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Development of Speed Agility and Quickness Exercises add to the Wushu Training Program for Primary School Students.

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Abstract

Background and Aim: Physical fitness is one of the important factors for the development of Wushu athletics. The SAQ was a modern physical training method that emphasizes the development of speed, agility, and quickness in athletes to improve all forms of strength, coordination, agility, and speed. Therefore, it is important to add SAQ exercise to Wushu training. This research aims to develop speed agility and quickness (SAQ) exercises to add to the Wushu Training program for primary school students.

Materials and Methods: This study implemented a quasi-experimental research design with 50 subjects selected at simple random sampling and 25 systematic samples in each experimental and control group. A pretest was then administered to assess the individuals' characteristics, Wushu Sanda skills, and physical fitness. Following that, they were trained with SAQ exercises added in a wushu training program for 8 weeks, 3 days/weeks (M-W-F) for 60 minutes, and a post-training test with a mid-test and post-test. Data analysis included mean and standard deviation, independent t-tests, pretest, midtest, and posttests with one-way ANOVA, and Bonferroni post hoc pairwise comparisons (*p<.05).

Results: The result found that: 1) The mean comparison showed a significant difference (*p<.05) between experimental and control groups in Wushu Sanda skills (side kick and takedown) and physical fitness (vertical jump test, hexagon test and reaction times). 2) Mean comparison between experimental and control groups, Wushu Sanda skills and physical fitness pairwise were significant differences (*p<.05).

Conclusion: The speed agility and quickness exercises added to the training program could improve fitness and Wushu Sanda skills in primary school students.

Keywords: SAQ Training; Wushu Sanda; Primary School Students

Introduction

The origin of Wushu can be traced back to the early activities of the ancestors of the Chinese people who struggled hard for survival During the prolonged ancient age, Wushu was used to fight with the enemy, practiced by the ordinary people as a means of self-defense and physical training, as well as for a recreation. During the process of its gradual development in modern times, Wushu had been separated from military skills. The styles of movements in attack and defense were improved by the combination of traditional Chinese Kungfu, modern Taolu, and Sanda which became to international sports activity. (Oceania Kung Fu Wushu Federation, 2023) Wushu Taolu was a systematic pattern of attack and defense moves designed for training purposes aimed to enhance the practitioner in different ways. is a set of connecting stylized movements choreographed according to certain laws, embodying the philosophical connotation of attacking and defending? Taolu, comprising bare-handed and weapons forms, has 11 different routines that fall under 4 main categories comprised of Barehand or Changquan, Short Weapons or Daoshu, Long Weapons or Gunshu, and Choreographed Fights or Dui Lian. Sanda is a martial art that was originally developed by the Chinese military based upon an intense study of various traditional methods and combined with modern, advanced sports medicine and training methodology. The Sanda is a movement of fighting that involves fighting movements between two peoples for both attack-defense exercises. Wushu became a nationalized competitive sport in China in the 1950s. With the entry of China onto the international stage and the spread of Chinese culture, Wushu was also spread all over the world. Nowadays, modern wushu has integrated the movement from gymnastics and dance, combining grace and elegance with the power and agility of

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traditional wushu. In 1990, the International Wushu Federation was established in Beijing to further promote wushu. It has held ten World Wushu Championships and helped federations around the world organize their competitions. In 1994, the Australian Kung Fu (Wushu) Federation Limited was established as the official peak organization representing Australia with the International Wushu Federation. (Oceania Kung Fu Wushu Federation, 2023)

In the current progress of science and technology, the public was more and more aware of to strengthen the importance of physical exercise to improve physical health problems. (Montoye et al., 2022 and Qiu et al., 2023). Schools are therefore important in Promoting physical education and sports, emphasizing their importance in transmitting sports culture to students. (Bailey, 2006) However past operations have found that students are less interested in playing cultural sports. Especially the sport of Wushu. There are many factors such as the increasing popularity of modern sports such as basketball and football have become more attractive to students. (Wang et al, 2016). There is a shortage of qualified and experienced Wushu instructors. Lack of appropriate facilities and equipment for Wushu training. This requires specific space and equipment. Emphasis is placed on academics rather than extracurricular activities. This causes students to have less time to play sports. Lack of support from parents and society due to safety concerns and risk of injury. Promotions and incentives are not enough for students to study at Wushu. There is a lack of integration of Wushu into the school curriculum. Due to poor physical fitness, students do not want to study or practice. (Theeboom & De Knop, 1997) These things lead to students in school paying less and less attention.

Physical fitness is one of the important factors in the development of Wushu sports. Which was divided into two disciplines: Taolu, and Sanda. Taolu involves martial art patterns and maneuvers for which competitors are judged and given points according to specific rules. The forms comprise basic movements (stances, kicks, punches, balances, jumps, sweeps, and throws) based on aggregate categories of traditional Chinese martial arts styles and can be changed for competitions to highlight one's strengths. Competitive forms have time limits that can range from 1 minute, and 20 seconds for some external styles to over five minutes for internal styles. As for Sanda, athletes use body movements such as punching, kicking, and throwing that require speed, precision, and power, which are the physical abilities that are required for success in this form of competition (Theeboom et al., 2017) In terms of technical aspects and movement characteristics, Wushu Sanda is classified as a mixed martial arts sport. Like other combat sports, it involves attacking (punching and kicking) and fighting (throwing) moves (Del Vecchio et al, 2015). Sanda's foot movements mainly consist of running, jumping, straddling, and quick starts. Emergency stop and change of direction, the key to success depends on strength, speed, and explosive efficiency. Specifically, the ability to create force quickly or at a fast speed. In competition, players must attack and defend promptly. With excellent change of direction performance, players can effectively reach their opponent's attack position in the fastest time. (Machado et al, 2010) At the same time, it is also possible to quickly withdraw from the opponent's attack range. For effective development of these physical abilities, SAQ training can be used. (Schick et al., 2021)

The SAQ was a modern physical training method popular in Europe and the United States that emphasizes the development of speed, agility, and quickness in athletes to improve all forms of strength, coordination, agility, and speed. The SAQ training strengthens muscle strength in linear, lateral, horizontal, and multiple planes, as well as the speed at which signals from the brain are transmitted to the body, allowing athletes' coordination, reflexes, and movement speed to increase rapidly. Several studies have been conducted on the effect of SAQ training on speed and agility with significant results. SAQ training methods are more effective in adolescence than in adulthood, and SAQ training plays an important role in speed, coordination, reaction, and acceleration at all stages and levels (Subekti, et al, 2021). Through SAQ training, Wushu responds to stimuli with faster movements, and changes in direction begin to become more rapid being a very technical sport, requires precise aim and hitting the opponent. To promote the

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development of athletic abilities appropriate to move with the ability to be faster, more coordinated, and more accurate, and to help coaches in improving the speed, agility, and quickness of athletes. Therefore, it is important to add SAQ exercise to Wushu training. It will help improve physical and mental health, reduce the risk of injury, and help with recovery after training. (Fang and Xue, 2024)

Objectives

1. To develop speed agility and quickness (SAQ) exercises add in the Wushu Training program for the primary school's students.
2. To study the effects of SAQ exercises added to the Wushu Training program for primary school students.
3. To compare Physical fitness and Wushu skills between the control group and the experimental group.

Literature review

1. The history, contents, and practices of Wushu

1.1 Background of Wushu

Wushu generally means "Chinese martial art." To understand the traditional meaning of Wushu, one must understand its elements. The Chinese character "Wu" consists of two parts. The first part means "to stop" and the second part means "war hammer." The war hammer was a weapon that was often used in battles in the past. "Shu" simply means "art." Therefore, as a definition of martial art in general, Wushu means "the art of stopping war and violence".

Originating Wushu in China over 4,000 years ago, wushu was time-honored, rich in content, and diversified in forms. In its age-long process of development, wushu had been referred to as "martial arts", "gosh", "gong fu" and "kung-fu". The origin of wushu could be traced back to the early activities of the ancestors of the Chinese people who struggled hard for survival. During the prolonged cold weaponry age, wushu was employed by the army to subdue the enemy, practiced by ordinary people as a means of self-defense and physical training, as well as for a cheerful life. During the process of its gradual improvement and development in modern times, wushu had been separated from military skills. With the attack and defense movements and the Chinese traditional culture as its background, wushu had become an international sports activity, which included modern taolu and sanda disciplines, as well as traditional wushu. Wushu had over time become a formal branch of study in Chinese performance arts. It reigned as the most popular national sport in a country of over 1.2 billion people, practiced by young and old alike. Modern or sport wushu was striving to find its rightful place in the arena of Olympia through the efforts of the International Wushu Federation. (YunTai Mountain International Culture and Martial Arts School, 2024)

1.2 Wushu in schools

In Physical Education class, Wushu was one of the courses for a student which was a difficult problem in teaching jumping skills. Most of the current wushu teaching methods remain on the traditional teaching methods which concentrated on verbal explanation with technical action demonstration. This made the classroom atmosphere sluggish, low efficiency, and boring to the students. At present, a large part of the elementary and secondary school campus in the Wushu curriculum is chaotic and arbitrary, with no standard outline and lesson plan (Wan, 2021). Zhou (2018) stated the key problems in the course reform of Wushu and National Traditional Sports Major that: 1) Lack of reasonable training objectives, 2) Lack of effective curriculum structure, and 3) Improper setting of curriculum.

1.3 Basic Skills of Wushu Sanda

The basis of Sanda sports is not only knowledge of techniques but also the creation of a solid basis for practicing and improving one's skills. Footwork, striking techniques, kicks, throws, locks, and

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holds are just a few of these. It's also about posture, breathing, concentration, and reaction time. A good Sanda fighter must be proficient in all of these areas and be able to apply them to different situations.

1) Striking Techniques: Striking techniques are an important element in the sport of Sanda. These techniques allow the combatant to attack effectively and defeat the opponent. There are different striking methods, such as straight punches, hooks, uppercuts, and side punches. The keys to a successful strike are speed, accuracy, and timing. A fighter must react quickly and strike his opponent with precision. Stable posture and good technique are therefore important.

2) Kicks: Kicks are another important element of the sanda sport and can be used in a variety of situations. There are many different types of kicks, such as front kicks, sidekicks, crescent kicks, and ax kicks. These techniques require good balance and body control. A fighter must be able to kick quickly and efficiently to defeat an opponent. Kicking techniques are also an effective way to maintain distance from your opponent and use offensive or defensive tactics.

3) Throws and Locks: Throws and locks are important techniques in the sport of Sunda. And helps the fighter quickly knock the opponent down to the ground and put the opponent at a disadvantage. Throws and locks require good technique and a solid foundation in terms of posture and balance. However, when used correctly, this method can be very effective and greatly affect the outcome of the battle.

Sanda is an exciting martial art that combines boxing, kickboxing, judo, and wrestling. Sanda training is a great way to improve your fitness. Improve fighting skills and increase self-confidence. (YunTai Shaolin International Culture and Martial School, 2024).

2. Contents and Practice of SAQ Exercise

2.1 Definition of SAQ

SAQ was an abbreviation of Speed, Agility, and Quickness and was a technique for training workouts to improve athlete acceleration, deceleration, reaction time, and coordination. It is also important for improving foot speed, quickness, speed changes, and directional change. Each of these skills enhances athletic performance. SAQ training was a system of dynamic movement and guidelines when creating the importance of motor abilities to enhance the ability of the individual to be more skillful in faster movement. The SAQ training generally consists of short, high-intensity bursts of activity followed by periods of rest or active recovery. These activities can be done with or without equipment. SAQ training is based on the principle of "specificity" which means that you need to train specifically for the demands of your sport. (Marinkovic et al, 2022).

SAQ (Speed, Agility, and Quickness) exercises added to a Wushu Teaching Program led to better outcomes in the experimental group than in the control group, particularly for side kicks and takedowns. According to Bompa (2018), the effectiveness of these exercises can be attributed to several key factors:

1. Specific Training Drills: SAQ exercises likely involved movements and drills that directly enhanced the motor skills needed for Wushu, like side kicks and takedowns. These drills improve coordination, muscle memory, and reaction time, all critical in performing technical maneuvers.

2. Training Volume, Intensity, and Recovery: Appropriate management of training load (volume and intensity) and adequate recovery time are crucial for physiological adaptation. Properly structured SAQ drills can target fast-twitch muscle fibers and enhance explosive power, agility, and balance, which are vital for executing fast, controlled kicks and takedown maneuvers.

3. Physiological Adaptation: SAQ exercises are designed to stimulate the nervous and muscular systems, improving reaction times and dynamic movements. The focus on quickness and agility in these drills may help participants develop better body control and faster responses during combat situations, translating into more effective side kicks and takedowns.

In conclusion, the experimental group's better performance in these Wushu skills likely results from the inclusion of SAQ exercises that complement the physiological and technical demands of the sport.

2.2 Usefulness of SAQ

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1. SAQ exercise could improve the efficiency of these signals, which can help to improve reaction time, coordination, and balance.

2. SAQ exercise helped to improve the ability of the muscles to produce force quickly. This is important for activities that require explosive movements such as sprinting, jumping, and change of direction.

3. SAQ exercise helps to improve the ability of the muscles to sustain repeated contractions over some time. This is important for activities that require long periods of running or other cardiovascular work.

4. SAQ exercise could help to improve the running economy, which is the amount of energy you use to run at a given pace. The better your running economy, the less effort you will need to expend to run at a certain speed. This will help to run faster and longer with less fatigue.

5. SAQ exercise could help to improve spatial awareness and reaction time which is the ability to be aware of your surroundings and to react quickly to changes in your environment.

6. SAQ exercise could help improve cardiovascular fitness by increasing the heart rate and making the heart work harder. This type of training is a great way to improve your overall cardiovascular health.

7. SAQ exercise can help improve coordination by teaching the body to move in multiple planes of motion. It improves your lateral, linear, horizontal, and rotational movement.

8. SAQ exercise could help improve proprioception by teaching the body to move in multiple planes of motion. Proprioception is the ability to be aware of the position of your body in space. This is important for activities that require balance and coordination.

9. SAQ exercise could help to improve motor skills by teaching the body to move in multiple planes of motion. This type of training is great for activities that require precise movements. (Mukhwana, 2024).

3. Training program

3.1 Definition of the training program

The training program is to provide participants with a systematic and organized approach to learning and improving their skills in a particular sport, to enhance students' sports performance. Physical education is a subject that focuses on training science in the study of life that emphasizes and cares for the health of school-aged children (NASPE, 2012). It is a channel for doing physical activities that have a developmental value that helps school-aged children. Give to the child Improve physical efficiency physical control skills and health (Robinson and Goodway, 2009; Robinson, 2011). Physical education is education taught through the body. Sallis and McKenzie (1991) emphasized two main goals of physical education: 1) prepare children and youth for lifelong physical activity, and 2) engage them in physical activity. Body during physical education These goals demonstrate the lifelong benefits of health-enhancing physical education. This helps children and teens grow into active, lifelong adults.

3.2 The principles of the training program

The principles of a training program are the guidelines that make training effective. Successful athletes not only train hard but also train effectively. The principles of a training program are as follows:

1. Specificity: Specificity means making training specific to the sport or activity being played or performed, to the movements, muscles, and energy systems that are used in that sport or activity.

2. Progressive overload: Progressive overloading refers to gradually increasing the amount of overload to achieve greater fitness without risking injury. What is used in overloading?

1) Frequency: The frequency of your exercise depends a lot on how much time you must dedicate to exercise, what your goals are, and what your fitness level is like currently,

2) Intensity: This component describes how hard you work during exercise. Intensity can be measured in several ways, including heart rate, perceived exertion, or the type of exercise performed (e.g., light, moderate, or vigorous). Adjusting intensity helps to target specific fitness goals.

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3) Time: This refers to the duration of each exercise session. Time can vary depending on the type of exercise and individual fitness goals. For cardiovascular exercise, a typical recommendation is to aim for at least 30 minutes per session, while strength training sessions might focus on completing a certain number of sets and repetitions.

4) Type: This component specifies the kind of exercise being performed, such as aerobic (running, swimming), strength training (weightlifting, resistance exercises), flexibility (yoga, stretching), or balance exercises. The type of exercise should align with your fitness goals and personal preferences.

3. Recovery: Recovery refers to the decline in fitness levels when you stop exercising, and it can take up to three times longer to get back to your previous fitness levels.

4. Tedium: Tedium is the boredom that can arise from training the same way every time. It is necessary to have a varied training program to maintain high motivation levels.

By following these steps, educators can develop effective training programs that meet the needs of learners and facilitate meaningful learning experiences (Greenleaf et al., 2009).

Related Research

For primary school students practicing Sanda Wushu, incorporating SAQ (Speed, Agility, and Quickness) training can be especially advantageous. According to Walankar P and Shetty J (2020), SAQ training contributes to the development of the neuromuscular system, which is essential for improving motor skills and overall body coordination. By including SAQ training in their routine, young Wushu practitioners can accelerate the development of the physical and cognitive skills needed to excel in the sport while promoting overall athletic development.

Sharma's (2023), research has demonstrated that SAQ (Speed, Agility, and Quickness) training can significantly enhance physical fitness, including improvements in vital capacity, which is essential for young athletes to optimize their performance, the benefits of SAQ training are particularly noticeable in areas that support overall athletic ability: 1) Vital Capacity: Vital capacity, or the maximum amount of air a person can exhale after taking a deep breath, is critical for endurance and sustained performance in sports. SAQ training, with its focus on dynamic movements, can improve cardiovascular and respiratory function, enabling young athletes to maintain higher energy levels during competition; 2) Enhanced Physical Fitness: SAQ drills involve high-intensity, functional exercises that improve key physical fitness components like strength, speed, agility, and quickness. These exercises demand fast muscle activation and efficient oxygen use, which can contribute to improved aerobic and anaerobic capacities in young athletes; 3) Overall Athletic Development: For young athletes, particularly in sports like Sanda Wushu, developing agility, speed, and quickness is critical. SAQ training builds these essential skills while also improving lung capacity and endurance, allowing students to perform at higher intensities for longer durations.

Siramaneerat and Chaowilai (2020), studies have shown that SAQ (Speed, Agility, and Quickness) training can lead to significant improvements in various physical fitness metrics that are crucial for the dynamic movements required in Sanda Wushu. According to), these key fitness components include: 1) Hand Force: SAQ training enhances upper body strength and hand force, which are essential for delivering powerful strikes and blocks in Sanda Wushu. The increased force production enables athletes to execute techniques with greater impact and efficiency during combat; 2) Counter Movement Jump: This is a measure of lower body explosive power. SAQ drills that involve jumping, sprinting, and sudden changes in direction improve an athlete's ability to generate explosive force, which is critical for quick, high jumps, as well as powerful kicks and takedowns in Sanda Wushu; 3) Flexibility: Flexibility is vital for performing high kicks, dodging, and other dynamic movements in martial arts. SAQ exercises often incorporate dynamic stretching and flexibility drills, which improve the range of motion, reducing the risk of injury and enabling more fluid, agile movements during training and competition. These improvements in hand force, countermovement jump, and flexibility translate directly into better performance in Sanda Wushu, where speed, power, and agility are key to success.

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Trecroci et al (2022), research has found that short-term SAQ (Speed, Agility, and Quickness) training can enhance both cognitive and physical performance, suggesting that it can also improve the mental agility and quick decision-making skills required in combat sports like Sanda Wushu, these benefits include: 1) Cognitive Performance: SAQ training challenges the brain by requiring athletes to process information quickly and react to changing stimuli. This improves cognitive functions such as attention, reaction time, and decision-making speed, all of which are essential in combat sports where split-second decisions can determine success; 2) Mental Agility: The dynamic nature of SAQ drills, which involve fast-paced movements and rapid transitions, forces athletes to remain mentally sharp. This training helps improve their ability to adapt to unpredictable situations and make quick tactical decisions during competition; 3) Physical Performance: SAQ training not only enhances physical attributes like speed, agility, and power but also helps athletes execute techniques more efficiently by synchronizing their cognitive and physical responses. This is particularly valuable in combat sports where both mental and physical coordination are needed for precise strikes, blocks, and counterattacks.

Summary of Review Literature

Wushu was a traditional martial art of China. It was a very popular sports activity among the Chinese and many other countries people. It could be used for health, competition, and beauty. Chinese government assigns every level of education to include Wushu into the curriculum to give a chance to students learn and practice. Wushu has developed into various types of movements and called different names in martial arts such as “gosh”, “gong fu” and “kung-fu”, and modern Wushu is modern “Taolu” and “Sanda”

SAQ was the exercise to improve speed, agility, and quickness. SAQ was a technique for training workouts to improve athlete acceleration, deceleration, reaction time, and coordination. It is also important for improving foot speed, quickness, speed changes, and directional change. Each of these skills enhances athletic performance. SAQ training was a system of dynamic movement and guidelines when creating the importance of motor abilities to enhance the ability of the individual to be more skillful in faster movement. SAQ was applied to sports training in various sports such as badminton, table tennis, soccer, fencing, boxing taekwondo because it could improve all-around sports performance. At present, SAQ is developing many techniques and types of exercise, some innovative special equipment to be exercise devices such as ladder drill, low hurdle, nine squares exercise plate, cones, etc. It could be advantageous to apply to a wushu teaching program to improve physical fitness and wushu skills.

Conceptual Framework

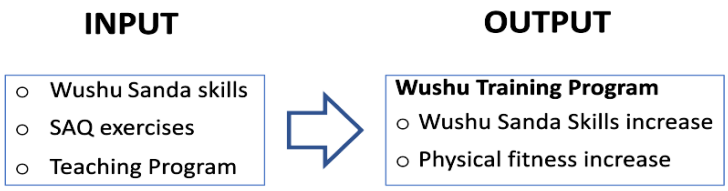

Figure 1 Conceptual Framework

Methodology

Research Tools: The research in this research is as follows:

1. In- depth interview form to collect the opinion and suggestion from nine experts by in dept. Interview on the selected SAQ exercise that is most suitable to add to the Wushu teaching program for Wushu grade 5th students.

2. Physical fitness tests for beginners include 1) Vertical jump, 2) Hexagon test, and 3) Reaction times.

3. Wushu skills test for beginners includes: 1) Side kick and 2) Takedown

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4. The wushu training program which added SAQ exercise to improve physical fitness and wushu skills

Population and Sample: Population: The students in primary schools in Guangzhou were more than 150 schools, semester 1, academic year 2024. The researcher purposively selected the school, there were 3-4 classes in grades 1st through grade 6th, and the total was 18 classes. The samples were the grade 5th had 4 classes, the researcher selected two classes by random sampling and got the classes with 25 students each, a total of 50 students then tested with physical fitness tests and Wushu skills, ranked the scores and divided into two groups. The students were ranked according to their scores on the test from low to high in the order of 1-50, and then the sample was divided into 2 groups of 25 people each through the matching (matching) method.

Control group	1, 4, 5, 8, 9, 12, 13, 16, 17, 20, 21, 24, 25, 28, 29, 32, 33, 36, 37, 40, 41, 44, 45, 48, 49
Experimental group	2, 3, 6, 7, 10, 11, 14, 15, 18, 19, 22, 23, 26, 27, 30, 31, 34, 35, 38, 39, 42, 43, 46, 47, 50

Data Collection: In-depth interviews of nine experts through face-to-face, and video calls depending on the convenience of the experts. Validate the validity of research tools on Interviewing form, questionnaire, Wushu teaching program quality of program, student eval proposed methodological. By Index of Item Objective Congruence method. The pretest, mid-test, and post-test on physical fitness tests and Wushu skills tests during the experiment operation.

Data Analysis: Data will be analyzed by descriptive statistics on mean and standard deviation, independent t-test, one-way ANOVA replated measurement, and Bonferroni.

Results

The researcher prepared the data and then carried out the statistical analysis. Analyze the results of the analysis, presenting them as a table to accompany the essay as follows:

Research objective

1. To study the effects of SAQ exercises add in a wushu training program for the primary schools students
2. To compare physical fitness and wushu skills between the control group and the experimental group.

Table 1 Mean comparison between the experiment and control groups with the pretest of the Wushu Sanda skills test, by t-test independent.

Variables	Exp. G	Cont. G	95% Confidence Interval of the Difference		t	p
	$\bar{X}$ ± SD	$\bar{X}$ ± SD	lower	Upper		
Side Kick (score)	11.96±2.30	11.20±2.10	-2.01	0.49	-1.22	.23
Take down (score)	6.12±1.48	6.72±1.46	-2.42	1.44	1.44	.16

*P<.05

Table 1 showed that all of the Wushu Sanda skills pairwise were not significantly different.

Table 2 Mean comparison between the experimental and control groups with the posttest of the Wushu Sanda skills test, using t-test independent.

Variables	Exp. G	Cont. G	95% Confidence Interval of the Difference		t	p
	$\bar{X}$ ± SD	$\bar{X}$ ± SD	lower	Upper		
Side Kick (score)	21.60±2.81	18.80±2.57	-4.33	-1.27	-3.68	.01*
Take down (score)	13.24±0.83	9.40±1.00	-4.36	-3.32	-14.77	.01*

*P<.05

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Table 2 showed that all of the Wushu Sanda skills pairwise were significantly different. Therefore, the speed agility and quickness exercises added to the training program can improve Wushu Sanda's skills, such as sidekick and take down in primary school students.

Table 3 The mean comparison of the fitness test between the experimental and control groups with the pretest of the physical fitness test using a t-test independent.

Variables	Exp. G	Cont. G	95% Confidence Interval of the Difference		t	p
	$\bar{X}$ ± SD	$\bar{X}$ ± SD	lower	Upper		
Vertical Jump	12.32±1.44	12.56±1.58	-0.62	1.09	.56	.58
Hexagon test	13.06±0.27	13.05±0.29	-0.18	0.14	-.19	.84
Reaction time	0.46±0.05	0.48±0.05	-0.01	0.05	1.37	.18

*P<.05

Table 3 shows that all of the physical fitness tests pairwise were not significantly different.

Table 4 The mean comparison of the fitness test between the experimental and control groups with the post-test using a t-test independent.

Variables	Exp. G	Cont. G	95% Confidence Interval of the Difference		t	p
	$\bar{X}$ ± SD	$\bar{X}$ ± SD	lower	Upper		
Vertical Jump	17.36±1.38	14.52±1.87	-3.77	-1.90	-6.10	.01*
Hexagon test	12.54±0.41	12.16±0.36	-.60	-.17	-3.55	.01*
Reaction time	0.39±0.04	0.46±0.04	.04	.09	5.37	.01*

*P<.05

Table 4 showed that all of the fitness tests pairwise were significantly different (*p<.05). Therefore, the speed agility and quickness exercises added to the training program can improve the fitness of primary school students. It can be seen from the results of the vertical jump test, hexagon test, and reaction time test.

Table 5 Mean comparison of Wushu Sanda skills tests within the experimental group by using one-way ANOVA repeated measurement and Bonferroni post hoc.

Dependent variables / Test		Bonferroni			$\bar{X}$± SD	F	p
		Mean Difference	Std. Error	p			
Side kick skill							
Pre-test	Mid test	-6.00	.58	.01*	11.96±2.30	104.86	.01*
	Post-test	-9.64	0.75	.01*			
Mid test	Pre-test	6.00	0.57	.01*	17.96±1.43		
	Post-test	-3.64	0.68	.01*			
Post-test	Pre-test	9.64	0.75	.01*	21.60±2.81		
	Mid test	3.64	0.68	.01*			
Take down skill							
Pre-test	Mid test	-2.80	0.15	.01*	6.12±1.48	593.21	.01*
	Post-test	-7.12	0.27	.01*			
Mid test	Pre-test	2.80	0.15	.01*	8.92±1.15		
	Post-test	-4.32	0.19	.01*			
Post-test	Pre-test	7.12	0.27	.01*	13.24±0.83		
	Mid test	4.32	0.19	.01*			

*P<.05

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Table 5 showed that all Wushu Sanda skills in the experimental group had a significant difference (*p<.05) between the pretest & mid-test, pretest & posttest, and mid-test & posttest. Therefore, the speed agility and quickness exercises added to the training program can improve Wushu Sanda's skills in primary school students.

Table 6 Mean comparison of SAQ test within the experimental group by using one-way ANOVA repeated measurement and Bonferroni post hoc.

Dependent variables / Test		Bonferroni			$\bar{X} \pm$ SD	F	p
		Mean Difference	Std. Error	p			
Vertical jump-test							
Pre-test	Mid test	-0.76	0.15	.01*	12.32±1.44	338.32	.01*
	Post-test	-5.04	0.21	.01*			
Mid test	Pre-test	0.76	0.15	.01*	13.08±1.29		
	Post-test	-4.28	0.26	.01*			
Post-test	Pre-test	5.04	0.21	.01*	17.36±1.38		
	Mid test	4.28	0.25	.01*			
Hexagon test							
Pre-test	Mid test	0.08	0.07	.79	13.06±0.27	20.06	.01*
	Post-test	0.52	0.09	.01*			
Mid test	Pre-test	-0.08	0.08	.79	12.97+0.28		
	Post-test	.435	0.09	.01*			
Post-test	Pre-test	-.523	0.09	.01*	12.54±0.41		
	Mid test	-.435	0.09	.01*			
Reaction time (sec)							
Pre-test	Mid test	0.04	0.02	.01*	0.46±0.05	634.24	.01*
	Post-test	0.07	0.02	.01*			
Mid test	Pre-test	-0.04	0.02	.01*	0.42±0.05		
	Post-test	0.03	0.02	.01*			
Post-test	Pre-test	-0.07	0.02	.01*	0.39±0.04		
	Mid test	-0.03	0.02	.01*			

*P<.05

From table shows that the fitness test, vertical jump test, hexagon test, and reaction time had a significant difference (*p<.05), pretest & mid-test, pretest & post-test, and mid-test & post-test. Another Hexagon test found that the pretest & mid-test had no significant difference.

Conclusion

The result found that 1) The comparison showed a significant difference p<.05 between experimental and control groups in Wushu Sanda skills (side kick and takedown) and physical fitness (vertical jump test, hexagon test, and reaction times). 2) The comparison between experimental and control groups, Wushu Sanda skills and physical fitness pairwise were significant differences p<.05. Therefore, SAQ training can improve fitness and Wushu Sanda skills in primary school students.

Discussion

In this study, Wushu Sanda skills (side kick and takedown) in the experimental group were better than in the control group because the effectiveness of the SAQ exercises added to the Wushu Teaching

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Program was that specific training exercise drills, training loads such as training volume, intensity, and recovery time were appropriated and supported the subject's physiology adaptation (Boompa, 2018). The study in SAQ found that Speed, agility, and quickness (SAQ) training was a specialized form of exercise designed to enhance these three critical physical attributes, which are essential for sports like Sanda Wushu. For primary school students practicing Sanda Wushu, SAQ training can be particularly beneficial as it helps in the development of the neuromuscular system, thereby improving motor skills and overall body function (Walankar & Shetty, 2020).

Research has shown that SAQ training can significantly improve physical fitness, including vital capacity, which is crucial for young athletes to perform at their best (Sharma (2023) Moreover, studies have demonstrated that SAQ training can lead to significant improvements in physical fitness metrics such as hand force, countermovement jump, and flexibility, which are essential for the dynamic movements required in Sanda Wushu (Siramaneerat and Chaowilai, 2020). Furthermore, short-term SAQ training has been found to improve both cognitive and physical performance, suggesting that it can also enhance the mental agility and quick decision-making skills needed in combat sports (Trecroci et al, 2022Therefore, incorporating SAQ training into the training regimen of primary school students practicing Sanda Wushu can provide a comprehensive approach to developing their speed, agility, and quickness, ultimately contributing to their overall athletic performance and success in the sport.

Recommendation

Recommendation for this research

Investigate Long-Term Effects: Conduct a follow-up study to assess the long-term retention of the improvements observed in Wushu Sanda's skills and specific fitness in these youth students.

Explore Different Skill Levels, Extend the research to include Wushu Sanda practitioners of varying skill levels (e.g., intermediate, advanced) to determine if the training effects are consistent across different levels of expertise.

Recommendation for further research

Compare Different Training, conduct a study comparing the effects of training methods to determine the optimal for enhance Wushu Sanda's performance.

Analyze Biomechanical Changes, and utilize biomechanical analysis to examine the specific kinematic and kinetic changes that occur in Wushu Sanda techniques and physical movements as a result of training.

References

Bailey, R. (2006). Physical Education and Sport in Schools: A Review of Benefits and Outcomes. *Journal of School Health*, 76 (8), 397-401.

Boompa, T.O. (2018). *Periodization: Theory and methodology of training*. 6th edition. Human Kinetics.

Del Vecchio, F.B., Silva, J.J.R., & Farias, C.B. (2015). Análise temporal de combates de Muay-Thai denível nacional: Efeitos da fase competitiva. *Revista de Artes Marciales Asiáticas*, 10 (1), 34–41. Doi: 10.18002/rama.v10i1.1635

Fang, F., & Xue, B. (2024). An Experimental Study of SAQ Training on the Agility and Quality of Young Wushu Students. *Studies in Sports Science and Physical Education.* 2 (2), 2959-5274.

Greenleaf, C., Boyer, E.M., & Petrie, T.A. (2009). High school sports participation and subsequent psychological well-being and physical activity: The mediating influences of body image, physical competence, and instrumentality. *Sex Roles,* 61 (10), 714–726.

Machado, S.M., Oso´ rio, R.A.L., Silva, N.S., and Magini, M. (2010). Biomechanical analysis of the muscular power of martial arts athletes. Med. Biol. Eng. Comput. 48, 573–577.

Marinkovic, D., Pavlović, S., Pelemiš, V., & Madić, D. (2022). Efekti primene treninga brzine, agilnosti i hitrine SAQ u sportu. *Nauka i obrazovanje – izazovi i perspective*, 8 (5), 235-243.

Montoya, A.H.K., Rajewski, M.J., Marshall, D.A., Neph, S.E., Pfeiffer, K.A., & Pilot, A. (2022) Virtual Exercise Intervention Improves Health and Fitness during the COVID-19 Pandemic. *Int. J. Exerc. Sci*, 15 (5), 1395–1417.

Mukhwana, J. (2024). *The complete guide for beginners.* Retrieved from https://betterme.world/articles/saq-training/.

Citation
Chen, H., Leetong-in, P., & Tasnaina, N. (2025). Development of Speed Agility and Quickness Exercises add to the Wushu Training Program for Primary School Students. International Journal of Sociologies and Anthropologies Science Reviews, 5 (2), 315-326; DOI: https://doi.org/10.60027/ijsasr.2025.5668

NASPE. (2012). *Instructional framework for fitness education in physical education. Guidance document.* Reston, VA: AAHPERD.

Oceania Kung Fu Wushu Federation, (2023). *Wushu History.* Retrieved from https://oceaniakungfuwushu.com/about-wushu/wushu-history/

Qiu, Y., Fernández-García, B., Lehmann, H.I., Li, G., Kroemer, G., López-Otín, C., & Xiao, J. (2023). Exercise sustains the hallmarks of health. *J. Sport Health Sci*, 12 (1), 8–35.

Robinson, L.E. (2011). Effect of a mastery climate motor program on object control skills and perceived physical competence in preschoolers. *Research Quarterly for Exercise and Sport*, 82 (2), 355–359.

Robinson, L.E., & Goodway, J.D. (2009). Instructional climates in preschool children who are at risk. Part I: Object-control skill development. *Research Quarterly for Exercise and Sport.*, 80 (3), 533–542.

Sallis, J.F., & McKenzie, T.L. (1991). Physical education's role in public health. *Research Quarterly for Exercise and Sport*, 62 (2), 124–137.

Schick, Monica G MS, CSCS; Brown, Lee E EdD, CSCS*D, FNSCA; Schick, Evan E MS, CSCS. (2012). Strength and Conditioning Considerations for Female Mixed Martial Artists. *Strength and Conditioning Journal*. 34 (1), 66-75, February 2012. | DOI: 10.1519/SSC.0b013e31824443e2

Sharma, M. (2023). A comparative study on the effects of Speed, Agility, and Quickness (SAQ) training on the vital capacity of school children. *Journal of Sports Science and Nutrition*. 4 (1), 116-118. Doi: 10.33545/27077012.2023.v4.i1b.159.

Siramaneerat, I., & Chaowilai, C. (2020). Impact of specialized physical training programs on physical fitness in athletes. *Journal of Human Sport and Exercise,* 11 (4), 90-94.

Subekti, N., Syaukani, A., Fatoni, M., & Subroto, S., & Raihan, A. (2021). Exercise Speed, Agility, and Quickness (SAQ) To Improve Physical Fitness. *Kinestetik : Jurnal Ilmiah Pendidikan Jasmani*. 5 (1), 95-101. Doi: 10.33369/jk.v5i1.14359.

Theeboom, M., & De Knop, P. (1997). An Analysis of the Development of Wushu. *International Review for the Sociology of Sport*, 32 (3), 267-282.

Theeboom, M., Zhu, D., & Vertonghen, J. (2017). 'Wushu belongs to the world'. But the gold goes to China. The international development of the Chinese martial arts. *International Review for the Sociology of Sport*. 52 (1), 3-23.

Trecroci, A., Cavaggioni, L., Rossi, A., Moriondo, A., Merati, G., Nobari, H., Ardigò, L.P., Formenti, D. (2022). Effects of speed, agility, and quickness training program on cognitive and physical performance in preadolescent soccer players. *PLoS One.* 17 (12), 0277683. Doi: 10.1371/journal.pone.0277683.

Walankar, P., & Shetty, J. (2020). Speed, agility and quickness training: A review. *International Journal of Physical Education, Sports and Health,* 7 (6), 157-159.

Wan, S. (2021). Challenges in the implementation of the Wushu curriculum in elementary and secondary schools. *Journal of Educational Development,* 42 (3), 112-118.

Wang, X., Zhang, Y., & Li, J. (2016). Analysis of Current Situation and Teaching Problems of Sanda in Primary and Secondary Schools. *Journal of Wuhuan Institute of Physical Education,* 50 (9), 73-77.

YunTai Shaolin International Culture and Martial School. (2024). *Learn Sanda in China.* Retrieved from https://shaolin-yuntai.com/training/sanda-sanshou/.

Zhou, J. (2018). Key problems in the course reform of Wushu and National Traditional Sports Major. *Journal of Physical Education and Sports Studies,* 35 (2), 45-50.

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