

The Relationship, Motor Ability and Social Behavior in Children of Age 4-6 Years

Elton Bano¹, Edison Ikonomi², Enkelejda Muka³

^{1,2}Sport Department, Science Movement Faculty,

³Department Health and Sports, Health and Recreation Faculty,
Sport University Tirana, Albania

Correspondence: Edison Ikonomi(e-mail: edisikon@yahoo.com)

Abstract

The purpose of the study is to understand the relationship between the motor and social ability after the gymnastic program intervention in preschool children. *The children have their needs to move and to do exercises. They should exercise everyday to coordinate limbs and body muscles to move in the best way their body. This is one of the reasons why physical activity represent an essential part of the children education program.* **Methods.** For the realization of our study, have selected 60 children from four Tirana's preschools city, age 4 to 6. The children are separated in two equal groups. Collected data begin, middle and in the end of tests and questionnaires were under a statistical processing by IBM SPSS package, version number 22. T-test is used to see if there are significant changes between control and experiment group skills along the tests phases. Pearson's Product-Moment coefficients is used to evaluate all the relations between dependent variables. **Results.** Dynamic balance skills has a negative direction correlation with social action. ($r = -.36^{**}$, $p = .00$); social independence ($r = -.48^{**}$, $p = .00$), and general social behavior evaluation ($r = -.37^{**}$, $p = .00$). Static balance skill has a positive direction correlation with social interaction ($r = .41^{**}$, $p = .00$); social action ($r = .37^{**}$, $p = .00$); social independence ($r = .39^{**}$, $p = .00$) and general social behavior evaluation ($r = .11^{**}$, $p < 0.01$). **Conclusions.** Study results shows that gymnastic program

has an impact in motor abilities education and development, but this impact is not the same in all abilities.

Keywords: Motor ability; Gymnastic; Preschool Children; Social Action; Balance.

Introduction

The childhood years represent one of the most important stages in the human development (Cooper et al., 1989). The thesis in which human development is compared with a 10 floors building is already accepted by many scholars, in which eighth first floors represent the age till 6 years old (Berk, 2002). To have a normal child development needs for sure the stimulation of external environment factors. Children with disabilities or those with social problems, as the normal child, have physical and psychological needs to live and develop their best potential (Schmidt & Wrisberg, 2008).

The children have their needs to move and to do exercises. They should exercise everyday to coordinate limbs and body muscles to move in the best way their body. This is one of the reasons why physical activity represent an essential part of the children education program. Through this activity, children have all the possibilities to discover and recognize themselves, to develop constantly moving skills which are inseparably connected with their child world and which creating their personality are valid for the present and future (Harrell et al., 2003).

The children learn from their life experience and curious nature, so they appear in school with a very considerable training and experience formed in their families or friends. All type of children have to learn their special methods (Johnston & Williams, 2009). An effective learning process have to be adapted individual characteristics and to be built over what the children knows and need to learn. Is also important to understand the way how the child learns.

Children learn through the fields moving interaction with the other fields which are: knowledge, social and emotional. In this way, physical education through moving experience focused in

moving skills contributes in children full development(Gallahue& Ozmun,2006).

Pedagogical sciences that handle the movement, consider it as a very important education tool. In this point of view, education and in particular the movement at preschool ages draws attention of many specialists and scholars, based on the pedagogical masterpiece to build and develop learning process in a creative way(Zachopoulou et al., 2010).

Preschool age, without doubt, is one of the most important periods that needs a special attention. The curiosity of the child in this age is a really treasure, which allows to discover in few years all the world around him. The child pay attention in details, in which adults do not recognize them. He join looking, hearing and touching things(La Freniere et al., 2002).

In this period children needs more than ever to move and play, because his mental development is directly connected with “his motor development”. When his “motor development” is not normal, there can’t be an intellectual development, affective and social. In this point of view, we think to explore in actual motor abilities and social level of the children in the age 4-6 years old(Bredenkamp& Copple,1997).

To improve the movement field in the preschool children, considering that the education and “motor skills” as a very important factor in movement development to create opportunities to practice social skills connected with childhood world, talent and their entertainment potential, which are valid to build their personalities in the present and future(Sigelman&Rider,2009).

Combination of theoretical with practical character serve the teachers of physical education which works with preschool ages (Hay, Payne & Chadwick, 2004).

Purpose of study

The purpose of the study is to understand the relationship between the motor and social ability after the gymnastic program intervention in preschool children.

Method

For the realization of our study, have selected 60 children from four Tirana's preschools city. The children are separated in two equal groups. In the experiment group will be implemented the education program with basic gymnastics elements, which will last twelve weeks, twice a week for an hour.

Gymnastic program build in a specific way to adjust from age 4 to 6. Children which will be part of this program will have the possibilities to practice with different gymnastics elements, games and social skills. They will have always the same leader and the same persons which will keep their data bases. For any change, in the end of twelve weeks program, data will recollect.

Control group, will follow a free program by using preschool infrastructure under educators supervision.

Based on methodological criteria for test selection, we have select a group of motor tests from contemporary literature as below. Reaction time test, coordination test (eye-hand), body test, agility test, static and dynamic balance test, muscular endurance test, explosive power test, muscular strength test and flexibility test (Duncan, McLeod & Phillips, 2005). Social skills and behavioral problems will be evaluated by evaluation questionnaire for preschool and pre-primary children PKBS adapted. In this study dependent variables are motor and social skills while the independent variables are the participation in the gymnastic program and gender.

Collected data begin, middle and in the end of tests and questionnaires were under a statistical processing by IBM SPSS package, version number 22. T-test is used to see if there are significant changes between control and experiment group skills along the tests phases. This test is used also to see the differences between dependent and independent variables. F criteria is used to tell the importance of dependent and independent variables relation. Pearson's Product-Moment coefficients is used to evaluate all the relations between dependent variables.

Results

Table 01: Correlation between social skills and motor ability

Motor Ability	Social skills							
	Social cooperative		Social interaction		Social independence		Total	
	r	p	r	p	r	p	r	p
Reaction time	-.05	.73	.08	.54	.14	.29	.06	.65
Hand action cube positioning(sec)	-	.00	-.51	.00	-.43	.00	-.49**	.37**
Hand action, postcards distribution (sec)	.06	.68	.15	.26	.12	.38	.12	.35
Kicking ball (m)	.00	.99	-.11	.40	-.27	.04	-.13	.34
Hand-eye action, push the needle thread	-.04	.74	-.09	.50	-.16	.22	-.10	.43
Static balance	.41**	.00	.37**	.00	.39**	.00	.11**	.01
Dynamic balance 6 cm	-.18	.17	-.36**	.00	-.48**	.00	-.37**	.00
Dynamic balance 4.5 cm	-.24	.07	-.34**	.01	-.42**	.00	-.37**	.00
Jumping right-left 15 s	-.12	.38	.29*	.02	.27*	.04	.58*	.05
Flexibility	.01	.95	-.04	.74	-.04	.79	-.03	.84
Long standing jump	0.11	.40	.29*	.03	.39**	.00	.28*	.03
Muscular endurance	-.08	.55	-.10	.44	-.09	.49	-.10	.43

Table 02:Correlation between externalizing problem and motor ability

Motor Ability	Externalizing problem							
	Self-centered/ explosive		Attention problems/ overactive		Antisocial/ aggressive		Total	
	r	p	r	p	r	p	r	p
Reaction time	-.1	.43	-.07	.62	-.06	.66	-.08	.55
Hand action cube positioning(sec)	.58	.45	.51	.50	.40	.62	.52	.00
Hand action, postcards distribution (sec)	.06	.67	.03	.80	.30	.98	.03	0.82
Kicking ball (m)	.23	.08	.12	.35	.24	.07	.21	.10
Hand-eye action, push the needle thread	.10	.45	.07	.58	.05	.70	.08	.56
Static balance	-.25	.05	-.20	.12	-.17	.19	-.22	.09
Dynamic balance 6 cm	.21	.10	.12	.37	.02	.89	.24	.07
Dynamic balance 4.5 cm	.04	.78	.08	.52	.20	.14	.39	.51
Jumping right-left 15 s	.38	-.21	.12	-.24	.06	-.21	.29	.45
Flexibility	.05	.73	.01	.97	.03	.85	.03	.84
Long standing jump	-.49	.60	-.39	.81	.23	.08	-.44	.51
Muscular endurance	.23	.08	.16	.22	.20	.13	.21	.11

Table 03:Correlation between internalizing problem and motor ability

Motor Ability	Internalizing problem					
	Social withdraw all		Anxiety/somatic		Total	
	r	p	r	p	r	p
Reaction time	-.06	.67	-.07	.59	-.06	.63
Hand action cube positioning(sec)	.43	.80	.34	.61	.39	.70
Hand action, postcards distribution (sec)	.01	.97	.03	.80	.02	.89
Kicking ball (m)	.13	.31	.09	.48	.12	.37
Hand-eye action, push the needle thread	.08	.53	.08	.53	.08	.53
Static balance	-.10	.43	-.08	.54	-.09	.47
Dynamic balance 6 cm	.12	.41	.34	.61	.03	0.82
Dynamic balance 4.5 cm	.22	.10	.17	.21	.20	.14
Jumping right-left 15 s	.15	.27	.11	.40	.13	.32
Flexibility	-.04	.74	.01	.97	-.02	.87
Long standing jump	.24	.06	.21	.11	.23	.08
Muscular endurance	.10	.47	.06	.63	.08	.53

Discussion

Achieved results from informative statistical processing (IBM SPSS , 22 -th version) for measured data in each subject, we confirm again the hypothesis at the beginning of this study that movement activity modeling in this age in function of education and movement develop skills is in the right way.

In case of the achieved results from subjects in which gymnastic program with simple elements was applied for 12 weeks, the changes are significant.

To define the relationship between social and motor abilities we used the correlation coefficient Pearson. Results from statisti-

cal processing shows that only in 6 cases is a significant relation between variables of both sets.

Best performance in motor abilities had the subjects with good skills in social behavior, while lower performance in some of motor tests had the subjects with high evaluation in problem behavior indicators.

Dynamic balance skills has a negative direction correlation with social action. ($r = -.36^{**}$, $p = .00$); social independence ($r = -.48^{**}$, $p = .00$), and general social behavior evaluation ($r = -.37^{**}$, $p = .00$).

Static balance skill has a positive direction correlation with social interaction ($r = .41^{**}$, $p = .00$); social action ($r = .37^{**}$, $p = .00$); social independence ($r = .39^{**}$, $p = .00$) and general social behavior evaluation ($r = .11^{**}$, $p < 0.01$);

Agility has positive correlation with social action ($r = .29^{**}$, $p < 0.02$); social independence ($r = .27^{**}$, $p < 0.04$) and general social behavior evaluation ($r = .58^{**}$, $p < 0.05$).

Power has a positive correlation with social action ($r = .29^{**}$, $p < 0.03$); social independence ($r = .39^{**}$, $p = .00$); and general social behavior evaluation ($r = .28^{**}$, $p < 0.03$).

Hand action, cubes position has a negative direction correlation with social interaction ($r = -.37^{**}$, $p = .00$); social action ($r = -.51$, $p = .00$), social independence ($r = -.43$, $p = .00$) and the total of social behavior evaluation ($r = -.49^{**}$, $p = .00$).

Children with focus problem have not good results with coordination skill. Children with good results in social competence have show a good performance in equilibration skill (Malina, Bouchard & Bar-Or, 2004).

Conclusions

Study results shows that gymnastic program has an impact in motor abilities education and development, but this impact is not the same in all abilities.

Results shows statistical changes in both genders in all performed tests in first and second phase.

Results evidenced significant statistical improvements of experiment groups in social skills indicators and in reducing problematic behaviors.

Results of statistical processing showed that there was a significant decrease in evaluation of social problems indicators of subjects in risk. Also in these subjects were evidenced good evaluations on social behavior indicators (Skinner & Piek, 2001).

Achieved results from statistical processing, shows that in some indications is a significant relation between social and motor skills.

Children who showed good skills in social behavior had a good performance in motor skills.

Children with high rating in social problems indicators had a lower performance in some of motor tests (Pruitt, 1998).

References

1. Cooper, P., Trnka, M., & Frederick, B. (1989). *Teaching Basic Gymnastics: a coeducational approach*. New York. p. 17.
2. Berk, L. (2002). *Infants, children, and adolescents*. Boston, MA: Allyn & Bacon.
3. Schmidt, R.A., & Wrisberg, C.A. (2008). *Motor learning and performance: a situation-based learning approach*. Human Kinetics, 4, p. 160-184
4. Harrell, J., Pearce, P., Markland, E., (2003). Assessing physical activity in adolescents: common activities of children in 6th -8th grades. *J Am Acad Nurse Prac*, 15, p. 170–178.
5. Johnston, J., & Nahmad-Williams, L. (2009). *Early childhood studies*. New York : Pearson Longman.
6. Gallahue, D., & Ozmun, J. (2006). *Understanding motor development, Infants, children, Adolescents, Adults*. (6th ed.) McGraw-Hill. p. 248 -270.

7. Zachopoulou E., Liukkonen J., Pickup I., & Tsangaridou N. Eds. (2010). *Early Steps Physical Education Curriculum: Theory and Practice for Children under 8* Champaign, IL: Human Kinetics.
8. LaFreniere P, Masataka N, Butovskaya M, et al. (2002). *Cross-cultural analysis of Social Competence and Behavior Problems in Preschoolers*. *Early Education & Development*. 13, p. 201–219.
9. Bredekamp, S., & Copple, C. (1997). *Developmentally appropriate practice in early childhood programs*. Washington, DC: National Association for the Education of Young Children.
10. Sigelman, C.K., & Rider, E.A. (2009). *Life-Span Human Development*. 6th. Belmont, CA: Wadsworth. Cengage Learning.
11. Hay DF, Payne A, Chadwick A. (2004) Peer relations in childhood. *J Child Psychol Psychiatry*. 45, p.84–108. [PubMed]
12. Duncan, J., McLeod, P., & Phillips, L.H. (2005). *Measuring the mind: speed, control, and age*. Oxford University Press. p. 125.
13. Malina, R.M., Bouchard, C., & Bar-Or. (2004). *Growth, Maturation, and Physical Activity*. Champaign, IL: Human Kinetics, 2, p. 215-220.
14. Skinner, R. A., & Piek, J. P. (2001). *Psychosocial implications of poor motor coordination in children and adolescents*. *Human Movement Science*, 20, p.73-94.
15. Pruitt, D. (1998). *Your child: Emotional, behavioral, and cognitive development from birth through preadolescence*. New York, NY: Harper Collins.