Using Physical Activities Helps Improve Children's Mild Mental Retardation's Intentional Attention and Physical Fitness

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ABSTRACT

The study identified 04 criteria to evaluate intentional attention status and 06 tests to assess the physical fitness of children with mild mental retardation of 6 - 9 years old in Mekong Delta Vietnam, at low and near - medium levels. Thereby, the study applied experimentally 16 physical activities belonging to 2 groups. Group 1 is physical fitness (including exercises on basic motor skills), Group 2 is the movement games exercise, which has applied the exercises into practice to improve the children's ability of intentional attention and physical fitness. Study on applying selected physical activities according to specific programs for children aged 6 - 9, mild mental retardation at some specialized schools in Mekong Delta for 10 months. The results show that: The intentional attention of children aged 6 - 9, mild mental retardation has a positive change, children have a significant improvement in the concentration of attention and Sustainability in attention attributes. Physical fitness, at all ages, has improved. However, when practicing according to the selected physical activities, the experimental group outperformed the control group in the following tests: Standing long jump (cm), One - leg standing balance (s), Throw a ball at a target (time), Forward bend sitting posture (cm) in 9 – year - old female, in other tests the experimental group improved better than the control group.

KEYWORDS
Physical activities, Intentional attention, Physical fitness status, Mental retardation, Fitness

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INTRODUCTION

Attention development education for children mental retardation is currently only considered as an activity associated with educational activities to develop other cognitive processes such as sensation - perception, thinking.[1] Therefore, to improve the child's ability to IA, and especially the child's mental retardation, it is necessary to have positive activities that affect the child through educational activities, continue to fundamentally change children's cognitive processes and activities, contributing to the development of thinking and maintaining health. Children with mild mental retardation are quite special subjects with many limitations in skills, language, communication, and especially concentration of attention.[2] Therefore, if using physical activities for children with mild mental retardation to practice, and then in addition to enhancing health and motor skills, it also helps children with a concentration of attention through which to develop IA. Therefore, it can be said that physical activities can improve the IA ability of children 6 - 9 years old with mild mental retardation. The use of appropriate physical activities for the intellectual development of children's mental retardation is a teaching method in the form of direct visualization which is very necessary and appropriate in the process of educating and rearing children.[3] Basic forms of movement such as walking, running, jumping, throwing, catching will help the child's functional transformation process always be at the necessary level, by the requirements of maintaining health, improving the health physical strength, perfecting motor skills.[4] With physical activities, children will be more independent, have brain stimulation, improve learning ability, increase cognitive ability and develop interactive ability. Based on the characteristics of children's mental retardation, through references and based on the purpose and objectives of the study, psychophysiological characteristics, and motor ability of the research subjects, the author has synthesized and selected 40 physical activities to improve the IA ability of 6 – 9 – year - old children mild mental retardation. In it, physical activities take the approach of basic fitness. This is a common form of fitness development, very rich and diverse in content and form. The content of basic gymnastics has simple natural movements (walking, running, jumping, throwing, and catching). The selection of physical activities in the form of exercise should pay attention to the simulation of images familiar to children to create excitement and increase attention for children.[5]

MATERIAL AND METHODS

The study was carried out on 146 mild mental retardation children aged 6 - 9, randomly divided into 2 groups: Experimental group: 75 (including 40 males and 35 females); Control group: 71 (including 36 men and 35 women). With 40 physical activities compiled from various sources, from an approach suitable to the purpose and objectives of this study, the characteristics of the research object and tested through two interviews, then selected, and selected 16 physical activities to put into the application with enough confidence 0.05. Including 02 groups: Group physical fitness and Group movement games for experimentation. Through a comprehensive survey and expert opinion with 16 / 40 exercises, the results of selecting physical activities to improve the intentional attention ability of children 6 - 9 years old mild mental retardation in Mekong Delta: From the results of two interviews according to the stated principle, only choose exercises with the rate of ≥ 80 % agreeing in two interviews (shown in Table 1).[6]

Group 1: Physical exercises		
Basic motor skills		
1		Walk on a straight line
2	Walk	Zigzag walk test
3		Move sideways on a straight line
4		Stepping over obstacles
5		Run on a straight line
6	Run	Running exercises on a rope ladder
7		Zigzag run test
8		Jumping exercises on a rope ladder
9	Jumping	Jumping exercises on a rope ladder, direction left, right
10		One-leg jumping on a rope ladder
Group 2: Movement games		
11	Throw the ball into the basket	
12	Balance game	
13	In and out game	
14	Tennis ball throwing test (Eye and Hand Coordination)	
15	Put down game without getting caught	
16	Kick the ball into the goal	

Table 1. Results of Selecting Physical Activities to Improve Intentional Attention of Children Aged 6 - 9, Mild Mental Retardation in Mekong Delta Through Expert Interviews.

After selecting 16 physical activities, the author proceeds to develop a detailed experimental plan with 35 weeks (corresponding to 10 months). After that, the effectiveness of the selected exercises will be evaluated after 10 months of experimentation. Time: September 20, 2019 - June 25, 2020, Frequency of training sessions: 3 sessions / week, 15 minutes / session. Weeks 1 - 25 experiment with a group of exercises, weeks 26 - 35 performed group of game exercises.

RESULTS

Assessment of Intentional Attention of Children 6 - 9 Years Old

The concentration of attention status of children with mild mental retardation was surveyed through interviews with experts and teachers, according to 5 levels corresponding to 03 specific manifestations. The data in (Table 2) show that the children's Concentration of attention is at a low

level (2.49 points), in which each Concentration of attention attribute has different levels. The highest metric is the ability to maintain attention in a narrow range (2.73 points), followed by only paying attention to one or a few necessary objects (2.62 points), both of which are of medium level. The ability to pay attention without being distracted or disturbed by other unrelated stimuli has an average score of (2.05 points) of low level. Sustainability in attention status of mild mental retardation children was surveyed through the distribution of votes to all experts and teachers, according to 5 levels corresponding to 5 specific manifestations. The results show that the average score of Sustainability in attention is 2.13 at a low level; Specifically, in the manifestations, the ability to maintain attention in 1 - 3 minutes has the highest average score (2.45 points), followed by the ability to maintain attention over 3 - 5 minutes (2.25 points) and from over 5 - 7 minutes (2.20 points); ability to maintain attention over 7 - 10 minutes and over 10 minutes average score is very low (1.91 points). The results also show that Sustainability in attention has a decreasing score over time. According to the DSM - IV classification of children's mental retardation.[11] DSM - IV uses intellectual quotient - IQ as a criterion to classify the level of mental retardation. There are four levels of mental retardation: Mild mental retardation: IQ from 50 - 55 to approximately 70; Moderate mental retardation: IQ from 35 - 40 to 50 - 55; Severe mental retardation: IQ between 20 - 25 and 35 - 40; very heavy mental retardation: IQ below 20 or 25. The study has selected 04 criteria for assessing intentional attention of children 6 - 9 years old mild mental retardation with confidence 0.05, with the survey results as follows: (1). Concentration of attention (2.49 points); (2). Sustainability in attention (2.13 points); (3). Distribution in attention (2.23 points); (4). Movements in attention (2.34 points) and are all rated at "low". The concentration of attention status: The ability to pay attention is not scattered, disturbed by other unrelated stimuli with M = 2.05 of low level. This is also the most difficult ability for children with mental retardation because they are easily attracted to other stimuli. Sustainability in attention status: Sustainability of attention gradually decreases over time, it can be seen that after 7 minutes, stability appears, specifically in the first 3 - 5 minutes most children can maintain attention at Low (37.7 %) and Medium (27.4 %). Distribution in attention status: In all 5 expressions of distribution in attention when investigated, they were low, but it can be seen that the distribution of attention has higher intentionality than that of no intention. Movements in attention status: When there are clear commands / requests, the mental retardation children's movements in attention will be higher than those without. There was no significant difference when there was a change between factors such as class hours and learning activities (Figure 1).

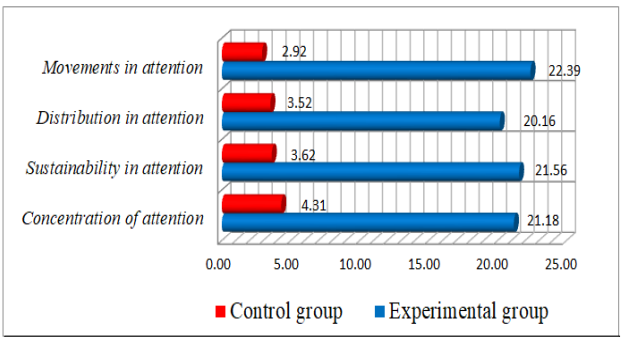

Figure 1. Comparison of the Improvement (%) of Intentional Attention Attributes in the Experimental Group and Control - after

Through (Figure 1), shows that the attributes of intentional attention of children in the experimental group have increased (20.16 % - 22.39 %) compared to the control group. This proves that the experimental program was effective in improving intentional attention in mild mental retardation children aged 6 - 9 years. To demonstrate the effectiveness of selected physical activities in improving the intentional attention of 6 - year-old children with mild mental retardation at Mekong Delta after physical activities experiment, this study tests the overall GPA of the evaluation attributes of intentional attention at Mekong Delta. EG and CG before and after the experiment (Table 2).

No.	Properties	EG (n = 75)		CG (n = 71)		T	P
		M	SD	M	SD		
			Before experiment				
1	Concentration of attention	2.49	0.35	2.5	0.41	0.35	> 0.05
2	Sustainability in attention	2.11	0.43	2.2	0.23	1.53	> 0.05
3	Distribution in attention	2.23	0.41	2.2	0.16	0.08	> 0.05
4	Movements in attention	2.38	0.33	2.4	0.43	0.93	> 0.05
			After experiment				
1	Concentration of attention	3.08	0.55	2.6	0.42	5.88	< 0.05
2	Sustainability in attention	2.62	0.5	2.3	0.27	4.42	< 0.05
3	Distribution in attention	2.73	0.78	2.3	0.55	3.45	< 0.05
4	Movements in attention	2.98	0.69	2.4	0.78	3.92	< 0.05

Table 2. Comparison of Average Scores of Intentional Attention in the Experimental Group and Control - After Experiment.

Table 2 shows that, before the experiment, overall GPA, all attributes assessing the intentional attention ability of EG and CG have differences but not statistically significant t = 0.93 – 1.53, with p>0.05. Therefore, it can be said that the ability of intentional attention in EG and CG is relatively similar before the experiment.

After experiment: Concentration of attention (score): M EG = 3.08 points, MCG = 2.62 points, difference 0.46 points, with t = 5.88, reliability P < 0.05; Sustainability in attention (score): MEG = 2.62 points, MCG = 2.28 points, difference 0.34 points, with t = 4.42, P < 0.05; Distribution in attention (score): MEG = 2.73 points, MCG = 2.31 points, difference 0.42 points, with t = 3.45, P < 0.05; Movements in attention (score): MEG = 2.98 points, MCG = 2.43 points, difference 0.55 points, with t = 3.92, P < 0.05. In summary: After 10 months of experimentation, the overall GPA scores of all attributes assessing the intentional attention of mild mental retardation children 6 - 9 years old.

The experimental group and the control group after the experiment were different and statistically significant. With t = 3.45 – 5.88, reliability P < 0.05. Thus, physical activities applied in the experiment program brought about changes in the direction of improving the intentional attention ability of mild mental retardation children 6 - 9 years old.

Evaluation of the Impact of Experimental Physical Activities on the Fitness Improvement of 6 - 9 – Year - Old Children with Mild Mental Retardation

Results of children's physical fitness test after the experiment to evaluate the impact of physical activities, this study was selected to compare the test results of the experimental and control groups before and after the experiment. This is a parallel assessment result because we believe that the intentional attention development of mild mental retardation children influences the learning and training process. That is reflected in the results of changes in children's physical fitness. The results are presented in Table 3 (female group) and Table 4 (male group).

No.	Ages	Tests	EG				CG			
			M	SD	Cv	P	M	SD	Cv	P
1		Handgrip test right. (kg)	6.9	0.6	8.1	0.05	6.8	0.38	7.7	0.03
2		Standing long jump (cm)	69	4.2	6	0.05	66	4.13	6.3	0.04
3		Forward bend sitting posture (cm)	- 1	0.1	5.4	0.05	-3.7	0.24	6.8	0.05
4	6	Shuttle run 4 x 10 m (s)	20	1.4	7.3	0.05	20	1.25	6.4	0.05
5	(EG, n = 8)	One - leg standing balance (s)	8.1	0.4	4.9	0.04	5.3	0.36	6.5	0.03
6	(CG, n = 10)	Throw a ball at a target (time)	4	0.2	4.7	0.05	2.8	0.21	5.8	0.05
1		Handgrip test right. (kg)	7.2	0.5	6.5	0.05	7.3	0.51	7.1	0.05
2		Standing long jump (cm)	73	5.3	7.3	0.05	65	3.12	4.8	0.04
3		Forward bend sitting posture (cm)	- 3	0.2	7.6	0.05	- 4	0.15	4	0.03
4	7	Shuttle run 4 x 10 m (s)	19	1.3	6.5	0.05	19	1.36	7.1	0.05
5	(EG, CG, n = 10)	One-leg standing balance (s)	7.3	0.5	6.9	0.05	5.5	0.42	7.7	0.05
6		Throw a ball at a target (time)	3.9	0.2	6.2	0.05	2.7	0.17	6.6	0.05
1		Handgrip test right. (kg)	7.3	0.4	5.9	0.05	7.1	0.48	6.9	0.05
2		Standing long jump (cm)	76	5.6	7.3	0.05	64	3.27	5.1	0.04
3		Forward bend sitting posture (cm)	- 4	0.2	5.2	0.04	- 4.4	0.32	7.7	0.05
4	8	Shuttle run 4 x 10 m (s)	19	1.2	6.2	0.05	19	1.16	6	0.04
5	(EG, n = 9; CG, n = 8)	One - leg standing balance (s)	8.4	0.6	7.4	0.05	5.8	0.37	6.5	0.05
6		Throw a ball at a target (time)	5.1	0.4	7	0.05	3.6	0.18	5.3	0.05
1		Handgrip test right. (kg)	8.5	0.8	9.6	0.05	8.4	0.7	8.4	0.05
2		Standing long jump (cm)	75	3.7	4.4	0.05	68	4.63	6.8	0.05
3	9	Forward bend sitting posture (cm)	- 6	0.4	6.5	0.04	- 6.2	0.33	5.4	0.04
4	(EG, n = 8; CG,n = 7)	Shuttle run 4 x 10 m (s)	20	1.4	7.2	0.05	19	1.3	6.9	0.05
5		One - leg standing balance (s)	8	0.5	6	0.04	5.2	0.38	7.4	0.05
6		Throw a ball at a target (time)	5	0.3	6.2	0.05	3.7	0.2	5.6	0.05

Table 3. Results of Physical Fitness Test of Female Eg and Cg after the Experiment.

No.	Ages	Tests	EG				CG			
			M	SD	Cv	P	M	SD	Cv	P
1		Handgrip test right. (kg)	7.6	0.41	5.51	0	7.69	0.44	5.81	0.04
2		Standing long jump (cm)	70.22	4.12	5.85	0	64.2	4.75	7.11	0.05
3	6	Forward bend sitting posture (cm)	- 2.38	0.16	7.05	0	- 2	0.12	6.47	0.05
4	(EG, n = 10; CG,n = 9)	Shuttle run 4 x 10 m (s)	20.49	1.3	6.37	0.1	21.8	1.5	7.34	0.05
5		One - leg standing balance (s)	7.52	0.33	4.5	0	6.09	0.26	4.39	0.03
6		Throw a ball at a target (time)	4.62	0.18	4.1	0	3.42	0.24	7.24	0.05
1		Handgrip test right. (kg)	8.08	0.45	5.68	0	8.02	0.91	11.4	0.05
2		Standing long jump (cm)	75.02	5.06	6.73	0.1	72.1	4.58	6.33	0.05
3		Forward bend sitting posture (cm)	- 2.08	0.11	5.68	0	- 3.3	0.18	7.53	0.04
4	7	Shuttle run 4 x 10 m(s)	20.25	0.92	4.57	0	20.2	2.3	11.4	0.05
5	(EG, n = 10; CG,n = 8)	One - leg standing balance (s)	7.91	0.4	5.17	0	5.85	0.66	11.4	0.05
6		Throw a ball at a target (time)	4.92	0.45	7.32	0.1	3.86	0.18	4.87	0.04
1		Handgrip test right. (kg)	8.32	0.58	7.08	0.1	8.24	0.82	10	0.05
2		Standing long jump (cm)	81.02	7.41	9.13	0.1	72.1	7.54	10.4	0.05
3		Forward bend sitting posture (cm)	- 3.38	0.26	7.91	0.1	- 3.9	0.3	7.92	0.05
4	8	Shuttle run 4 x 10 m(s)	19.68	1.24	6.33	0.1	19.6	1.94	9.92	0.04
5	(EG,CG,n = 10)	One leg standing balance (s)	8.42	0.52	6.28	0.1	5.98	0.36	4.01	0.03
6		Throw a ball at a target (time)	5.34	0.23	4.48	0	4.16	0.41	10	0.05
1		Handgrip test right. (kg)	8.18	0.44	5.48	0	8.08	0.57	7.13	0.05
2		Standing long jump (cm)	80.55	5.17	6.4	0	77.1	7.33	9.49	0.05
3		Forward bend sitting posture (cm)	- 4.48	0.27	6.19	0.1	- 5.6	0.28	5.2	0.04
4	9	Shuttle run 4 x 10 m(s)	18.89	2.04	10.83	0.1	19	1.45	7.64	0.05
5	(EG, n = 10;CG, n = 9)	One-leg standing balance (s)	8.12	0.75	9.35	0.1	5.68	0.48	8.57	0.03
6		Throw a ball at a target (time)	5.22	0.37	7.28	0.1	3.88	0.37	9.71	0.05

Table 4. Results of Physical Fitness Test of Male EG and CG after the Experiment.

To confirm more clearly the effect of physical activities on physical fitness development of children 6 - 9 years old mild mental retardation, the study compared the growth rate of overall GPA of physical fitness assessment tests of EG and CG after the experiment (see Table 5). Experimental results also show that the physical fitness of children 6 - 9 years old with mild mental retardation has a positive change. After testing the best growth results in EG were Throw a ball at a target (time) and One - leg standing balance (s). Compared to before the experiment, both CG and EG had an improvement in physical fitness; in which the improvement of EG is shown by growth rate with statistically significant values (females increase 6.36 to 55.61; males 4.84 to 52.03), while CG with improvement is not statistically significant (females 5.50 to 25.48; males 3.52 to 26.71) (Figures 2,3).

TEST	EG			CG		
Females	M_1	M_2	W %	M_1	M_2	W %
Handgrip test right (kg)	7	7.5	6.4	6.99	7.4	5.5
Standing long jump (cm)	58	73	24	57.2	66	14
Forward bend sitting posture (cm)	- 5	- 3.4	- 44	- 5.65	- 4.6	- 21
Shuttle run 4 x 10 m(s)	21	19	- 8	20.8	19	- 7.6
One - leg standing balance (s)	4.7	8	51	4.64	5.5	17
Throw a ball at a target (time)	2.5	4.5	56	2.46	3.2	25
Males	M_1	M_2	W %	M_1	M_2	W %
Handgrip test right. (kg)	7.5	8.1	7.7	7.52	8	6.3
Standing long jump (cm)	67	77	14	66.7	71	6.7
Forward bend sitting posture (cm)	- 5	- 3.1	- 47	- 4.75	- 3.7	- 25
Shuttle run 4 x 10 m(s)	21	20	- 5	20.9	20	- 3.5
One - leg standing balance (s)	4.7	8	52	4.62	5.9	24
Throw a ball at a target (time)	3	5	50	2.93	3.8	26

Table 5. The Growth Physical Fitness of Children's Overall Gpa after the Experiment of Males and Females Eg, Cg.

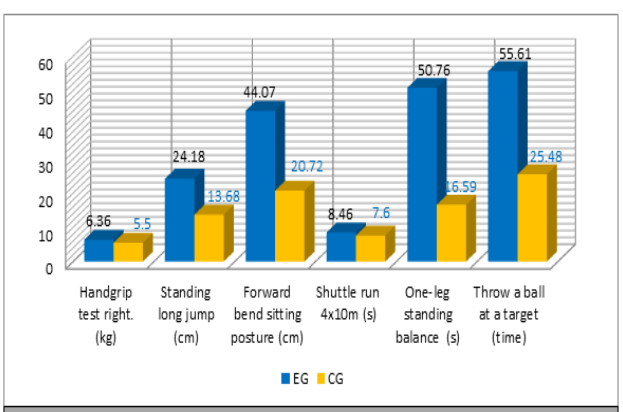

Figure 2. Physical Fitness Growth of EG and CG Females after the Experiment.

The results of this study show that physical activities are selected suitable for children and create excitement, in which the goals and requirements associated with the attribute of attention are identified as the basic importance; the physical activities are based on the child's motor abilities and by active participation in these physical activities a dual effect is established.[7]

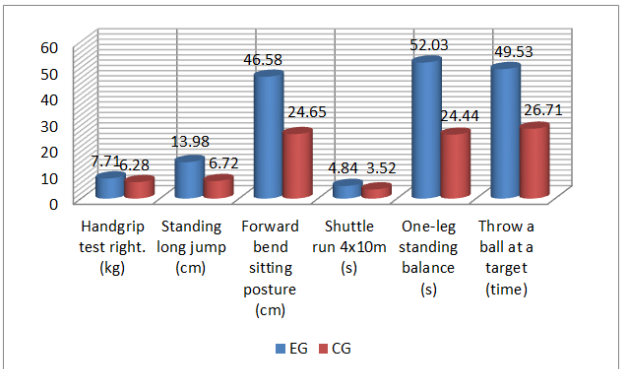

Figure 3. Physical Fitness Growth of EG and CG Males after the Experiment.

The results of this study show that physical activities are selected suitable for children and create excitement, in which the goals and requirements associated with the attribute of attention are identified as the basic importance; the physical activities are based on the child's motor abilities and by active participation in these physical activities a dual effect is established.

Experimental results on the impact of physical activities on improving children's intentional attention ability show that, through selected physical activities, children aged 6 - 9 years old, mild mental retardation have a clear change in intentional attention after the experiment. Before the experiment, the child's ability to intentional attention had a low level of M=2.08, after the experiment M = 2.58 was at an average level, and the T - Test showed a statistically significant difference (0.03 > 0.05). Considering that there was a change in the 4 manifestations of intentional attention ability, before the experiment 4 expressions were low, after the experiment, they all increased to the average level, the T - Test in all 4 expressions showed positive results. Statistical significance, reliability P < 0.05.[8]

DISCUSSION

The results of this study insist on the effect of physical activities application on the improvement of intentional attention and positive physical fitness of children 6 - 9 years old. Post - experimental assessment, both female and male groups improved with the criterion of intentional attention in the experimental group increasing by 20.16 % - 22.39 %, with 06 tests to assess physical fitness with the impact that this study selected, selected increased compared to before the experiment. Among them, the best growth results in EG are Throw a ball at a target (time) and One - leg standing balance (s). Compared to before the experiment, both CG and EG had an improvement in physical fitness; where the improvement of EG is shown by growth rate with statistically significant values (females increase 6.36 to 55.61; males 4.84 to 52.03), CG with improvement is not statistically significant (females increase) 5.50 to 25.48; males 3.52 to 26.71). The results of this study have stated that the use of physical activities is suitable for children aged 6 - 9, mild mental retardation, in Mekong delta, Vietnam. As a result, a scientific basis helps teachers and experts as a basis for reference and application in teaching, a premise for further research on children's mental retardation.[9]

CONCLUSION

This result is the combination of qualitative and quantitative research results shows that physical activities can effectively affect both physical fitness and intentional attention ability of children 6 - 9 years old, mild mental retardation because physical activities are selected according to the orientation matrix, on the attributes and criteria for assessing the child's mental retardation ability with the content and form of physical activities. In which physical activities are solving the requirements of familiar and repetitive motor tasks, ensuring strict norms to ensure the principle of right goals and effectiveness to improve function, serving the learning and training to promote the efforts of consciousness in children as a basis to contribute to the development of intentional attention ability.[10] The results of assessing the improvement of intentional attention ability of children 6 - 9 years old mild mental retardation after the experiment had a positive change. Comparison with normal children in Vietnam shows that the attention ability of mild mental retardation children is lower due to limitations in language and social skills. By quantitative results through comparison of mean values before and after the experiment combined with qualitative results through observation, children have significantly improved in the attributes of concentration of attention and sustainability in attention. The use of appropriate physical activities to develop children's minds mental retardation is a teaching method in the form of direct visualization that is very necessary and appropriate in the process of educating and nurturing children.[11] Basic forms of movement such as walking, running, jumping, throwing, catching will help the child's functional transformation process always be at the necessary level, by the requirements of maintaining health, improving the health physical fitness, perfecting motor skills. The content of basic gymnastics has simple natural movements (walking, running, jumping, throwing, and catching). The selection of physical activities in the form of physical exercise should pay attention to the simulation of images that are familiar to children to create excitement and increase their attention.[12] The combination of qualitative and quantitative research results shows that physical activities can effectively affect both physical fitness and intentional attention of children 6 - 9 years old, mild mental retardation because physical activities are selected according to an orientation matrix about attributes and evaluation criteria for children's mental retardation with the content and form of physical activities. In which physical activities are solving the requirements of familiar and repetitive motor tasks, ensuring strict norms to ensure the principle of right goals and effectiveness to improve function, serving the learning and training to promote the efforts of consciousness in children as a basis to contribute to the development of intentional attention. The results of this study are consistent with the results of (Lam T M, 2020) research with children in Ho Chi Minh City, Vietnam.

REFERENCES

1. Chiviacowsky S, Wulf G, Avila L T G. An external focus of attention enhances motor learning in children with intellectual disabilities. J Intellect Disabil Res 2013;57(7):627-634.
2. DSM - IV: Diagnostic and Statistical Manual of Mental Disorders 4th edition. Am J Psychiatry 1997.
3.Elisabeth M Dykes. Exercise and Sports in Children and Adolescents with Developmental Disabilities: Positive Physical and Psychosocial Effects. Child Adolesc Psychiatr Clin N Am 1998;7(4):757-771.
4. Golubovic S, Maksimovic J, Golubovic B, et al. Effects of exercise on physical fitness in children with intellectual disability. Res Dev Disabil 2012;33(2):608-614.
5. Khalili M A, Elkins M R. Aerobic exercise improves lung function in children with intellectual disability: a randomised trial. Aust J Physiother 2009;55(3):171-175.
6. Arthur F. Kramer Sowon Hahn, et al. Ageing, fitness and neurocognitive function. Nature 1999;400:418–419.
7. Kramer AF, Hahn S, Gopher D. Task coordination and aging: explorations of executive control processes in the task switching paradigm.
Acta Psychologica 1999;101(23):339-378.
8. Lotan M, Isakov E, Kessel S, et al. Physical fitness and functional ability of children with intellectual disability: Effects of a short-term daily treadmill intervention. Sci World J 2004;4:449–457
9. Myer G D, Faigenbaum A D, Edwards N M, et al. Sixty minutes of what? A developing brain perspective for activating children with an integrative exercise approach. Br J Sports Med 2015;49:1510-1516.
10. Javan A T, Framarzi S, Abedi A, et al. Effectiveness of Rhythmic play on the Attention and Memory functioning in Children with Mild Intellectual Disability (MID). Int lett soc humanist sci 2014;6:9-21.
11. Petter Stromme, Gudrun Hagberg. Aetiology in severe and mild mental retardation: a population-based study of Norwegian children. Dev Med Child Neurol 2000;42(2):76–86.
12. Lam TM (2020) Study on selection of physical exercises to improve intentional attention of children with mild mental retardation in Ho Chi Minh City, Vietnam, Doctoral Thes is of education, Ha Noi (In Vietnamese).