

# Analysis of the Value of Physical Activity to Children's Mental Health Education in the Epidemic Era

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## Abstract

This research aims to examine the contribution of physical activity to children's mental health education during the epidemic era. In this study, 50 5- to 6-year-old children from a city were recruited as research subjects using interviews, literature review, and experimental statistics and then randomly divided into two groups: the experimental group and the control group. The psychological index data before and after the happy exercise were measured using a questionnaire survey. The psychological index data before and after 12 weeks of experimental practice were evaluated using data statistics. Six mental health indices demonstrated a significant difference between the experimental group and the control group, with the improvement value of the experimental group's movement score being 3.68 and the improvement value of the control group's movement score being 0.15. Social score improvement in the experimental group was 1.76, whereas, in the control group, it was 0.12. The value of language score improvement was 1.16, while the language score improvement in the control group was 0.14. The gymnastics sports curriculum is favorable to the mental health development of 56-year-old children and has significantly enhanced children's mental health.

**Keywords:** Physical activity; The epidemic era; Mental health; Happy Exercise

## 1. Introduction

The COVID-19 pandemic has wrought tremendous devastation across the nation, posing a grave threat to the physical and mental health of the population. General secretary Xi Jinping emphasized that the prevention and management of epidemics is not merely a medical and health issue but a multifaceted one and that all activities should contribute to the victory in the war against the epidemic. In this fight against the epidemic, we have witnessed the unique appeal of sports and felt the obligation and accountability of athletes. The distinctive significance of sports contributes significantly to our battle against the pandemic (Yusuf et al., 2021).

The ages of five to six are crucial for children's mental health development. With the advancement of brain science, individuals are paying more and more attention to the cognitive development of preschoolers. As a new sport, the pleasure of exercise is gradually gaining children's favor and the worry of linked scientists (Toomey et al., 2022). Previous research has focused excessively on the influence of leaping on children's athletic skills, while the impact of entertaining games on their brains has received insufficient attention. This study is designed to investigate the effects of the joy of dancing on children's mental health in a large class, cultivating children's interest in happy sports, further supporting the brain development of

preschool children, and providing a theoretical foundation for supporting the form of kindergarten sports.

According to the relevant survey, the most common mental development issues among 5-6-year-olds are the intelligent type, the clumsy type, the dependent type, the activity type, and the emotional indifference type, among others. Clever children are characterized by excellent learning ability, good cognitive ability, and good focus. Still, they oppose too much interaction with people and things outside and do not engage in sufficient physical activity. This type of youngster needs to interact with peers and can attempt to engage in outside activities (Nagata et al., 2022). The features of energetic children are that they are busy, willing to interact with others, and love activities. However, a bad sense of rules, like disturbs the mental health of 5-6-year-olds, may be split into different categories, as seen in Figure 1.



Figure 1. Children's mental health types

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To mitigate the epidemic's negative effects, most individuals engage in physical activity at home through sports so that they or their families can return to normal life as soon as possible. As the staff at the forefront of the quarantine task, community workers popularized scientific fitness knowledge through WeChat group live broadcasting and other means at the quarantine site and led residents to perform the scientific exercise at home, which was well-received by people and conveyed a positive and healthy outlook on life (Garcia-Aymerich et al., 2021). The sequestered inhabitants engaged in various exercises daily at home, alternating coordination and strength training, such as skipping and push-ups, and formed healthy exercise routines. Other families also participated in exciting sports activities, utilizing the inexpensive equipment they already had at home for games; this demonstrates that people have a life-affirming, fearless outlook. This study aims to investigate the effect of happy gymnastics on children's mental health through experimental research and exercise intervention in strict conformity with the operational guidelines to ensure the validity of the test.

## 2. Review of Literature

Whether or not children's mental health directly impacts their future, it is crucial to give equal attention to their mental and physical health development. A healthy infant's psychology consists primarily of a healthy personality, normal IQ, etc. Infants are the optimal age for good psychological development. At this age, child psychological development is immature. They are open to new experiences, which is crucial to establishing and enhancing healthy psychology. Early childhood mental health is intimately tied to future growth and development; therefore, parents, schools, and society must accept shared responsibility for children's mental health education and pay close attention to mental health issues during this time (Rahawi et al., 2021). To assist youngsters in establishing the proper values of life upon joining society, adaptability capacity, learning ability, and interpersonal skills have had a substantial impact. Good training and a happy outlook on life play a significant part in enhancing family happiness, which creates a firm basis for children to adjust to society more quickly and meet the future demands of social growth. Timely mental health education in early life and timely treatment of children's mental health problems so that they have a pleasant, cheerful, optimistic attitude boost children's overall development (Gilson et al., 2022). Thus, children's mental health is crucial to their future physical development.

In their study on the influence of standard movements of happy gymnastics on students' longitudinal jump height, Quilico et al. (2021) found that students' longitudinal jump height increased significantly after practicing happy gymnastics. The feasibility analysis of the happy gymnastics research conducted in Beijing by Girchenko, Lahti-Pulkkinen, and Rääkkönen (2021) demonstrates the desire for joyful gymnastics instruction at Gaocan Primary School. According to the local education reform objectives and level of economic growth, joyful gymnastics are crucial. In the happy gymnastics program training for 3 to 6-year-old children, Godden et al. (2021) stated that happy gymnastics should be vigorously promoted, as it not only has a positive impact on the physical quality of 3 to 6-year-old children but also meets the psychological development needs of 3 to 6-year-old children, and can effectively promote the holistic physical and mental development of children. In the practice of children's gymnastics on the physical and mental health development of 5-6-year-olds, it is stated that children's gymnastics teaching can effectively cultivate the enthusiasm of 5-6 year-olds for sports participation, cultivate children's ability to complete tasks according to the requirements, temper children's willpower, instill confidence, cultivate children's unity and cooperation team ability, and promote children's mental health development. Yet, it was discovered that children's gymnastics had no substantial effect on the living habits and language of 5-6-year-old children's mental health (Yeasmin et al., 2020).

In their article on the influence of sports games on children's mental health, Ayyash et al. (2021) stated that sports games are a type of exercise mode for physical exercise, developing basic movements, and enhancing physical fitness according to the situation, role-playing, and rule composition, which can effectively promote children's emotions. Personality, social adaptation, social development, and other factors have the most significant influence on the characters of children. The experimental study of the effect of aerobics on the mental health of senior primary school pupils revealed that studying anxiety has become the most significant psychological issue facing senior primary school students (Bjerre et al., 2021). Calisthenics can considerably reduce students' learning anxiety and physical health concerns, and improved mental health dramatically impacts students' overall performance (Turan & Eray, 2021). In the study and research of sports games on children's physical and mental health development, the field research method is used to compare the impact of sports games on children's physical and psychological health and to analyze and discuss sports games for children. By partnering with

children to complete action tasks or competing in groups to complete action tasks, sports games, in his opinion, can successfully enhance children's feeling of competitiveness and sense of rules (Roberts et al., 2021).

The society of today is experiencing significant changes not witnessed in a century. Complexity and severe competition characterize the social environment. Physical and mental health issues among students are also gaining increasing attention. With the burden of family and interpersonal connections, disharmony, and other causes, many students appear tired of learning psychology and behavior, develop paranoid personalities, and cannot withstand pressure; these are the phenomena that educators must note. Students' mental health is not only the beginning point of all education but also the priority of school administration. If students' physical and psychological health cannot be assured, our education and teaching will be useless and will become a mirage (Jang, 2021). With the onset of the epidemic, sports have become a popular form of home isolation, significantly enhancing people's physical fitness and spiritual lives. Under the effect of the epidemic, many people's inability to adapt to their secluded lifestyle results in negative psychological pressure.

In this research, experimental methods are used to derive findings. Via experimental presentation, data become more comprehensible. The characteristics and impact of distinct movements vary. To increase the physical health level of students more effectively, we must examine the sports features of various projects, combine the growth and development rules of students with their sports interests, and select suitable teaching content. From the sort of sports equipment to fundamental gymnastics in modern early childhood education, Basketball, football, dance, and other solitary sports have a more significant effect on children's mental development than happy gymnastics.

### **3. Methodology**

Gymnastics joyful gymnastics children psychology searches for terms in the CNKI Wanfang database, Baidu academic, Google academic, and other Chinese databases retrieves journal publications, masters and doctoral dissertations, and works from the past ten years. In addition, the literature is categorized, sorted, read, and studied, and literature notes are taken to comprehend joyful gymnastics youngsters. The current situation of the development of the psychological field and the most recent trend and level of related research, combined with the actual case of China, the current situation of kindergarten students in the psychological aspect and the existing

problems in this field, and the development trend are analyzed and summarized to provide a solid theoretical foundation for the direction and content of this study.

Indicators of children's mental and physical health were examined and evaluated in this study. Due to young children's limited capacity to comprehend the language at the time, parents were required to write for them. During the period, they explained specific questions and options on the questionnaire but did not direct respondents in their responses. Using an experimental design, enjoyable games' impacts on children's mental health in a large class were investigated. In a municipal kindergarten, 50 children between the ages of 5 and 6 were recruited for the study and divided into the experimental and control groups. The experimental and control groups consisted of 5-6-year-olds. The study duration is twelve weeks. Throughout the experiment, the experimental group participated in happy learning connected to jumping every Friday afternoon for 50 minutes at the Happy Gymnastics Center of Zhonghai Jincheng Kindergarten. In contrast, the control group was just required to engage in routine daily activities.

First, Excel was used to record the mental health measurement results and basic information of children before and after the experiment. A preliminary calculation of the final score for each index was performed. Afterward, the Excel data were imported into SPSS23.0, and descriptive statistics were applied to the sample size information. A paired sample T-test was used to determine whether there was a difference between the experimental and control groups' mental health indicators before and after the experiment. The same test was used to determine whether there was a difference between the experimental and control groups before and after the investigation. Use "\*" to indicate that  $p < 0.05$  is statistically significant, "\*\*" to show that  $p < 0.01$  is statistically significant, and " $p > 0.05$ " to show that the result is not statistically significant (Jang, 2021).

Before and after the trial, both the experimental group and the control group's mental health was evaluated. Assessment of children's mobility, intelligence, emotions and physical strength, social skills, leadership, and language are essential themes. We compared and considered the pre-experimental and control groups, the pre-experimental and control groups, the pre-experimental and post-experimental groups, and the pre-experimental and post-experimental control groups.

### **4. Findings**

Before the trial, Table 1 displays a comparison of mental health markers between the experimental group and the

control group. The experimental group had a higher mean value for actions, thoughts and desires, relationships, behavior, and other dimensions than the control group; however, the control group had a higher mean value for the cognitive dimension, and the experimental and control groups had similar mean values for comments. Simultaneously, on the dimension of mental illness, action ( $T = 0.414$ ,  $p = 0.223$ ), intelligence ( $T = -0.047$ ,  $p = 0.799$ ),

thinking and will ( $t = 0.170$ ,  $p = 0.913$ ), relationship ( $T = 0.252$ ,  $p = 0.628$ ), lifestyle ( $T = 0.700$ ,  $p = 0.804$ ), language ( $T = 0.000$ ,  $p = 0.354$ ), etc., were not significantly associated with  $P > 0.05$  indicates that there is no difference between the experimental group and the control group in the scores of actions, intelligence, emotions and will, social, living, and language in mental health; therefore, the nature of the test results can be disregarded.

**Table 1**

*Comparative analysis of mental health index between the experimental group and control group before the experiment*

Project	The experimental group (n=25)		Control Group (n=25)	
	Mean value±standard deviation	Mean value±standard deviation	T	P
Movement	7.20±1.87	7.00±1.53	0.414	0.223
Cognitive Competence	10.08±3.11	10.12±2.89	-0.047	0.799
Emotion and Will	5.48±1.58	5.40±1.58	0.179	0.913
Sociality	4.96±2.21	4.80±2.27	0.252	0.628
Living Habit	2.00±0.82	1.84±0.80	0.700	0.804
Language	5.96±2.64	5.96±2.28	0.000	0.382

In addition, [Table 2](#) compares the mental health markers of the experimental group before and after the trial. After 12 weeks of gymnastics instruction, the experimental group's senior class did a T-test on the pre-and post-test data. The action before and after [Table 1](#) demonstrates that the experimental group ( $T = 0.811$ ,  $p = 0.000$ ), cognitive capacity ( $T = 5.42$ ,  $p = 0.000$ ), emotion, and will ( $T = 4.52$ ,  $p = 0.000$ ), and social ( $T = 2.47$ ,  $p = 0.021$ ) were significantly different from the control group.  $p$  is less than 0.005 in the language ( $T = -1.79$ ,  $p = 0.05$ ). The results

indicate that there is a significant effect on the emotion of motor cognition ability and the sociality of volitional language before and after the experiment, indicating that the happy exercise experiment has a positive impact on the emotion and sociality of motor cognition ability in children. However, the results on the dimension of living habits were insignificant before and after the experiment ( $T = -0.49$ ,  $p = 0.622$ ), demonstrating that happy gymnastics has no meaningful effect on children's living habits.

**Table 2**

*Comparative analysis of mental health indexes in the experimental group before and after the experiment*

Project	The experimental group (n=25)		T	P
		Mean value±standard deviation		
Movement	before the experiment	7.20±1.87	-8.11	0.000
	after the experiment	10.88±1.24		
Cognitive Competence	before the experiment	10.08±3.11	-5.42	0.000
	after the experiment	14.20±3.50		
Emotion and Will	before the experiment	5.48±1.58	-4.52	0.000
	after the experiment	7.44±2.18		
Sociality	before the experiment	4.96±2.21	-2.47	0.021
	after the experiment	6.72±2.11		
Living Habit	before the experiment	2.00±0.82	-0.49	0.622
	after the experiment	2.12±0.78		
Language	before the experiment	5.96±2.64	-1.79	0.035
	after the experiment	7.12±1.88		

In addition, [Table 3](#) compares the mental health markers of the control group before and after the experiment. The paired sample T-test was performed on the data before and

after the investigation following 12 weeks of regular physical education class. From [Table 2](#), the control group before and after the investigation in action ( $T = 0.000$ ,  $p =$

1.000) cognitive ability (T = 1.57, p = 0.131) emotion and will (T = 0.23, p = 0.824), social (T = 0.57, p = 0.574) Life habits (T = 1.37, p = 0.215) language (T = 0.19, p = 0.852), and other dimensions do not have significant differences.

Before and after the experiment, there was no significant influence on the mental health, mobility, cognitive ability, social life habits, or the language of the youngsters in the control group.

**Table 3**

*Comparative analysis of mental health indexes in the control group before and after the experiment*

		Control Group (n=25)		
Project		Mean value±standard deviation	T	P
Movement	before the experiment	7.00±1.53	0.00	1.000
	after the experiment	7.00±1.68		
Cognitive Competence	before the experiment	10.12±2.89	-1.57	0.131
	after the experiment	10.40±2.99		
Emotion and will	before the experiment	5.40±1.58	0.23	0.824
	after the experiment	5.36±1.68		
Sociality	before the experiment	4.80±2.27	-0.57	0.574
	after the experiment	4.92±1.93		
Living Habit	before the experiment	1.84±0.80	-1.37	0.185
	after the experiment	1.96±0.84		
Language	before the experiment	5.96±2.28	-0.19	0.852
	after the experiment	6.00±2.38		

Hence, Table 4 compares mental health indices between the experimental and the control groups. As shown in Table 3, mobility (T=9.27, p=0.000), cognitive capacity (T=4.04, p=0.000), and emotion and will (T=3.78, p=0.000) in mental health indicators improved after 12 weeks of happy gymnastics. Sociality (T=3.14, p=0.003)

was significant, although language (T=1.85, p=0.071) and living habits (T=0.69, p=0.489) were not. The results indicated that 12 weeks of cheerful exercise improved children's mental health, as measured by motor cognition ability, emotion, will, and sociality. However, it had no significant influence on their living habits or language.

**Table 4**

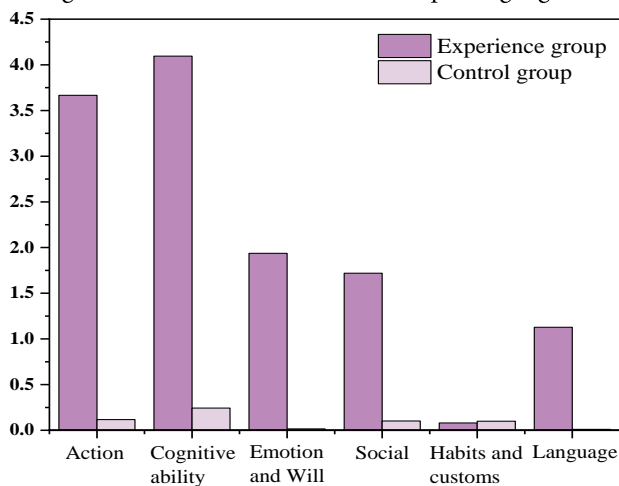
*Comparative analysis of mental health indexes between the experimental group and control group after the experiment*

Project	Experimental Group (n=25)	Control Group (n=25)	T	P
	Mean value±standard deviation	Mean value±standard deviation		
Movement	10.88±1.24	7.00±1.68	9.29	0.000
Cognitive Competence	14.20±3.5	10.48±2.98	4.01	0.000
Emotion and Will	7.44±2.18	5.36±1.668	3.78	0.000
Sociality	6.72±2.11	4.92±1.93	3.14	0.003
Living Habit	2.12±0.78	1.96±0.84	0.69	0.489
Language	7.12±1.88	6.00±2.38	1.85	0.071

The youngsters participated in an exciting fitness session for 12 weeks, whereas the control group participated in a regular exercise class for the same duration. Figure 2 demonstrates substantial changes between the experimental group and the control group in all aspects of children's mental health compared to the previous table survey. In the extended order, the experimental group's improvement value is 3.68, while the control group's

improvement value is 0.15. The experimental group's score on the intellectual capacity dimension rose to 4.12, whereas the control group's score rose to 0.28. In the dimension of theory and action, the score of the experimental group increased to 1.96, while the score of the control group decreased to -0.04. The findings mentioned above indicate that the happy gymnastics class is beneficial for enhancing children's mental health of

children aged 5 to 6 years, particularly regarding actions, intelligence, ideas and wants, relationships, language, etc.



**Figure 2.** Comparison of improvement value of mental health index score between the experimental group and control group before and after the experiment

Large-class children in the emotional and volitional parts of the regular psychological performance of teamwork; are willing to voice their opinions. The emotional and volitional components of children in large classes are affected by joyful gymnastics, which may be attributable to the instructional design of the gymnastics curriculum. So that children can not only experience the joy offered by sports games but also learn to collaborate and communicate with their peers, enhancing their emotional and volitional capacities, more games involving group collaboration are created. In addition, when children participate in a happy gymnastics course, the game will present challenges. Through consistent practice, children are encouraged to challenge themselves, overcome obstacles, reach their goals, and complete task. This process helps foster children's determination and tenacity in adversity (Rocha, Ramos, & Crispino, 2022). Large-class children in social components of normal psychological functioning for interpersonal communication are receptive to interacting with others. They can get along with their spouses. They can think independently, are self-assured and autonomous, and demonstrate compassion and respect for others.

Regarding social adaptation, I can quickly adapt to group life, have a sense of rules, and adhere to the fundamental norms of conduct (Meijer et al., 2022). Happy gymnastics has a favorable effect on the social elements of children in large classrooms for the following primary reasons: Happy gymnastics curriculum and traditional physical education differ; happy gymnastics with students as the primary body modifies the conventional manner of education with teachers as the significant body so that each child can

participate fully in sports activities. Learn collaboration and solidarity. During the game, players must maintain emotional control, modify their conduct, and actively interact and collaborate. The teacher will continue to promote and respect the children's opinions throughout this process. From forced acceptance to active learning, we may increase knowledge and integrate into the group more quickly (El Said, 2021).

In a nutshell, education is concerned with the soul and growth of the cause, and mental health education is essential. To let the heart, we must take action and do a good job in mental health education to encourage students to have a rich inner world (Li et al., 2021). In teaching, teachers should take proactive measures to allow students' young hearts to germinate and grow like seeds, to usher in the bright sunshine when breaking ground, to eliminate all obstacles on the path of life, to overcome all obstacles on the path forward, and to develop a healthy personality.

## 5. Discussion and Conclusion

The psychological index data before and after the happy exercise were obtained using a questionnaire survey. The data statistics approach was employed to examine the six psychological index data before and after 12 weeks of experimental practice. Six mental health indicators differ significantly between the experimental group and the control group, with the improvement value of the experimental group's activity score being 3.68 and the improvement value of the control group's action score being 0.15. The improvement value of the experimental group's ability score is 4.12, whereas the improvement value of the control group's ability score is 0.28. The upbeat score for thinking and purchasing was 1.96 in the experimental group and -0.04 in the control group. The improvement value of the experimental group's correlation score is 1.76, while the improvement value of the control group's correlation score is 0.12. The experimental group's character life improvement value is 0.16, while the control group's improvement value is 0.12.

The pandemic presents both a challenge and an opportunity. Modernizing China's governance structure and capabilities cannot be accomplished overnight; it is the outcome of continual review and practice. We have a stronger grasp of the purpose of sports due to this epidemic, as well as high hopes. Promoting the modernization of the sports governance system and governance capability in the new era is a challenging assignment, but we can only demonstrate our courage and tenacity because it is difficult. Only by continually summarizing, upgrading our governance experience and

governance concept into institutional measures, and having the courage to confront the problems in varying contexts can we continue to advance sports governance.

## 6. Theoretical and Practical Implications

This study has both theoretical and applied consequences. The theoretical understanding is expanded due to this study's findings because no prior studies have been presented. According to this study, physical activity affects the mental health of pupils. In addition, this study contributed to the literature by demonstrating that physical activities are essential for improving students' health. When one's mind is clear, and engaged in practical work, mental health is feasible. Yet, the study also contributed to the covid-19 literature by highlighting the importance of physical activity for improving students' mental health following the pandemic.

This study has practical ramifications as well. For the students' health, the study advised that their physical activity levels be improved. Different teachers supervising the school

activities would be useful in achieving future success. Yet, the study also revealed that without physical activity, it would be futile to achieve the desired outcomes. The durability of the relationships is a crucial consideration, and the dependability of the relationships can be enhanced over time if students are inspired to engage in physical activities. These physical exercises are essential for the pupils to improve their mental health significantly.

## 7. Future Directions

This research has significantly attained its purpose. Nonetheless, there are potential directions that researchers can pursue to expand the body of knowledge. Future studies should begin by developing a complete model of student mental health. Second, scholars are encouraged to collect primary data using the Likert scale for future research. In addition, scholars are enabled to utilize Smart PLS for data analysis. Hence, these contributions would be novel to the body of knowledge based on cross-sectional data collection.

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