rural and urban school going boys, 't' ratio statistical technique was used to analyze the data through SPSS package. The level of significance was set at p<0.05 level. The results showed significant differences between rural and urban school going boys in the physical growth and coordinative abilities. There is a need to create awareness among rural school children and their parents about physical growth and health which can be improved by providing proper care and nutrition right from early childhood period.

INTRODUCTION :

The study on physical growth of children is the most important criteria for recognizing health of children. Increase in height and weight are the clinical sign of growth. Growth can be defined as an increase in size, organic growth of an organism takes place through cell multiplication. There is a progressive increase in size until the child reaches adulthood.

Growth monitoring should effectively be done to ensure optimum development in children. Physical growth of children is reflected by different anthropometric measurements especially weight and height. On the other hand, child height and weight are good index for recognizing the nutritional status. The ecological environment is responsible for the major differences observed in the growth of children. Although the physical growth is a process abiding the same biological laws, it is difficult to define the normal growth because children belonging to the same age group by no means are uniform and constant in their growth pattern. The physical growth is rapid for the purpose of comparison with a heterogeneous group, the reference standards for anthropometric measurements need to be evolved and used. Thus the study was conducted to know the physical growth status among school going children.

Children develop increased coordination and muscle control during the school-age years, and toward the end of this period they may have roughly the same physical coordination as adults.

There are several studies in the human biological literature dealing with differences, which occurred also in anthropometric traits in different social strata and/ or in urban and rural people. Differences in mean height and weight (and also other characteristics) in children belonging to different socio-economic strata and/or living in towns or villages occur in almost all developed as well as in developing countries, and also in India. Genetic endowments influencing the growth and maturation process can better manifest themselves under better environmental circumstances. The two points of view in growth studies, mentioned here, namely socio-economic factors and/ or urban and rural environment overlap. In other words, it is not easy to separate their effects on the growth process. On the other hand, in many countries, including India, living conditions in towns tend to be more advantageous than those in villages.

Growth is determined by biological determinants including sex, birth weight and genetic constitution. Socioeconomic and environmental factors seem to produce their effect by the presence of nutritional deficiencies, parasitic infections and psychosocial illnesses. It is difficult to derive norms of Indian children due to wide variation in socioeconomic status, nutrition conditions, and ethnical and regional differences in India (Sayed, 2006). Sahoo, Hunshal and Itagi (2010) showed that physical parameters in urban children were at higher level than in rural children.

Hockey (1983) refers that the availability of the coordination abilities, its development is also associated coordination motor abilities of individuals in a correct with the development of the different associated physical manner will properly helps to good thinking and ease of and skill qualities (Fattah, 1997). Stanistaw and Duda mentioned that referred that coordination abilities divided to physical developing the coordination abilities plays an important abilities, sport motor performance abilities and mixed role in achieving the best results where there is correlation abilities, these abilities considered the main base of between the coordination abilities and motor skills, reaching the optimal skill performance. With this in mind, a study was undertaken to carry out a comparative study of physical growth and coordinative abilities in school children (10 to 15 Years) in rural and urban areas of Bangalore district, Karnataka.

MATERIALS AND METHODS :

Method : The descriptive method was used as it suits the nature of this research.

Population and Sample: The research population involves school going boys aged above 10 to 15. The research sample was randomly selected. The study was conducted in healthy school children from the rural and urban areas of Bangalore district. This study included the children in the age group between 10 to 15 years. A total of 180 school boys from rural and urban areas of Bangalore district were taken for study. Out of 180 children, 90 were urban school boys and 90 were rural school boys. A special proforma was prepared to register name, age, personal growth and coordinative abilities of children. Urban school children studied were from private schools and rural school children were from government schools. Detailed physical examination was carried out and only healthy children were selected for study. Appropriate principled permission for studies was obtained from the concerned authority before commencement of this study.

Data collection Tools : The criterion measures included are

standing height to the nearest centimeter and weight to the nearest 100 grams were measured in the upright position, barefoot and in light clothing by experimenter and chest circumference, differentiation ability was used measured by backward medicine ball throw test; hand-eye coordination was used measured by alternate hand wall toss test.

Administration of Tests: The necessary data was collected by administering physical growth and coordinative abilities.

Statistical Analyses : All statistical analyses were performed with SPSS (Statistical Package for Social Science, Version 11). Descriptive statistics including mean scores and standard deviations were computed for all variables. Group differences in physical growth and coordinative abilities were assessed using unpaired student's 't' test.

RESULTS AND DISCUSSION :

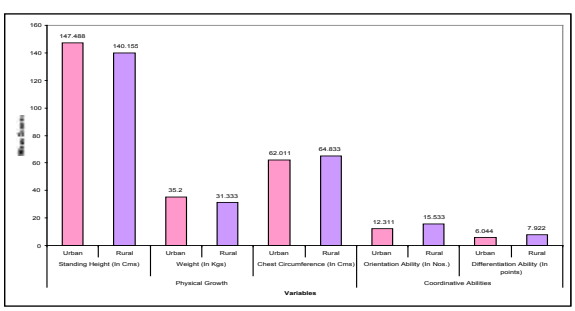
Table-1 procures the comparison of physical growth and coordinative abilities between rural and urban school going boys. Statistically significant differences are revealed in the physical growth and coordinative abilities between rural and urban school going boys. Rural school going boys were found to possess greater physical growth and quick coordinative ability than their urban school going counterparts.

Table-1: Significance of difference of Mean scores of Physical Growth and Coordinative Abilities of rural and urban school going boys.

Variable	Group	Mean	Standard Deviation	S.E. Mean	Mean Difference	't' Ratio	Level of Significance
Physical Growth							
Standing Height (In Cms)	Urban	147.488	10.823	10.823	7.333	4.74	*
	Rural	140.155	9.905	9.905			
Weight (In Kgs)	Urban	35.200	10.123	1.067	3.867	2.84	*
	Rural	31.333	8.035	0.846			
Chest Circumference (In Cms)	Urban	62.011	15.517	1.635	2.822	1.12	NS
	Rural	64.833	5.755	0.606			
Coordinative Abilities							
Orientation Ability (In Nos.)	Urban	12.311	4.296	0.452	3.222	4.80	*
	Rural	15.533	4.705	0.495			
Differentiation Ability (In points)	Urban	6.044	5.753	0.606	1.878	2.82	*
	Rural	7.922	2.606	0.274			

* Significant at 0.05 level of significance; [NS]Not Significant

Fig.1: Comparison of mean scores of Physical Growth and Coordinative Abilities of rural and urban school going boys.



From the above table, the obtained 't' ratios for standing height and weight are 4.74 and 2.84 greater than the table value 1.97 at 0.05 level. The statistical analysis shows that there exist significant differences in standing height and weight between urban and rural school going boys. The urban boys were found to be taller and heavier than the rural boys, but the rural boys were found to be greater chest circumference than the urban boys but the mean differences in chest circumference of the urban and rural school going children not found to be significant in statistical terms due the 't' ratio 1.12 is less than the table value 1.97 at 0.05 level. It is noticed that lifestyle of the rural people is based on hard physical works than that of urban people which makes the students more hardy, speedy, agile, flexible and probably due to such reasons they assumed high functional ability in their daily life activities, which rather assists them to be more fit physically and mentally than that of the urban students. Moreover the rural students mostly live in villages or small towns where because of their lower socio-economic status they usually engage themselves in hard working and laborious types of activities which also assist them to develop their health fitness. Regular practice of systematized physical activities in childhood and adolescence may strongly favour the development of suitable levels of fitness. This finding is in agreement with previous studies (Vyas 2012).

The table further reveals that, the obtained 't' ratios for orientation and differentiation abilities are 4.80 and 2.82 greater than the table value 1.97 at 0.05 level. The statistical analysis shows that there exist significant differences in orientation and differentiation abilities between rural and urban school going boys. The rural boys were found to be great orientation and differentiation abilities than the urban school going boys. Orientation ability is the ability to determine and change the position and movement of the body in time and space in relation to definite field of action. Significant difference in the rural and urban school going boys might be due to the reason that rural school going boys have high kinesthetic sense organs assume more importance of orientation than urban school going boys.

Differentiation ability is the ability to achieve a high level of fine tuning or harmony of individual movement phases and body part movements. Significant difference between rural and urban school going children in relation to differentiation ability might be due to the reason that the different level of tuning and harmony of individual movement phase and body part movements. Rural school going children might have high level of tuning and harmony due to less weight. This result is reliable with the results reached by Bakhit (2010).

CONCLUSION :

The physical parameters in urban school boys are found to higher as compared to rural school children. This is due to differences in nutritional status and socio economic status in rural and urban areas. Thus, the growth of individual, bedsides genetic factors is affected by different environmental, food habits, life styles, nutritional and all factors act together on growth of an individual.

RECOMMENDATIONS :

The study recommends that there is a need to create awareness among urban school children and their parents about physical growth and health which can be improved by providing proper care and nutrition right from early childhood period.

Using a coordinative abilities test battery as an indicator for the selection of children and develop training programs for children aged 10-15 to help them acquire coordinative abilities at younger age, as they are of great importance for achievement in different sports.

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REFERENCE

Bakhit M.A., and Y.H. Hamed, Complex Coordinative Abilities as an Indicator for Selection of Youngsters", World Journal of Sports Sciences (2010). Vol.3(S): 230-234. | EI-Syed, M.L. "Sports Achievement and Training Work Rules. Book Center for Publishing, Cairo, P.121. | Fattah, Abdel, A.A. Sports Training and Physiological Fundamentals", Dar Elmaaref, Cairo, p.235. | Hockey, R.V., Physical Fitness Pathway to Healthful Living, Mosby Company, 4th Edn., USA, P.294. | Sahoo K, Hunshal S And Itagi S. "Physical Growth of School Girls from Dharwad and Khurda Districts. Karnataka Journal Agricultural Science (2011), Vo.24(2): 221-226 | Stanistaw, Z. and H. Duda, "Coordinating Ability but efficiency of game of young football players. Team games in physical education and sport. Academy of Physical Education, Cracow, Poland, p.284. | Vyas, M.R., Thakur, S.J. and Parmar, P.P. "Comparative Study of Body Composition between City and Rural Area Boys in Gandhinagar", Journal of Exercise Science and Physiotherapy, (2012) Vol.8(1): 48-50. | World Health Organization (WHO), "Physical Status: The Use and Interpretation of Anthropometry", Geneva: World Health Organization, Technical Report Series, No.854, 1997.