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The Effects of Modified Games on the Development of Gross Motor Skill in Preschoolers

Indah Lestari[1], Tri Ratnaningsih[2]
[1] Maternity of Nursing Department, Stikes Bina Sehat PPNI Mojokerto, Indonesia
[2] Pediatrics of Nursing Department, Stikes Bina Sehat PPNI Mojokerto, Indonesia

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ABSTRACT

Gross motor skills on children must be optimized much earlier since it plays important role not only on their interaction process but also in supporting other multiple developments. One of the means in developing child's motor skill is by providing innovative games i.e. modified games including game format, game timing, and game sequence. The objective of this research was to prove the effects of modified games to the development of gross motor skill of preschoolers. Research method was pre-experimental with One Group Pre-post test Design approach. Research samples were the students of Group B Kindergarten in the districts of Gedeg as many as 180 students which were conducted by using purposive sampling. Research instrument was observation during one month. The data was analyzed by Wilcoxon sign rank test. The results suggested that there was effect of modified games to the development of preschool gross motor skill with p-value = 0.000. Changes on motor skill development were obtained from those who were initially on the beginning stage, as many as 101 respondents, became 14 respondents after intervention. Development stage proceeded as expected, from initial 65 respondents the number increased to 130 respondents. At the end of the intervention, there were even 36 respondents whose development stage beyond where they were supposed to be. This proved that the provision of modified games had positive effects on physical, cognitive, and social development. Modified games triggered children's interest and made them be willing to train their activities as well as muscle development, decreased saturation, and improved their skills in a fun way.

Corresponding Author:

Indah Lestari,
Maternity of Nursing Department,
Stikes Bina Sehat PPNI Mojokerto,
Jalan Raya Jabon Km. 06, Mojoanyar, Mojokerto, Jawa Timur, Indonesia.
Email: ns.indah@yahoo.com

1. INTRODUCTION

In general, children at kindergarten do not have good motor skills. The development of gross motor skill plays important role in maintaining stability and coordinating good movement. It needs to be trained in well-managed, well directed, and well planned games in accordance with children's development stages in the learning process [1].

Initial research on Group B Kindergarten in the districts of Gedeg-Mojokerto, obtained results suggesting that their learning process has included activities aimed to trigger gross motor skill development including swimming, jumping, sliding on sliding board, swinging, and climbing half-rounded multiple ladders, walking straight on a walking path, rubber jumping, frog leaping. However, the sequencing of the stimulation has not been designed to match growth and development stage that not all of the children are able to perform such activities.

In preschoolers, gross motor skill develops in line with fine motor skill [2]. Motor skills manifest through a process namely adaptation. Individuals attempt to adjust oneself to the adaptation process by gaining some new experiences, e.g. a preschooler trying to hold a big ball. Changes will take place when the child learns that the ball is bigger than the toy they used to play with during adaptation process [3].

According to those experts, it can be concluded that games have certain effects on the development of gross motor skill of preschoolers. Thus, modified games are alternatives in developing of preschool's motor skill [4]. Bachrudin and Chaedar suggested that "real games have not yet to be implemented on preschools that the games need to be modified for the children to play regarding to development of their abilities." Those modifications appear on the basis of the development demands to solve some problems encountered on the ground such as child's saturation, lacking of child's movement exploiting, and the characteristics of preschoolers which are different from their older counterparts. The modification can be manifested in the sequencing, timing, games format, and so on [5]. Regarding modification, Lutan defined "Modification can be described as a change from old state to a new state. Modification can take place in the format, utilization functions, and benefits without having to remove the initial characteristics." Modified games can attract children in participating in the learning of movement and activities, as well as make them happy and fully exploited in terms of their movement skills [6].

2. RESEARCH METHOD

Research method was pre-experimental with One Group Pretest-Posttest Design approach. The objective of this research was to prove the effects of modified games to the development of gross motor skill of preschoolers at Group B Kindergarten in the districts of Gedeg.

The population was all students of Group B Kindergarten in the districts of Gedeg. Research samples were some students of Group B Kindergarten in the districts of Gedeg who meet research qualifications as many as 180 students, which were conducted by using purposive sampling. Research instrument used observation on the development of gross motor skill, by initially giving intervention in the form of modified games for one month to all respondents. Data were analyzed using the Wilcoxon rank sign test to determine $\alpha = 0.05$. Analysis was conducted by comparing the condition of pre and post experiments.

3. RESULTS AND ANALYSIS

The results of univariate analysis described the characteristics of respondents constituted by gender and age (Table 1).

Table 1. Frequency distribution of respondents' gender of Group B Kindergarten in the districts of Gedeg, May – June, 2015

No	Gender	Frequency	Percentage (%)
1.	Female	94	52.0
2.	Male	86	48.0
	Total	180	100

Table 1 showed that the distribution of respondents' gender participating in the research was almost equal between male and female. Moreover, Table 2 describes the age of respondent.

Table 2. Frequency distribution of respondents' age of Group B Kindergarten in the districts of Gedeg, May – June, 2015

No	Age	Frequency	Percentage (%)
1.	5 Years old	50	28.0
2.	6 Years old	130	72.0
	Total	180	100

Based on Table 2 it was known that there were 50 respondents aged 5 years old (28%), and 130 respondents aged 6 years old (72%).

Table 3. Frequency distribution of respondents based on gross motor skill before given modified games intervention at Group B Kindergarten in the districts of Gedeg, May – June, 2015

No	Gross Motor Skill Dev.	Frequency	Percentage (%)
1.	Not yet developed	14	8
2.	Began to develop	101	56
3.	Developed as expected	65	36
4.	Developed beyond expectation	0	0
	Total	180	100

Based on Table 3 it was known that before given modified games intervention: as many as 14 respondents had not yet developed (8%), 101 respondents began to develop (56%), 65 respondents developed as expected (36%), and 0 respondent developed beyond expectation (0%).

Table 4. Frequency distribution of respondents based on gross motor skill after given modified games intervention at Group B Kindergarten in the districts of Gedeg, May – June, 2015

No	Gross Motor Skill Dev.	Frequency	Percentage (%)
1.	Not yet developed	0	0
2.	Began to develop	14	8
3.	Developed as expected	130	72
4.	Developed beyond expectation	36	20
	Total	180	100

Based on Table 4 it was known that after given modified games intervention: as many as 0 respondents had not yet developed (0%), 14 respondents began to develop (8%), 130 respondents developed as expected (72%), and 36 respondent developed beyond expectation (20%).

Table 5. Frequency distribution of respondents based on gross motor skill before and after given modified games intervention at Group B Kindergarten in the districts of Gedeg, May – June, 2015

No	Gross Motor Skill	Pretest		Posttest	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1.	Not yet developed	14	8	0	0
2.	Began to develop	101	56	14	8
3.	Developed as expected	65	36	130	72
4.	Developed beyond expectation	0	0	36	20
	Total	180	100	180	100
	P value	0.000			

Based on Table 5 it was suggested that the number of respondents whose gross motor skill developed as expected were 65 respondents before intervention (36%) and increased to 130 respondents (72%) after intervention, while the number of respondents whose gross motor skill developed beyond expectation was none (0%) before intervention, the number increased to 36 respondents (20%) after intervention. The table also suggested that p-value = 0.000. It means that there was effect of modified games to the development of gross motor skills of preschoolers of Group B Kindergarten in the districts of Gedeg.

If compared, regarding child's gross motor skills before and after intervention in terms of modified games, there was significant increase regarding gross motor skill. Within development stage, gender is not a distinguishing factor regarding motor skill. Thus, child's ability honed appropriately will simultaneously give good motor skill development result.

The preschool years are marked by significant change in height, muscle strength and body mass and proportion that allow children to move in far more coordinated and complex way [7]. Numerous strategies have been studied or recommended, these can be divided into three categories: supportive teacher interaction, modification of play materials and equipment and re-design of play environment [8],[9].

The results suggested changes and improvement in gross motor skill from begin to develop into develop as expected, or even beyond expectation. It can be said that games have positive effects on child development in multiple dimensions i.e. cognitively, affectively, socially, and physically [10],[11]. Samsudin mentioned that for child's gross and fine motor skill to develop well, kindergarten students require enough physical activities in the form of various games which are: triggering the use of big muscles, simple, enabling them to try, promoting peer cooperation, and using game instruments varying in size [12],[13].

The motor play of preschool children is rich in emotional expression and social interaction. It may be the single best context for learning about other people, their feelings, temperament and abilities. It is on the playground that children often learn about making friends, being accepted or rejected by peers, resolving conflict and expressing feelings. Motor ability is related to a variety of indicators of emotional well [14],[15].

Gross motor skills involve the large muscles of the body that enable such functions as maintaining balance, walking, climbing, jumping, pushing, pulling and ball skills. They are building blocks for the development of fine motor skills. Appropriate play activities are key to providing children with the stimulation to help their motor skills development [16],[17].

Learning approach through games will give good effects on the enhancement of reacting ability, hands-eyes-and feet coordination, as well as dexterity and awareness to body balance, of which must be taken into account as a whole [18].

4. CONCLUSION

There was effect of the provision of modified games on the development of preschooler gross motor skill ($p = 0.000$). Modified game is an approach in learning emphasizing in fun, physical ability, and child's movement enrichment.

Through creative games, children have more opportunities to enrich their movements. Various movements with motor sensory, hands, feet, head, or other part of the body involving both big and small muscle will enable them to fully develop their physical motor ability. In short, creative games will support child's physical and motor development in several aspects i.e.: 1). Coordinating eyes and hands or eyes and feet, 2). Locomotor movement skill, 3). Non Locomotor movement skill, 4). Body management and control, including the understanding of their body function, distance, rhythm, balance, ability to go through or stop certain movements, and executing orders.

Modified games are easy to understand. Therefore, it requires concrete actions of the teachers to implement games in developing whole aspects of child development, particularly gross motor development.

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BIOGRAPHIES OF AUTHORS

Indah Lestari, S.Kep.,Ns.,M.Kes is a lecturer of maternity nursing at Stikes Bina Sehat PPNI Mojokerto. Presently, she is a doctoral student at the Faculty of Public Health, Airlangga University. She has seventeen years of experience working in the area of maternity nursing in Stikes Bina Sehat PPNI Mojokerto. Her research interests include clinical, community and management.
ns.indah@yahoo.com

Tri Ratnaningsih, S.Kep.,Ns.,M.Kes is a lecturer of pediatrics nursing at Stikes Bina Sehat PPNI Mojokerto. Presently, she is a doctoral student at the Faculty of Public Health, Airlangga University. She has eighteen years of experience working in the area of pediatrics nursing in Stikes Bina Sehat PPNI Mojokerto. Her research interests include clinical, community and management.
triratna83@yahoo.co.id