

The Relationship between the Development of Fundamental Skills and Families' Income

Keivan Shabani Moghaddam^{1,*}, Mehdi Roozbahani², Aliashraf Khazaei³

¹Faculty member of Razi University, Kermanshah, Iran

²Faculty Member, Boroujerd Branch, Islamic Azad University, Boroujerd, Iran

³ Faculty member of Razi University, Kermanshah, Iran

*keivanshabani@gmail.com, Tel: +98 83382535322

Abstract: The goal of this study was to consider the relationship between the families' income and development of basic skills in children aged 8-10. The statistical population consisted of 100 elementary school students who voluntarily took part in this study. Using a realized questionnaire families' income was measured. Basic skill patterns were measured using Ulrich's Test of Gross Motor Development. Spearman's rho correlation coefficient showed a significant inverse relationship between the development of movement patterns ($P=0.01$) plus the development of object control patterns ($P=0.001$) and families' income. In other words, with increase in families' income, the development of fundamental skill patterns decreased. Given the results of the study, showing that families' income level and the extent of welfare existing among their children are related to fundamental skills patterns' lack of development, it appears that high-income families must, in addition to improving cognitive skills and study condition, emphasize the improvement of their children's movement quality as well.

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Introduction

Lack of movement in today's world has become one of the biggest problems of different societies, and a change of lifestyle and individuals' becoming less motional, especially that of children and adolescents, due to relative decrease of open spaces and sport, living in small apartments, popularity of computer games, etc. have augmented their physical and kinetic issues. Although perceptive-kinetic abilities are, with different ratios, produced by heredity and environment, one important environmental factor in the development of these abilities is how the initial and sensitive years of child's life are passed. Generally, human toddler tries from the time of birth to continue its life by overcoming a lot of environmental factors, and for this endeavor to be fruitful, growth and development, solidarity movements, locomotor, and manipulation are necessary. Children's movements develop broadly during their second year of life. In this age, using locomotor and manipulation skills, children begin to explore in the environment. They practice locomotor skills (walking, running, jumping, and hopping), and when a number of these skills are mixed, galloping, sliding, and jumping are formed. Locomotor skills can be considered as the building blocks making more specialized skills that develop in late childhood. Fundamental skills are the building blocks that construct the infrastructure for educating more complex sports and motion skills in different

sports. Identifying children's locomotor characteristics and measuring locomotor skills are especially important (Dianne, Ruth & Russell, 2007; Gallahue, 2006). Fundamental locomotor skills' lack of proper development over sensitive childhood years might restrict the ability to learn advanced locomotor skills in subsequent years. The importance of persuading bodily activity among children relies on the basic assumption that locomotor behavior will become part of the individual's life, and it will continue in adulthood (Coakley, 2003).

Children's development of locomotor skills is not an age-dependent phenomenon, but most children have a potential ability to acquire various advanced skills until the end of age 6. Locomotor skills undergo considerable changes as a child ages. The highest progress of locomotor skills depend on the child's being motivated by others (Gallahue, 2006). Various factors such as individual differences, experience, and environmental circumstances can create differences in acquiring advanced forms of these skills. Sexual differences can also be a reason for these discrepancies. Of course, differences are caused, mostly, due to cultural views, presence of exercise opportunities, environmental facilities, and further freedom of boys for taking part in sport activities in comparison with that of girls. According to a report by Coakley (2003), sports have traditionally been monopolized to men, and only in recent years, they have found gained concept and

credit for women. Studies show that from age 2 onward, girls have less activity than boys. This gender gap deepens in adolescence. In ages 13 through 15, only 41 percent of girls and 68 percent of boys achieve the recommended level of physical activity. Reduction in activity also continues in adulthood. As physical activity reduces with increase in age, the time used for inactive affairs also increase (Marshal et al, 2007). The reduction in women's movement exposes them to diseases and complications caused by poor movement. West et al (2002) reported physical activity of girls as trivial. The results of a study done by Cameron et al (2002) by phone survey showed that girls get involved in physical activity less than boys. Studies reveal that in comparison with girls, boys have more activity, and physical activity decreases as age increases, wherein this decrease is more in girls than in boys (Caspersen, Pereira & Curran, 2000; Sallis, Prochaska & Taylor, 2000). The socio-economic condition of a family has a determinative role in improving physical activity among children and adolescents. An individual's socio-economic condition might impact his/her participation opportunities, activity type selection, as well as his/her situation. For instance, youths dwelling and growing in poor districts rarely have tennis courts and swimming pools, and they have many problems to access sport facilities and sport complexes. They typically cannot afford to purchase fishing, climbing, and boating equipment. Therefore, family environment and socio-economic status of individuals in childhood, adolescence, and youth affects both sport-participation opportunities and mental views regarding different sports. Coakley (2003) suggested that children of parents with a weak socio-economic status have lesser chance of participating in sport activities. Nonetheless, in another study in Turkey, girls in families with a lower socio-economic status got involved in physical activity, more than those of higher levels (Kocak et al, 2002). Given the above statements, this study aims to find answer to the question, "is there a relationship between families' income and the development of fundamental skills in elementary-school students?"

Methodology

The present study is practical in terms of goal and the research method is correlation. To gather information regarding the amount of families' income a realized questionnaire was used, and before starting the study, the questionnaire's validity and

reliability were put under final verification by supervising professors and the advisor. Also, using Ulrich's tests for mobility and object control, each of which include six sub-tests, and each sub-test is scored according to each component with either 0 or 1, fundamental skills were evaluated. Ulrich's Test of Gross Motor Development, second revision (Ulrich, 2000), was built as a tools of evaluating selected motor skills in children aged 3 through 10, and above. Selected manipulation and locomotor skills comprise a 12-item test. Locomotor skills include running, galloping, hopping, jumping, long jumping, and sliding, and manipulation skill includes kicking, throwing in a hand-over-shoulder state, and rolling an object in a state of lower shoulder. A manual with a collection of obvious test instructions is available, and it takes about 15 minutes for every child to perform the test. This test mostly stresses sequence and quality of gross locomotor patterns, rather than the product and quantity of movement aspects. Every pattern includes 3-5 performance criteria. The subject performs each pattern in two trials and receives a score of either 0 or 1. Score for every child is calculated by summing the criteria executed properly in the two trials, for each pattern. For instance, if a skill consists of three performance criteria, the score range becomes 0-6 (Gallahue, 2006). The statistical population for the study consisted of elementary school students of the county of Boroujerd, with the sample being selected conveniently and voluntarily for 100 students from several schools. In geographical terms, this research was conducted in three districts of north, center, and south of the county of Boroujerd. After performing the test, the goal of the study was expressed by the researcher, and then the participants were asked to answer the questionnaire questions sincerely. Of course, to verify provided answers, most families were inquired.

Data analysis

Data analysis was done by SPSS 19, and descriptive statistics and correlation were used. In the section of descriptive statistics, tables and diagrams were employed to show mean, standard deviation, and scores of fundamental skills.

Findings

As displayed in Table 1, the mean income of families was about 10,000,000 IRR, with the lowest and highest values being reported 3,200,000 IRR and 22,000,000 IRR, respectively.

Table 1: descriptive statistics criteria based on the criteria of monthly income and fundamental patterns

Statistical criteria Income/fundamental patterns	Mean	Standard deviation	Max	Min	Number of participants
Families' monthly income	996300	462783	22,000,000	3,200,000	100
Object control fundamental patterns	21.34	7.291	34	7	100
Fundamental locomotor patterns	18.38	7.133	32	5	100

To consider the normality of data distribution, Kolmogorov-Smirnov test was used the results of which have come in Table 2.

Table 2: the results of Kolmogorov-Smirnov test regarding fundamental patterns and monthly income

	Statistical value	Degrees of freedom	Level of probability
Fundamental object control	0.101	100	0.013
Fundamental locomotor patterns	0.141	100	0.001
Family's monthly income	0.072	100	0.200

Since in this test the probability value was less than the significance level of 5 percent for the variables of object control and locomotor patterns, the distribution is non-normal and non-parametric tests have to be used for data analysis. Given the abnormality of data distributions of fundamental locomotor patterns and, also linear relationship between the development of locomotor patterns and monthly income, Spearman's rho correlation was used for testing the hypotheses, assuming a $P < 0.05$ level of significance.

Table 3: the results of Spearman's rho test regarding the development of fundamental locomotor skills and monthly income.

Correlation coefficient	Probability value	Degrees of freedom
-0.906	0.001	98

Spearman's rho correlation test shows that there is a strong and significant inverse relationship between the variables of fundamental object control patterns development with family income. In other words, as families' income has increased, the development of fundamental patterns has decreased ($df=98$, $r=-0.906$, $P=0.0001$).

Table 4: the results of Spearman's rho test in regard to the relationship between the fundamental skills development and family's monthly income

Correlation coefficient	Probability value	Degrees of freedom
-0.953	0.001	98

Spearman's rho correlation test shows that there is a strong inverse significant relationship between the variables of fundamental motor patterns' development and family's income. In other words, as families' income has increased, the development of fundamental motor patterns has decreased ($df=98$, $r=-0.953$, $P=0.001$).

Discussion and conclusion

The results of the study showed that families' income and their level of welfare available for their children have played some role in lack of fundamental skills' development. In this study, with increase in the level of families' income, children's development of gross motor skills has decreased. This might be due to the fact that children of rich families typically do not bother to perform hard movements and bodily activities in childhood, and

their parents take the hardship of movement and endeavor from their children by providing facilities as much as possible. It could also be stated that changing lifestyle, reducing open spaces, dwelling in small apartments and replacement of childish playmates by such devices as computers and PlayStation have led to the prevention of development and progress of fundamental skills. In contrast, children of low-income families, probably in early childhood, and besides doing dynamic games, sometimes assume responsibility to afford part of the family expenditure, thus spending their childhood years with work and endeavor. Factors such as exercise opportunities, stimulation and enrichment of the environment, environmental equipment and circumstances and educational quality might contribute to the development of kinetic skills. According to the view of dynamic

systems, environment and environmental factors play a determinative role in the development of children's skills. A lot of environmental factors affect the growth of locomotor skills of manipulation, for example, such factors as social, economic, and cultural status, interaction of family members and having locomotor experiences. A family's social, economic, and cultural condition has a profound impact on social development and participation manner of adolescents. Children are naturally active and perform many physical exercises during their daily lives, but the modern apartment lifestyle and also, popularity of computer games and TV lead to motionlessness and obesity in children (Dianne, Ruth & Russell, 2007; Logan, 2008). Active children have lesser weight and more experience in various basic locomotor skills. A child, who has accepted bodily activity as part of his lifestyle, will less often suffer obesity and other complications of physical motionlessness. Furthermore, physical activity via connecting with one's family and friends plays an important role in the growth and development of social skills. Childhood is the best occasion for children to be socialized through bodily and recreational activity, because children's physical skills, perspectives, values, and behaviors form in this age (Telama et al, 1997). Many children live in populated cities and high apartments, small residential blocks or in suburbs, and there is not enough equipment to fulfill their locomotor needs. Even in districts where there are facilities for public use, children have to share the facilities with adults, and most often adolescents and even adults prevent the fulfilment of children's needs and interests by appropriating the facilities, and thus children are deprived from acquiring novel locomotor experience. Exercise opportunities have become limited with lack of appropriate facilities. For instance, the expense for purchasing basketball (ball), tennis racket, and other facilities is high, and buying sufficient and various equipment for use by children, is extremely difficult for parents and social sport centers. The time factor is one of the most important factors affecting exercise opportunities. Many children do not have sufficient time to develop their own locomotor skills, so that their day is spent by going to school, watching television, playing computer games, and doing exercises, and thus they do not have sufficient time for physical activity.

According to Galaho's Sand Clock model, fundamental patterns such as walking, running, jumping, leaping, sliding, hopping, jumping over shoulders, hitting with hand, etc. must be fully developed so that individuals can enter the expert stage. Galaho believes that in case children do not achieve the level of flourishing fundamental skills,

they face a great obstacle for specialization. To flourish fundamental patterns, exercise opportunities, applause, and practice are required. Of course, exercise opportunities do not, by themselves, lead to the development of skillful movement in most children. Without having a suitable development program, most children never flourish in manipulation locomotor skills. In the development of fundamental patterns, the role of environmental factors is bolder. To put it another way, the development of fundamental patterns does not occur genetically and automatically. One of the environmental factors that can have an effective role in growth of these patterns, is the level of families' welfare and income that can result in growth or prevent growth of fundamental patterns. Lastly, it could be stated that families' level of income can, in three ways, affect the growth of fundamental skills:

1. Residence location: low-income families often dwell in populous areas, increasing the probability of same-age children in these places. The presence of same-age children provides more motivation for local games and the so-called *alley education*, which is often coupled with physical activity. In this situation, children prefer to do group games such as soccer, volleyball, and native local games with their fellow children. This provides more exercise opportunity for the development of fundamental patterns. Nonetheless, children of families with a higher social status less often enjoy such opportunities, because in their residential place, juniors are seen less frequently.
2. Emphasis on cognitive and education skills: it seems that the emphasis of families with a high income in this study is more on children's cognitive skills, rather than locomotor ones. In other words, high-income families care more about strengthening subjects such as foreign language, math, computer, etc. rather than their children's physical activity and locomotor development.
3. Freedom in selection of physical activity type in low-income families' children: it appears that children of families with a low income have more freedom of action in the selection of their favorite sport activities, while this is not the case for the children of high-income families, because parents of these children generally pre-determine sport activities for their children, and this shrinks the motivation factor in sport activity, and it also might cause the children to abandon sport activities. Since welfare facilities are more for the children of high income families, their access to digital

technologies is higher and given the charm of these technologies, children get involved in them more. In regard to the children of low-income families, it could be stated that typically number of children for each family is higher and parents prefer to lead their children to the outside of house and especially to the alley for spending leisure time, where fellow children are hungry for playing with them.

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