Journal of Informatics Education and Research
ISSN: 1526-4726
Vol 4 Issue 1 (2024)

Engaging In Physical Activities Enhances the Intentional Attention Span and Physical Fitness of Children with Mild Mental Impairment

Dao Chanh Thuc

An Giang University, Vietnam National University, Ho Chi Minh City, Vietnam
* Email: dcthuc@agu.edu.vn

Abstract

In order to examine the intentional attention status of children aged 6 to 9 with minor mental retardation in the Mekong Delta of Vietnam, the study identified four criteria and six tests that measured the physical fitness of these children at low and near-medium levels. As a result, 16 physical activities from two groups were used experimentally in the study. Group 1 focuses on physical fitness, which includes exercises on fundamental motor abilities; Group 2 uses movement games to develop the children's purposeful attention span and physical fitness. Research on implementing specific physical exercises in accordance with programs for kids aged 6 to 9 who have minor mental retardation was conducted at several Mekong Delta specialty schools for a period of ten months. The findings demonstrate that children with minor mental impairments have improved in their deliberate attention, their capacity to focus their attention, and their attention sustainability. All ages' physical fitness has increased. But while doing the chosen physical activities, the experimental group fared better in the following tests than the control group did: In alternative assessments, the test group surpassed the control group, exhibiting superior performance in various activities, such as the standing long jump (centimeters), one-legged standing balance (seconds), targeting a ball throw (time), and the seated forward bend posture (centimeters) in a nine-year-old girl.

Keywords: exercise, deliberate focus, level of physical fitness, mental retardation, fitness

Introduction

Education for children's attention development At the moment, mental retardation is solely linked to educational endeavors aimed at fostering the development of other cognitive functions, including feeling, seeing, and reasoning. [1]. To enhance a child's proficiency in IA and specifically address cognitive challenges, it is essential to offer them positive engagements through educational activities. Consistently reshaping their cognitive processes and endeavors, promoting the development of their thinking, and ensuring overall well-being are crucial for improving both IA skills and mitigating potential mental challenges in children.

Children that suffer from moderate mental retardation are unique individuals who have numerous limits in their abilities, including language, communication, and most importantly, attention span. [2], [11]. Consequently, practicing physical activities with kids who have mild mental retardation not only improves their health and motor abilities but also helps them focus their attention, which helps them develop IA. Thus, it can be concluded that children aged 6 to 9 who have slight mental impairment can benefit from physical activities in terms of their IA ability.

Using suitable physical activities to support the intellectual development of children with mental retardation is a highly essential and acceptable teaching strategy in the process of raising and educating children. This is known as direct visualization. [9], [1], and [3]. When a kid engages in fundamental movement activities such as walking, running, leaping, throwing, and catching, their functional transformation process will always be at the necessary level to maintain health, enhance physical strength, and perfect motor abilities. Engaging in physical activities fosters children's independence, mental stimulation, improved learning, improved cognitive function, and improved social and communication skills. The author has synthesized and selected 40¯physical activities based on the psychophysiological characteristics, the purpose and objectives

of the study, references, the characteristics of children with mild mental retardation aged 6 to 9, and their motor ability in order to improve their IA ability. It takes a fundamentally fit stance when discussing physical exercise. This is a well-liked approach to increasing fitness that has a very rich and diverse shape and content. The core skills of basic gymnastics include simple natural motions like walking, running, leaping, throwing, and catching. The selection of physical exercises should take into account the reproduction of familiar images in order to captivate and concentrate youngsters.

Techniques.

146 children with minor mental retardation, ages 6 to 9, were randomly assigned to one of two groups for the study: 75 people made up the experimental group (40 men and 35 women); 71 people made up the control group (36 men and 35 women).

After compiling forty physical activities from diverse sources using a methodology appropriate for the study's goals and objectives, the research object's characteristics were examined through two interviews, and 16 physical activities were chosen with a confidence level of 0.05 to be included in the application. Including two groups: one for group exercise and the other for experimental group movement games.

The following are the outcomes of choosing physical activities to enhance the intentional attention capacity of children in the Mekong Delta who have minor mental impairment and are 6 to 9 years old: a thorough survey, expert opinion, and 16 out of 40 exercises Only select exercises with a rate of ≥ 80% agreement in two interviews, as indicated by Table 1, based on the outcomes of two interviews in accordance with the stated principle.

Table 1 shows the outcomes of choosing physical activities based on expert interviews to enhance the intentional attention of children in the Mekong Delta, aged 6 to 9, who have minor mental impairment.

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

The author first chooses 16 physical activities, and then she creates a thorough experimental schedule that spans 35 weeks, or 10 months. After a period of ten months of testing, the efficacy of the chosen workouts will be assessed. Time: June 25, 2020–September 20, 2019 Training sessions are held three times a week for fifteen minutes each.Weeks 1 through 25 experimented with group workouts, whereas weeks 26 through 35 carried out group game exercises.

Result.

Evaluation of kids' deliberate focus, ages six to nine Expert and teacher interviews were used to assess children with mild mental impairments in terms of their attention and concentration levels. The five levels were associated with three distinct presentations. The findings in Table 2 show that the children's concentration of attention is at a low level (2.49 points), with varied values for each concentration of attention feature. The ability to focus attention within a limited range is the biggest measure (2.73 points); the ability to focus attention just on one or a small number of necessary items is the second highest measure (2.62 points), at a medium level. The average score for the capacity to focus without being sidetracked or agitated by unimportant stimuli is low (2.05 points). The attention status of children with mild mental disorders was maintained, and this was determined by polling teachers and specialists alike. There were five voting levels, each of which stood for one of the five distinct shapes. The ability to maintain focus for one to three minutes receives the highest average score (2.45 points). The capacity to maintain focus for three to five minutes (2.25 points) and for seven to seven minutes (2.20 points) comes next. There were five distinct kinds reflected by the usage of assimilating. The ability to maintain focus for one to three minutes has the highest average score (2.45 points), followed by capacity. The average score for the capacity to stay focused for seven to ten minutes is quite low (1.91 points). The findings show that, at a low level, the average sustainability score in attention is 2.13. The results also show that, with time, sustainability receives less attention. According to the DSM-IV classification of mental illness in children [2], [11], the intellectual quotient, or IQ, is used to categorize the severity of mental illness. There are four categories of mental retardation: The IQ ranges for severe mental retardation are 35–40 to 50–55, and for mild mental disability, they are 50–55 to around 70. A 20–25 IQ range denotes very serious mental impairment, whereas a 20–25 IQ range denotes severe mental retardation. The study has selected four criteria, with a significance level of 0.05, to assess the intentional attention of children with mild mental impairment between the ages of six and nine. The following are the survey's findings: All of the following have a "low" grade: Four points are awarded: (1) distribution (2.23), (2) sustainability (2.13), (3) attention concentration (2.49), and (4) movements (2.34). The condition of focused attention: The ability to pay attention is not scattered or interfered with by irrelevant stimuli when M = 2.05 is low. This is the most difficult ability for children with mental impairments because of their increased resistance to external stimuli. Sustainability as a focal point: The ability to maintain focus gradually deteriorates over time; stability is apparent after 7 minutes. The majority of children can maintain attention at low (37.7%) and medium (27.4%) levels for the first three to five minutes. Distribution based on attentional state: The intentionality of the attention distribution is clearly higher than that of the no-intention distribution, despite the fact that all five of the attention distribution expressions tested were low. Attentional shifts: Children with mental disabilities will shift their focus more when they receive clear instructions or requests than when they don't. There was no noticeable difference when factors like class schedules and learning activities were altered.

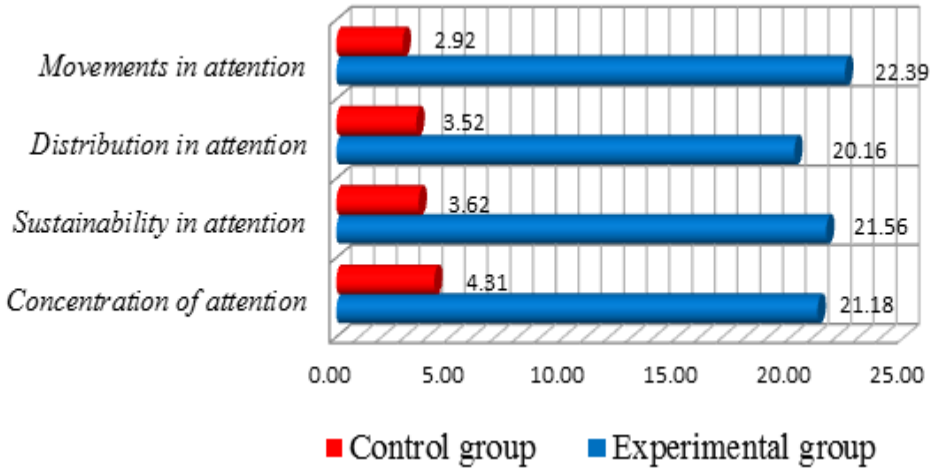

Chart 1. Comparison of the improvement (%) of intentional attention attributes in the experimental group and control-after experiment group.

The first chart in the study illustrates the growth in purposeful attention qualities of children in the EG compared to the CG. The data shows an increase from 20.16% to 22.39% in the purposeful attention qualities of the children in the experimental program. This indicates that the implemented experimental program has been successful in helping children with minor mental disabilities, specifically those aged 6 to 9, to improve their ability to pay attention to a purpose.

The research additionally investigates the comprehensive GPA of the assessment factors linked to deliberate focus in the Mekong Delta area. The objective is to illustrate how meticulously chosen physical exercises can boost the deliberate attention of 6-year-old children with mild cognitive challenges following their engagement in these activities. This analysis encompasses both the CG and EG at various points before and after the examination. The aim is to evaluate the influence of the physical activities on intentional attention and the extent to which the selected activities contribute to enhancing deliberate attention in 6-year-old children with mild cognitive challenges in the Mekong Delta region. The overall GPA is likely used as a comprehensive measure, taking into account various attributes related to intentional attention in the evaluation. The comparison between CG and EG before and after the test provides insights into the effectiveness of the implemented program in enhancing intentional attention qualities in the targeted group of children.

Table 2. Comparison of the experimental group's and the control group's average intentional attention scores following the experiment.

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	*Distribution in attention*	2.23	0.41	2.23	0.16	0.08	> 0.05
3	*Movements in attention*	2.38	0.33	2.36	0.43	0.93	> 0.05
4	*Sustainability in attention*	2.11	0.43	2.17	0.23	1.53	> 0.05
	After experiment						
1	*Concentration of attention*	3.08	0.55	2.61	0.42	5.88	< 0.05
2	*Distribution in attention*	2.73	0.78	2.31	0.55	3.45	< 0.05
3	*Movements in attention*	2.98	0.69	2.43	0.78	3.92	< 0.05
4	*Sustainability in attention*	2.62	0.5	2.25	0.27	4.42	< 0.05

Table 2 demonstrates that prior to the experiment, there were variations in all variables measuring EG and CG's deliberate attention capacity, although none of them were statistically significant. $p>0.05$, $t = 0.93–1.53$. Thus, it may be concluded that prior to the experiment, EG and CG had comparatively equal capacities for purposeful attention. Following the experiment: The attentional concentration score is as follows: M EG = 3.08 points, M CG = 2.62 points, difference 0.46 points, with $t = 5.88$, reliability $P<0.05$; the sustainability score is as follows: M EG = 2.62 points, M CG = 2.28 points, difference 0.34 points, with $t = 4.42$, $P<0.05$; the distribution score is as follows: M EG = 2.73 points, M CG = 2.31 points, difference 0.42 points, with $t = 3.45$, $P<0.05$; the movements score is as follows: M EG = 2.98 points, M CG = 2.43 points, difference 0.55 points, with $t = 3.92$, $P<0.05$. In conclusion, over a 10-month period of testing, there was a statistically significant difference between the experimental group's and the control group's total GPA scores for all aspects measuring the intentional attention of children aged 6 to 9 with mild mental impairment. $P < 0.05$ for dependability, with $t = 3.45–5.88$. As a result, the physical activities included in the trial program improved the capacity of children aged 6 to 9 with minor mental impairments to pay attention on purpose. An assessment of how experimental physical activities affected the fitness gains of

children aged 6 to 9 who had a minor mental disability. The results of the children's physical fitness test conducted after the experiment were compared to the test results of the experimental and control groups before and after the experiment in order to assess the effects of physical activity. This is a parallel evaluation result because we think that children with moderate mental impairments who intentionally enhance their attention have an impact on training and learning. The outcomes of variations in kids' physical fitness show that. Tables 3 (female group) and 4 (male group) show the results.

The study aimed to compare the growth rate of the total GPA of physical fitness assessment tests between an experimental group (EG) and a control group (CG) after an experiment. The focus was on understanding the impact of physical activities on the development of physical fitness in children aged 6 to 9 with moderate mental retardation. The findings indicate that both the experimental group (EG) and the control group (CG) showed improvement in physical fitness after the experiment. However, the improvement in the EG is considered statistically significant, as indicated by the growth rate values. Specifically, one-leg standing balance (s) and throwing a ball at a target (time) were highlighted as having the best growth outcomes in the EG.

The positive development in physical fitness was observed not only in children with moderate mental retardation but also in those with slight mental impairment within the age range of 6 to 9. The growth rate values for EG, especially for females (6.36 to 55.61) and males (4.84 to 52.03), showed statistically significant improvement. On the other hand, the improvement in the control group was not statistically significant, with growth rate values for females increasing from 5.50 to 25.48 and for males from 3.52 to 26.71.

Table 3. Results of physical fitness test of female EG and CG after the experiment

Ages	Tests	EG				CG				Ages	EG				CG			
		M	*SD*	*Cv*	*P*	*M*	*SD*	*Cv*	*P*		*M*	*SD*	*Cv*	*P*	*M*	*SD*	*Cv*	*P*
6 (EG, n=8) (CG, n=10)	*Handgrip test right. (kg)*	6.90	0.55	8.08	0.05	6.76	0.38	7.72	0.03	8 (EG, n=9; CG, n=8)	7.26	0.42	5.89	0.05	7.1	0.48	6.85	0.05
	Standing long jump (cm)	69.37	4.16	5.99	0.05	65.58	4.13	6.28	0.04		76.29	5.57	7.29	0.05	63.53	3.27	5.13	0.04
	Forward bend sitting posture (cm)	-1.11	0.05	5.43	0.05	-3.68	0.24	6.80	0.05		-4.00	0.20	5.24	0.04	-4.4	0.32	7.68	0.05
	Shuttle run 4x10m (s)	19.61	1.43	7.32	0.05	19.67	1.25	6.37	0.05		19.25	1.18	6.16	0.05	19.38	1.16	6.00	0.04
	One-leg standing balance (s)	8.14	0.39	4.89	0.04	5.33	0.36	6.49	0.03		8.37	0.61	7.38	0.05	5.83	0.37	6.47	0.05
	Throw a ball at a target (time)	3.99	0.18	4.73	0.05	2.78	0.21	5.76	0.05		5.10	0.35	7.03	0.05	3.55	0.18	5.29	0.05
7 (EG, CG, n=10)	*Handgrip test right. (kg)*	7.20	0.46	6.5	0.05	7.25	0.51	7.12	0.05	9 (EG, n=8; CG,n=7)	8.50	0.81	9.62	0.05	8.42	0.70	8.38	0.05
	Standing long jump (cm)	72.62	5.33	7.33	0.05	65.41	3.12	4.75	0.04		75.10	3.71	4.42	0.05	67.65	4.63	6.83	0.05
	Forward bend sitting posture (cm)	-2.89	0.21	7.62	0.05	-4.02	0.15	3.97	0.03		-5.57	0.35	6.47	0.04	-6.24	0.33	5.44	0.04
	Shuttle run 4x10m (s)	19.30	1.25	6.51	0.05	19.28	1.36	7.07	0.05		19.60	1.40	7.17	0.05	18.84	1.30	6.92	0.05
	One-leg standing balance (s)	7.33	0.50	6.93	0.05	5.54	0.42	7.70	0.05		8.00	0.47	5.97	0.04	5.23	0.38	7.40	0.05
	Throw a ball at a target (time)	3.87	0.23	6.17	0.05	2.68	0.17	6.64	0.05		4.99	0.30	6.18	0.05	3.69	0.20	5.63	0.05

Table 4. Results of physical fitness test of male EG and CG after the experiment

Ages	Tests	EG				CG				Ages	EG				CG			
		M	*SD*	*Cv*	*P*	*M*	*SD*	*Cv*	*P*		*M*	*SD*	*Cv*	*P*	*M*	*SD*	*Cv*	*P*
6 (EG, n=10; CG,n=9)	*Handgrip test right. (kg)*	7.60	0.41	5.51	0.04	7.69	0.44	5.81	0.04	8 (EG,CG, n=10)	8.32	0.58	7.08	0.05	8.24	0.82	10.02	0.05
	Standing long jump (cm)	70.22	4.12	5.85	0.04	64.2	4.75	7.11	0.05		81.02	7.41	9.13	0.05	72.11	7.54	10.44	0.05
	Forward bend sitting posture (cm)	-2.38	0.16	7.05	0.04	-2.02	0.12	6.47	0.05		-3.38	0.26	7.91	0.05	-3.92	0.30	7.92	0.05
	Shuttle run 4x10m (s)	20.49	1.30	6.37	0.05	21.79	1.50	7.34	0.05		19.68	1.24	6.33	0.05	19.58	1.94	9.92	0.04
	One-leg standing balance (s)	7.52	0.33	4.50	0.03	6.09	0.26	4.39	0.03		8.42	0.52	6.28	0.05	5.98	0.36	4.01	0.03
	Throw a ball at a target (time)	4.62	0.18	4.10	0.03	3.42	0.24	7.24	0.05		5.34	0.23	4.48	0.03	4.16	0.41	10.02	0.05
7 (EG, n=10; CG,n=8)	*Handgrip test right. (kg)*	8.08	0.45	5.68	0.04	8.02	0.91	11.41	0.05	9 (EG, n=10;CG, n=9)	8.18	0.44	5.48	0.04	8.08	0.57	7.13	0.05
	Standing long jump (cm)	75.02	5.06	6.73	0.05	72.09	4.58	6.33	0.05		80.55	5.17	6.40	0.04	77.05	7.33	9.49	0.05
	Forward bend sitting posture (cm)	-2.08	0.11	5.68	0.04	-3.32	0.18	7.53	0.04		-4.48	0.27	6.19	0.05	-5.57	0.28	5.20	0.04
	Shuttle run 4x10m (s)	20.25	0.92	4.57	0.03	20.2	2.30	11.39	0.05		18.89	2.04	10.83	0.05	19.02	1.45	7.64	0.05
	One-leg standing balance (s)	7.91	0.40	5.17	0.04	5.85	0.66	11.38	0.05		8.12	0.75	9.35	0.05	5.68	0.48	8.57	0.03
	Throw a ball at a target (time)	4.92	0.45	7.32	0.05	3.86	0.18	4.87	0.04		5.22	0.37	7.28	0.05	3.88	0.37	9.71	0.05

Figures 2 and 3 are referenced for additional visual representations of the data and results. Overall, the study suggests that the implemented physical activities had a positive and statistically significant impact on the physical fitness development of children with moderate mental retardation, emphasizing the potential benefits of such interventions.

Table 5. The enhancement of children's holistic GP in physical fitness following the experimentation involving both male and female participants in the EG and CG.

TEST		EG			CG	
Females	M_1	M_2	W%	M_1	M_2	W%
Handgrip test right. (kg)	7.01	7.47	6.36	6.99	7.38	5.50
Standing long jump (cm)	57.53	73.35	24.18	57.15	65.54	13.68
Forward bend sitting posture (cm)	-5.31	-3.39	-44.07	-5.65	-4.59	-20.72
Shuttle run 4x10m (s)	21.16	19.44	-8.46	20.82	19.29	-7.60
One-leg standing balance (s)	4.74	7.96	50.76	4.64	5.48	16.59
Throw a ball at a target (time)	2.54	4.49	55.61	2.46	3.18	25.48
Males	M_1	M_2	W%	M_1	M_2	W%
Handgrip test right. (kg)	7.45	8.05	7.71	7.52	8.01	6.28
Standing long jump (cm)	66.68	76.70	13.98	66.73	71.36	6.72
Forward bend sitting posture (cm)	-4.95	-3.08	-46.58	-4.75	-3.71	-24.65
Shuttle run 4x10m (s)	20.81	19.83	-4.84	20.87	20.15	-3.52
One-leg standing balance (s)	4.69	7.99	52.03	4.62	5.90	24.44
Throw a ball at a target (time)	3.03	5.03	49.53	2.93	3.83	26.71

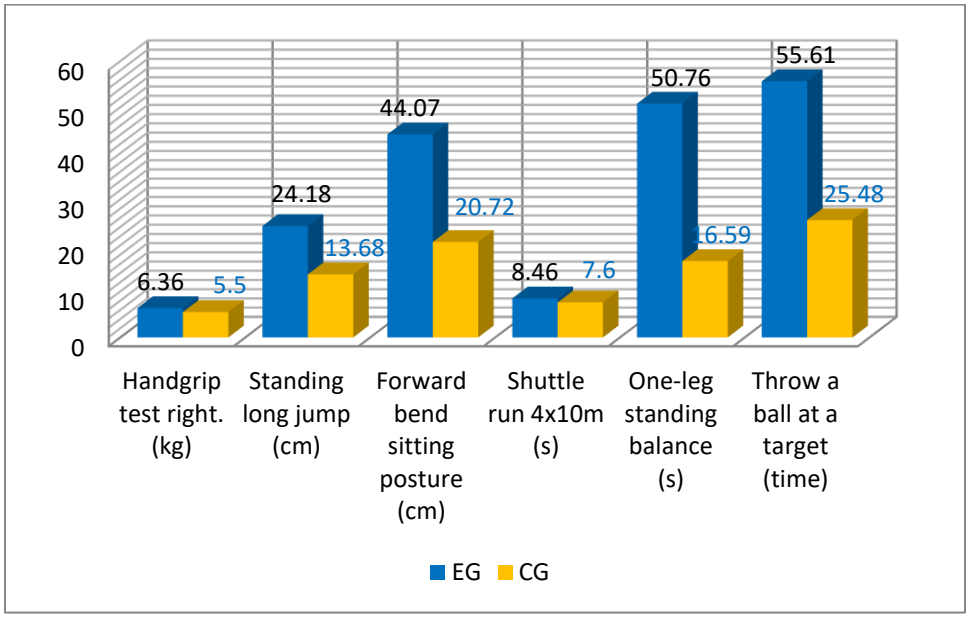

Fig 2. Physical fitness growth of EG and CG females after the experiment

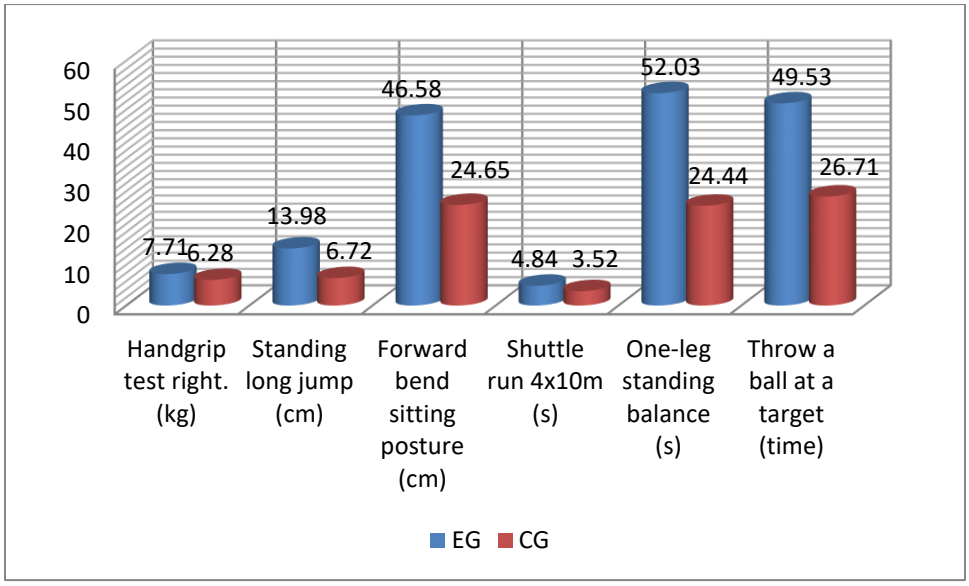

Fig 3. Physical fitness growth of EG and CG males after the experiment

The study's findings demonstrate that when choosing physical activities that are exciting and appropriate for kids, basic importance is given to the objectives and requirements related to the attention attribute. The physical activities are chosen based on the kid's motor skills, and by actively engaging in them, a dual effect is created.

According to the results of an experiment on the effect of physical activities on enhancing children's intentional attention capacity, children with mild mental impairment, ages 6 to 9, demonstrated a discernible shift in intentional attention following the trial. The child's level of deliberate attention before the experiment was low (M = 2.08); following the trial, M = 2.58 was at an average level, and the T-Test revealed a statistically significant difference (0.03 > 0.05). Given that there was a shift in the four intentional attention ability manifestations—four of which were low prior to the experiment and four of which improved to the average level following it—the T-test for each of the four expressions produced positive findings. P<0.05 for statistical significance and dependability.

Conclusion

This study found that physical activities for children aged 6–9 with mild mental retardation are selected based on a matrix that considers various factors related to the child's mental abilities. The orientation matrix takes into account both qualitative and quantitative research results, incorporating characteristics and criteria for evaluating the child's mental retardation ability. The findings indicate that these chosen physical activities effectively impact both the physical fitness and intentional attention ability of the targeted age group. The integration of qualitative and quantitative research results underscores the comprehensive nature of the study. The study emphasizes that physical activities address the specific needs of children with mild mental retardation by providing well-known and repetitive motor tasks. These activities maintain high standards to ensure appropriate goals and efficacy, ultimately enhancing overall function. Additionally, engagement in physical activities supports children's learning and training, fostering their conscious efforts. The ultimate goal is to establish a foundation for the development of intentional attention capacity in children with mild mental retardation.

In terms of their capacity for deliberate attention, the children with moderate mental disabilities, ages 6 to 9, showed improvement after the intervention. Children in Vietnam with severe mental impairments had shorter attention spans than children without mental retardation because of deficits in language and social skills [12]. Both anecdotal results from

observation and quantitative data from comparing mean values before and after the experiment show that children's attention, sustainability, and focus have significantly improved. Making use of appropriate physical activities to support kids' brain development Mental retardation is an appropriate and necessary teaching technique that uses direct visualization in order to educate and care for youngsters. [7, 9]. A child's functional transformation process will be supported at the proper level by simple activities like walking, running, leaping, throwing, and catching. These activities also address the demands of maintaining health, improving physical fitness, and developing motor skills [8], [5]. Basic gymnastics consists of simple natural movements, including walking, running, leaping, throwing, and catching. In order to capture children's attention and make physical activities engaging, it's crucial to think about how to mimic familiar imagery for them [12], [6]. Physical activity can positively impact children with moderate mental impairment, ages 6 to 9, in terms of both physical fitness and deliberate attention, according to a mix of qualitative and quantitative research findings. This is so because the content and format of physical activities determine the orientation matrix's properties and evaluation criteria for mental retardation in youngsters. Physical activities support children's learning and training to encourage their conscious efforts as a foundation for the development of intentional attention, meet the demands of routine and familiar motor tasks, and uphold strict standards to guarantee the principle of appropriate goals and efficacy to enhance function [10]. The results of this investigation are consistent with research done on children in Ho Chi Minh City, Vietnam (Lam T.M., 2020).

Discussion

The study's findings support the idea that engaging in physical activity helps kids aged 6 to 9 pay more attention on purpose and have better physical condition. Following the experiment, the male and female groups showed improvement, with the experimental group showing an increase in intentional attention of 20.16% to 22.39%. Additionally, the six tests used to evaluate physical fitness with the impact that this study chose showed an increase in comparison to the pre-experiment period. Among these, one-leg standing balance (s) and throwing a ball at a target (time) produce the highest development outcomes in EG. Both CG and EG showed improvements in physical fitness compared to pre-experimentation levels; EG's growth rate increases to statistically significant levels (females increase 6.36 to 55.61; males increase 4.84 to 52.03), while CG's increase is not statistically significant (females increase 5.50 to 25.48; males increase 3.52 to 26.71). According to the study's findings, children in the Mekong Delta of Vietnam who have a minor mental impairment and are between the ages of 6 and 9 should engage in physical activities. Consequently, a scientific foundation benefits educators and specialists by serving as a foundation for future studies on children's mental retardation as well as a source of reference and application in the classroom.

References

[1] Chiviacowsky, S., Wulf, G., & Ávila, L. T. G. (2013). An external focus of attention enhances motor learning in children with intellectual disabilities. Journal of Intellectual Disability Research, Vol.57, no.7, p.627-634. https://doi.org/10.1111/j.1365-2788.2012.01569.x

[2] DSM-IV: Diagnostic and Statistical Manual of Mental Disorders 4th edition. American Psychiatric Association Washington DC, 1997.

[3] Elisabeth M. Dykes (1998), Exercise and Sports in Children and Adolescents with Developmental Disabilities: Positive Physical and Psychosocial Effects, Child and Adolescent Psychiatric Clinics of North America, vol. 7, no.4, p.757-71. https://doi.org/10.1016/S1056-4993(18)30210-4

[4] Golubović, Š., Maksimović, J., Golubović, B., & Glumbić, N. (2012). Effects of exercise on physical fitness in children with intellectual disability. Research in developmental disabilities, vol.33, no.2, p.608-614. https://doi.org/10.1016/j.ridd.2011.11.003

[5] Khalili, M. A., & Elkins, M. R. (2009). Aerobic exercise improves lung function in children with intellectual disability: a randomised trial. Australian Journal of Physiotherapy, Vol.55, no.3, p.171-175. https://doi.org/10.1016/S0004-9514(09)70077-7

[6] Arthur F. Kramer, Sowon Hahn, Neal J. Cohen, Marie T. Banich, Edward McAuley, Catherine R. Harrison, Julie Chason, Eli Vakil, Lynn Bardell, Richard A. Boileau & Angela Colcombe. (1999)., Ageing, fitness and neurocognitive function, Nature, 400, p.418–419. from https://www.nature.com/articles/22682

[7] Kramer AF, Hahn S, Gopher D.(1999). Task coordination and aging: explorations of executive control processes in the task switching paradigm, Acta Psychologica, Vol.101, no.2–3, p.339-378. https://doi.org/10.1016/S0001-6918(99)00011-6

[8] Lotan, M., Isakov, E., Kessel, S., & Merrick, J. (2004). Physical fitness and functional ability of children with intellectual disability: Effects of a short-term daily treadmill intervention. The scientific world journal, from https://www.hindawi.com/journals/tswj/2004/950740/.

[9] Myer G.D., Faigenbaum A.D., Edwards N.M., Clark J.F., Best T.M., Sallis R.E. Sixty minutes of what? A developing brain perspective for activating children with an integrative exercise approach. Br. J. Sports Med. 2015;49:1510-1516. doi: 10.1136/bjsports-2014-093661

[10] Javan, A. T., Framarzi, S., Abedi, A., & Nattaj, F. H. (2014). Effectiveness of Rhythmic play on the Attention and Memory functioning in Children with Mild Intellectual Disability (MID). International Letters of Social and Humanistic Sciences, no.6, p.9-21. From https://www.ceeol.com/search/article-detail?id=96531

[11] Petter Strømme., & Gudrun Hagberg., (2000). Aetiology in severe and mild mental retardation: a population-based study of Norwegian children, Developmental Medicine and Child Neurology, Vol.42, no.2, p. 76 – 86. DOI: https://doi.org/10.1017/S0012162200000165

[12] Lam T.M, (2020). Study on selection of physical exercises to improve intentional attention of children with mild mental retardation in Ho Chi Minh City, Vietnam, Doctoral thesis of education, Ha Noi (In Vietnamese).