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PHYSICAL FITNESS DEVELOPMENT EXERCISES FOR MALE TABLE TENNIS PLAYERS AGED 12–13 IN HO CHI MINH CITY, VIETNAM

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Abstract:
Table tennis is one of the earliest established sports and has gained widespread popularity, attracting a large number of participants. In table tennis training and competition, physical fitness plays a fundamental role and is a key factor determining the effectiveness of technical–tactical performance as well as the improvement of athletes' competitive results. The purpose of this study was to select appropriate physical fitness development exercises for male table tennis players aged 12–13 in Ho Chi Minh City, Vietnam. The study employed research methods including literature review, expert consultation, pedagogical testing, and mathematical statistics to address the research objectives. The research participants consisted of six male table tennis players aged 12–13 in Ho Chi Minh City, Vietnam. The research has identified 26 physical fitness development exercises for talented male table tennis players aged 12–13 in Ho Chi Minh City, including 7 general physical fitness exercises and 19 professional physical fitness exercises. The application of these 26 selected exercises in practical training showed that,

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after the experimental period, the average growth rate of general physical fitness $\overline{W\%}$ reached 3.80%, and the average growth rate of professional physical fitness $\overline{W\%}$ reached 6.01%.

Keywords: exercises, physical fitness, athletes, table tennis, Ho Chi Minh City, Vietnam

1. Introduction

Table tennis originated in Europe and later spread worldwide. In the early 20th century, the sport developed strongly in Central Europe and several Asian countries, particularly Japan, before expanding to Africa, the Americas, and eventually achieving global popularity (Gu *et al.*, 2019) [1]. Table tennis was introduced to Vietnam around 1920. It was brought into the north region by Chinese merchants, while introduced in the south area by French colonists. During this period, table tennis was regarded mainly as a recreational sport reserved for the upper class. In 1924, the sport had developed rapidly in major cities such as Hanoi, Hai Phong, Hue, and Saigon, and table tennis competitions began to emerge across all three regions of Vietnam—North, Central, and South [2].

At present, the table tennis movement in Vietnam has expanded widely across the country, attracting a large number of participants and contributing significantly to Vietnam's achievements at continental and international competitions. In 2004, athlete Doan Kien Quoc secured the only Southeast Asian qualification spot to participate in the Athens Olympic Games. At the 29th SEA Games in 2017, the Vietnamese men's table tennis team won the gold medal in the men's team event, ending a 22-year wait. In addition, the athletes, Vu Manh Cuong, Doan Kien Quoc, and Tran Tan Quynh, have achieved gold medals in the men's singles events. Most recently, at the 32nd SEA Games, Vietnamese table tennis created a historic milestone by winning a gold medal when Tran Mai Ngoc and Dinh Anh Hoang defeated the Singaporean pair, marking Vietnam's first mixed doubles gold medal at the SEA Games after 26 years [3]. Vietnamese youth table tennis has also made notable progress, as demonstrated by silver medals in the U18 men's and U15 women's categories. Following these achievements, the Vietnamese national youth table tennis team has begun to receive increased investment, including modern training equipment and improved nutritional support [4].

Sports training in general, and table tennis training in particular, is a complex and multifaceted process. Table tennis training does not merely focus on developing athletes' agility and speed; it also encompasses physical conditioning, technical–tactical training, moral education, psychological preparation, and the development of willpower. Among these components, professional physical fitness plays a pivotal role. The athletes with insufficient professional physical fitness are clearly seen to experience a decline in movement speed during later stages of matches, thereby reducing their ability to effectively execute technical and tactical strategies.

Physical fitness is regarded as the fundamental foundation enabling athletes to achieve performance outcomes in their chosen sport, and professional physical fitness is one of the decisive factors influencing athletic performance. Physical fitness represents an individual's natural capacity, which is progressively developed through training load and is externally expressed at varying levels. Therefore, the evaluation of physical fitness development plays a crucial role in sports training, serving as an essential basis for improving the quality and effectiveness of athlete preparation.

Exercises aimed at enhancing physical fitness are of importance in table tennis training for young athletes. A solid physical foundation enables athletes to maintain agility, control body movements effectively, and perform technical skills with high accuracy during both training and competition. Given that table tennis is a fast-paced sport characterized by high-intensity movements and immediate reactions, physical attributes such as speed, strength, endurance, agility, and coordination play a decisive role in competitive performance.

The selection and organization of physical fitness exercises that are appropriate to age-related physiological characteristics help young athletes maintain stable postures and increase the effectiveness of technical execution. Moreover, improved physical fitness would contribute to injury prevention, accelerate recovery processes, and support the refinement of technical and tactical skills. With the aim of sustainable development in professional physical fitness for young Ping-Pong talents, a comprehensive system of physical training exercises shall be constructed through this study: "Physical Fitness Development Exercises for Male Table Tennis Players Aged 12–13 in Ho Chi Minh City, Vietnam".

The purpose of the study was to identify exercises, thereby assessing the physical fitness of male table tennis players aged 12 – 13 years, Ho Chi Minh City, Vietnam.

2. Materials and methods

2.1 Methods

The study employed the following research methods:

- **Document analysis method:** This method was used to collect information related to the research topic on physical fitness development exercises for young table tennis athletes through the synthesis and analysis of reference materials, published studies, and scientific journals. The results of the literature review provided the theoretical basis for addressing the research objectives.
- **Survey method:** This method aimed to gather information by consulting experts and specialists with experience in teaching and coaching young table tennis athletes. The collected opinions served as a basis for selecting appropriate physical fitness development exercises for male table tennis athletes aged 12–13 in Ho Chi Minh City, Vietnam.

- **Pedagogical testing method:** This method was applied to collect data through the administration of physical fitness assessment tests to the research participants at the initial stage and after the experimental intervention.
- **Statistical analysis method:** This method was used to process, analyze, evaluate, compare, and discuss the data obtained in the study with the support of SPSS software (version 22.0).

2.2 Participants

2.2.1 Research participants

The study involved six male talented table tennis athletes aged 12–13 from District 1, Ho Chi Minh City, Vietnam. All participants used the shakehand grip.

2.2.2 Survey respondents

A total of 16 individuals participated in the survey, including 10 table tennis coaches, 2 sports administrators, and 4 table tennis lecturers from Ho Chi Minh City University of Sport and Ho Chi Minh City University of Physical Education.

3. Results

To select appropriate physical fitness development exercises for male talented table tennis athletes aged 12–13 in Ho Chi Minh City, the study was conducted through the following steps:

- **Step 1:** Establishing principles for selecting physical fitness development exercises in table tennis teaching and training.
- **Step 2:** Compiling a set of physical fitness development exercises used in table tennis teaching and training.
- **Step 3:** Conducting a survey to select suitable physical fitness development exercises for male talented table tennis athletes aged 12–13 in Ho Chi Minh City.
- **Step 4:** Evaluating the effectiveness of the selected exercises on developing physical fitness for male talented table tennis athletes aged 12–13 in Ho Chi Minh City.

3.1. Principles for selecting physical fitness development exercises in table tennis training

The selection of physical fitness development exercises for the research participants was based on the following principles.

- **Principle 1:** Practical relevance.
  The selected exercises have a clear practical orientation toward developing sport-specific physical fitness for male table tennis athletes aged 12–13. Accordingly, the exercises should focus on physical qualities that are characteristic of table tennis and appropriate for the target group.

- **Principle 2: Feasibility**
  The selected physical fitness development exercises are feasible for the research participants and suitable for the available training facilities. In addition, they should be appropriate to the technical level and the psychological and physiological characteristics of the athletes.

- **Principle 3: Systematic and integrated approach**
  The content, organizational forms, and training load of the exercises are systematically coordinated to comprehensively influence the development of sport-specific physical fitness. This principle ensures consistency with practical training conditions while maximizing strengths and addressing limitations in specialized physical training.

- **Principle 4: Effectiveness**
  The selected exercises demonstrate high effectiveness in improving sport-specific physical fitness for male table tennis athletes aged 12–13.

3.2. Compilation of the exercises on the development of physical fitness for table tennis players

In order to select diverse and appropriate exercises to improve physical qualities for gifted male Table Tennis athletes aged 12 – 13 years old in District 1, Ho Chi Minh City, the study referred to relevant domestic and foreign documents such as: Khau Trung Hue – Sam Hao Vong – Tu Tien Sinh *et al.* (1997) [5], A.N. Amelin [6], Nguyen Quang Vinh (2003) [7], Nguyen Tien Tien (2001) [8], Hoang Trung Thanh (1995) [9], Nguyen Ngoc Cu (1998) [10], Le Thiet Can (1997) [11], Le Van An, Nguyen Quang Vinh (2018) [12], Nguyen Tuan Cuong (1999) [13], Nguyen Danh Hoang Viet (2005) [14], Nguyen Danh Thai – Vu Thai Hong (2000) [15], Nguyen Quang Vinh *et al.* (2014) [16], Nguyen Danh Thai and Vu Thanh Son (1999) [17], Nguyen Quang Vinh (2013) [18], Liang Yang (2016) [19], Pham Trung Hiep (2023) [20], Nguyen Quang Vinh, Nguyen Quang Son (2020) [21], 周星栋 (2020), [22].

In addition, the researcher also carried out field trips to observe the practice of table tennis coaching at strong clubs such as District 3, District 5, Binh Thanh District, Ho Chi Minh City, Tien Giang, Vinh Long, and so on.

Combining data from the process of observation, document reference, plus coaching experience, the author systematized 30 physical development exercises for talented male Table Tennis athletes aged 12 – 13 years old, Ho Chi Minh City

3.3. Survey for the selection of exercises on the development of physical fitness for table tennis players

Based on the synthesized results above, a questionnaire was constructed (Appendix 1). The survey was conducted twice, with a one-month interval between the two rounds.

Both surveys used the same evaluation method, identical criteria, and the same group of respondents. The response scale was defined as follows: Strongly agree (5 points), Agree (4 points), Neutral (3 points), Disagree (2 points), and Strongly disagree (1 point).

To examine the consistency between the results of the two survey rounds, the outcomes were compared using the chi-square (χ^2) test (Table 1).

Table 1: Comparison of the results of two survey rounds on physical fitness development exercises for male talented table tennis athletes aged 12–13 in District 1, Ho Chi Minh City

Exercise		**1st n = 16**		**2nd n = 16**		χ^2	P
		$\sum diem$	%	$\sum diem$	%		
1	Single-rope skipping for 1 minute	68	85	69	86.25	*0.19*	*> 0.05*
2	Single-rope skipping for 2 minutes	59	73.75	58	72.5	0.16	> 0.05
3	Stair jumping for 2 minutes	55	68.75	55	68.75	*0.00*	> 0.05
4	Stair jumping for 1 minute	72	90	73	91.25	*0.15*	*> 0.05*
5	Squat jump forward for 15 m	74	92.5	74	92.5	*0.00*	*> 0.05*
6	30 m high-start sprint	73	91.25	73	91.25	*0.00*	*> 0.05*
7	1500 m run	75	93.75	75	93.75	*0.00*	*> 0.05*
8	Prone push-ups for 30 seconds	75	93.75	75	93.75	*0.00*	*> 0.05*
9	Prone push-ups for 60 seconds	50	62.5	51	63.75	0.16	> 0.05
10	Standing badminton shuttle throw	75	93.75	75	93.75	*0.00*	*> 0.05*
11	Lateral movement in a figure-eight pattern for 2 minutes	76	95	76	95	*0.00*	*> 0.05*
12	Lateral movement in a figure-eight pattern for 1 minute	75	93.75	75	93.75	*0.00*	*> 0.05*
13	Lateral ball-picking movement test 4 m × 21 balls	75	93.75	75	93.75	*0.00*	*> 0.05*
14	Lateral ball-picking movement test 4 m × 11 balls	75	93.75	75	93.75	*0.00*	*> 0.05*
15	Lateral ball-picking movement test 4 m × 42 balls	58	72.5	58	72.5	*0.00*	> 0.05
16	Reactive lateral movement with signal changes for 30 seconds	74	92.5	74	92.5	*0.00*	*> 0.05*
17	High-speed forehand stroke simulation for 1 minute	76	95	76	95	*0.00*	*> 0.05*
18	High-speed backhand stroke simulation for 1 minute	72	90	73	91.25	*0.15*	*> 0.05*
19	Alternating high-speed forehand and backhand stroke simulation for 1 minute	74	92.5	74	92.5	*0.00*	*> 0.05*
20	Forehand topspin simulation with a 1 kg dumbbell for 1 minute	73	91.25	73	91.25	*0.00*	*> 0.05*
21	Forehand topspin simulation with a 1 kg dumbbell for 30 seconds	75	93.75	75	93.75	*0.00*	*> 0.05*
22	Backhand topspin simulation with a 1 kg dumbbell for 1 minute	75	93.75	75	93.75	*0.00*	*> 0.05*
23	Backhand topspin simulation with a 1 kg dumbbell for 30 seconds	72	90	73	91.25	*0.15*	*> 0.05*
24	Forehand smash simulation with a 1 kg dumbbell for 1 minute	74	92.5	74	92.5	*0.00*	*> 0.05*
25	Forehand smash simulation with a 1 kg dumbbell for 30 seconds	73	91.25	73	91.25	*0.00*	*> 0.05*
26	Footwork jump-step forehand drive simulation for 30 seconds	72	90	73	91.25	*0.15*	*> 0.05*
27	Footwork jump-step backhand drive simulation for 30 seconds	74	92.5	74	92.5	*0.00*	*> 0.05*
28	Combined footwork and alternating forehand–backhand drive simulation for 30 seconds	73	91.25	73	91.25	*0.00*	*> 0.05*
29	Footwork jump-step forehand smash simulation with a 1 kg dumbbell for 30 seconds	75	93.75	75	93.75	*0.00*	*> 0.05*
30	Footwork jump-step forehand topspin simulation with a 1 kg dumbbell for 1 minute	75	93.75	75	93.75	*0.00*	*> 0.05*

The results presented in Table 1 indicate that all of the tests have có χ^2 calculated < χ^2 table (= 3.84) at the significance level of $P > 0.05$. Therefore, the differences between the two-sample means were not statistically significant. This demonstrates a high level of

agreement and consistency in the responses provided by experts, coaches, and sports administrators across the two survey rounds.

Based on the survey results, only exercises achieving a total score greater than 75% of the maximum possible score in both survey rounds (i.e., more than 60 points) were selected. Following this criterion, 26 physical fitness development exercises were identified for male talented table tennis athletes aged 12–13 in Ho Chi Minh City, as presented below.

3.3.1 General physical fitness (7 exercises)

- Single-rope skipping for 1 minute,
- Stair jumping for 1 minute,
- Squat jump forward for 15 m,
- 30 m high-start sprint,
- 1500 m run,
- Prone push-ups for 30 seconds,
- Standing badminton shuttle throw.

3.3.2 Professional physical fitness (19 exercises)

- Lateral movement in a figure-eight pattern for 2 minutes,
- Lateral movement in a figure-eight pattern for 1 minute,
- Lateral ball-picking movement test 4 m × 21 balls,
- Lateral ball-picking movement test 4 m × 11 balls,
- Reactive lateral movement with signal changes for 30 seconds,
- High-speed forehand stroke simulation for 1 minute,
- High-speed backhand stroke simulation for 1 minute,
- Alternating high-speed forehand and backhand stroke simulation for 1 minute,
- Forehand topspin simulation with a 1 kg dumbbell for 1 minute,
- Forehand topspin simulation with a 1 kg dumbbell for 30 seconds,
- Backhand topspin simulation with a 1 kg dumbbell for 1 minute,
- Backhand topspin simulation with a 1 kg dumbbell for 30 seconds,
- Forehand smash simulation with a 1 kg dumbbell for 1 minute,
- Forehand smash simulation with a 1 kg dumbbell for 30 seconds,
- Footwork jump-step forehand drive simulation for 30 seconds,
- Footwork jump-step backhand drive simulation for 30 seconds,
- Combined footwork and alternating forehand–backhand drive simulation for 30 seconds,
- Footwork jump-step forehand smash simulation with a 1 kg dumbbell for 30 seconds,
- Footwork jump-step forehand topspin simulation with a 1 kg dumbbell for 1 minute.

3.4 Application and evaluation of the effectiveness of selected exercises for developing physical fitness in male talented table tennis players aged 12–13, Ho Chi Minh City

The experimental program was conducted over a period of four months (from February 2024 to May 2024) with two testing phases. The initial test was carried out to determine the baseline physical fitness level of the research subjects, while the second test was administered after four months of experimentation to evaluate the effectiveness of applying the selected exercises and to assess their impact following the experimental period.

The experimental process was organized as follows:

- Experimental venue: Multipurpose Sports Club, District 1 Sports Center, Ho Chi Minh City.
- Experimental subjects: Six male talented table tennis players aged 12–13 in Ho Chi Minh City.
- Experimental duration: From 19 February 2024 to 11 May 2024.

Based on the research plan, experimental procedure, and duration, a physical fitness training program was developed for the experimental subjects using the selected system of exercises. Training was conducted three sessions per week (Monday, Wednesday, and Friday), with each session lasting 120 minutes (from 16:30 to 18:30). Over the four-month experimental period from February to May 2024, a total of 35 training lesson plans were implemented, corresponding to 70 hours of experimental training. The physical training process was strictly managed according to the prescribed lesson plans in order to eliminate external factors that could influence training outcomes, thereby ensuring that observed changes were attributable solely to the applied exercises. To evaluate the effectiveness of the selected physical fitness development exercises, post-experimental testing was conducted using physical fitness assessment tests for the research subjects. Data were collected and statistically processed. The results reflecting the improvement in physical fitness test performance of male talented table tennis players aged 12–13 in Ho Chi Minh City after the experimental intervention are presented in Table 2.

Table 2: Physical fitness of male talented table tennis players aged 12–13 in Ho Chi Minh City before and after the experimental period

No.	Test	Pre-test		Post-test				
		$\overline{X}$	S	$\overline{X}$	S	$\overline{W\%}$	t	P
General physical fitness								
1	30 m sprint from standing start (s)	4.88	0.11	4.79	0.09	1.96	8.99	<0.05
2	1500 m run from standing start (s)	363.50	11.04	352.83	15.46	3.02	5.26	<0.05
3	Standing long jump (cm)	173.50	6.95	178.83	5.78	3.05	7.02	<0.05
4	Standing trunk flexion test (cm)	17.67	2.58	19.50	2.88	9.83	3.05	<0.05
5	4 × 10 m shuttle run (s)	9.11	0.15	9.01	0.15	1.14	9.80	<0.05
$\overline{W\%}$						3.80		
Professional physical fitness								
6	Standing shuttlecock throw (cm)	688.67	9.71	704.17	8.50	2.23	8.04	<0.05
7	Single-rope skipping for 1 minute (repetitions)	142.83	4.67	151.83	4.79	6.11	12.32	<0.05
8	Angte weight swing 1.5 kg forehand for 1 minute (repetitions)	64.67	2.16	69.83	3.37	7.63	5.27	<0.05
9	Angte weight swing 1.5 kg backhand for 1 minute (repetitions)	70.17	4.83	74.67	5.20	6.21	5.08	<0.05
10	Lateral movement with ball pick-up over 4 m × 21 balls (s)	116.17	4.62	107.50	7.48	7.89	6.90	<0.05
$\overline{W\%}$						6.01		

df = n – 1, t_{05} = 2.571

3.4.1 General physical fitness

Data in Table 2 show that after the experimental period, all general physical fitness tests of male talented table tennis players aged 12–13 in Ho Chi Minh City improved. The improvements were statistically significant at P < 0.05, with calculated $t_{calculated}$ values greater than t_{table} = 2.571. The average growth rate is 3.80%. Among these, the standing trunk flexion test (cm) showed the highest improvement ($\overline{W\%}$ =9.83%), while the 4 × 10 m shuttle run (s) showed the lowest improvement ($\overline{W\%}$ =1.14%).

3.4.2 Specific physical fitness

Table 2 also indicates that after the experimental period, all professional physical fitness tests of the subjects improved with statistically significant differences at P < 0.05; $t_{calculated}$ values are all greater than t_{table} = 2.571. The average growth rate $\overline{W\%}$ is 6.01%. The lateral movement with ball pick-up over 4 m × 21 balls (s) showed the greatest improvement ($\overline{W\%}$ =7.89%), whereas the standing shuttlecock throw (cm) showed the lowest improvement ($\overline{W\%}$ =2.23%).

To evaluate the effectiveness of the selected exercises included in the physical training program for male talented table tennis players aged 12–13 in Ho Chi Minh City,

the study compared test results before and after the experiment. This comparison is essential for assessing the effectiveness of the exercise system.

Before the experiment, the majority of physical fitness tests (10 tests) showed coefficients of variation Cv < 10%, indicating good homogeneity of the sample and relatively consistent performance levels. Therefore, the selected exercises are appropriate for experimental application to develop physical fitness in male talented table tennis players aged 12–13 in Ho Chi Minh City.

The study used 10 tests (5 general physical fitness tests and 5 professional physical fitness tests) to evaluate the physical fitness development of the experimental group after the intervention.

After four months of training (02/2024–05/2024), the test results showed that the experimental group demonstrated improvements in all physical fitness tests, with statistically significant differences where $t_{calculated} > t_{table}$ at the significance level $p < 0.05$. For general physical fitness, the average growth rate reached 3.80%, in which the standing trunk flexion test (cm) recorded the highest increase ($\overline{W\%}$=9.83%), while the 4 × 10 m shuttle run test (seconds) showed the lowest increase ($\overline{W\%}$=1.14%). For sport-specific physical fitness, the average growth rate reached 6.01%, with the lateral ball-picking movement test over 4 m × 21 balls (s) showing the highest improvement ($\overline{W\%}$ =7.89%), and the standing shuttlecock throw test (cm) showing the lowest improvement ($\overline{W\%}$ =2.23%). These results contribute to confirming the effectiveness of the selected physical fitness development exercises applied to the athletes.

4. Conclusion

The study selected 26 physical fitness development exercises for male talented table tennis players aged 12–13 in Ho Chi Minh City, including general physical fitness (7 exercises) and sport-specific physical fitness (19 exercises).

The application of these 26 selected exercises in practical training showed that, after the experimental period, the performance in all physical fitness evaluation tests of the experimental group improved with statistical significance at the level $P < 0.05$. The average growth rate ($\overline{W\%}$) reached 3.80% for general physical fitness and 6.01% for sport-specific physical fitness.

Conflict of Interest Statement
The authors declare no conflicts of interest.

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References

1. Gu Y., Yu C., Shao S., Baker J.S. (2019) Effects of table tennis multi-ball training on dynamic posture control. PeerJ. 6:e6262. https://doi.org/10.7717/peerj.6262.
2. Bui Quoc Dan (2002), *Vietnamese Table Tennis International Integration*, Youth Publishing House.
3. https://vietnamnet.vn/bong-ban-viet-nam-gianh-hcv-lich-su-o-sea-games-32-2143034.html.
4. Nguyen Danh Thai (1994). *Documents of the target program: 3-year table tennis aptitude training program*, General Department of Physical Education and Sports, Hanoi.
5. Khau Trung Hue – Sam Hao Vong – Tu Tien Sinh *et al.* (1997), *Modern Table Tennis*, Physical Education and Sports Publishing House, Hanoi.
6. Amelin A.N (1985), *Modern Table Tennis*, Sports Publishing House, Hanoi.
7. Nguyen Quang Vinh (2003), *Assessment of Physical Fitness of Senior Table Tennis Players in Ho Chi Minh City after one-year training*, Master's Thesis in Education, University of Physical Education and Sports II.

8. Nguyen Tien Tien (2001), *Research on the evaluation of the training level of male table tennis players aged 12 – 15 years*, Ph.D. thesis in education, Institute of Physical Education Sciences, Hanoi, p. 14.
9. Hoang Trung Thanh (1995), *Teaching materials for table tennis coaches*, Ho Chi Minh City Department of Physical Education and Sports.
10. Nguyen Ngoc Cu *et al.* (1998), *Science of Sports Talent Selection* Materials for Sports Coach Professional Training Class, Institute of Physical Education and Sports Sciences Volume 1, p.10.
11. Le Thiet Can (1997), *Research on the application of exercises to develop physical qualities in the training process of male table tennis players 13-14 years old*, Thesis of Pedagogical Science – Psychology, Institute of Physical Education and Sports, Hanoi.
12. Le Van An, Nguyen Quang Vinh (2018), Research on physical fitness tests in the selection of 7-8-year-old male table tennis players in Tan An City, Long An Province, Journal of Sports Science and Training – Da Nang University of Physical Education and Sports.
13. Nguyen Tuan Cuong (1999), Evaluation of the training level of young table tennis players at the University of Physical Education and Sports 1 after 1 year of training, *Scientific Research Collection of the University of Physical Education and Sports 1,* Physical Education and Sports Publishing House, pp. 212 – 214.
14. Nguyen Danh Hoang Viet (2005), *Research on exercise system to improve professional endurance for male table tennis players aged 12 – 14 years*, Ph.D. thesis in education, Hanoi, pp. 4 – 8.
15. Nguyen Danh Thai – Vu Thai Hong (2000), *A Study on the Selection of Tests to Evaluate the Effectiveness of Foot Movement in Table Tennis Training and Competition in Male Athletes Aged 14 – 15*, Information on Physical Education and Sports, No. 2/2000.
16. Nguyen Quang Vinh *et al.* (2014), *Table Tennis Textbook*, VNU Press, Ho Chi Minh City.
17. Nguyen Danh Thai, Vu Thanh Son (1999), *Table Tennis*, Physical Education and Sports Publishing House, Hanoi.
18. Nguyen Quang Vinh *et al.* (2013). *Developing criteria for the selection of table tennis players aged 8 – 11 years old, in Ho Chi Minh City;* City-level scientific research project, Department of Science and Technology of Ho Chi Minh City.
19. Liang Yang (2016), Research on the Selection and Training of Table–Tennis Candidate Players in China, a Master's thesis of Master, Zhengzhou University.
20. Pham Trung Hiep (2023), *Evaluation of training level for young female table tennis players aged 16-18 years in the southern provinces after 2 years of training*, Doctoral Thesis in Education, University of Physical Education and Sports, Ho Chi Minh City.
21. Nguyen Quang Vinh, Nguyen Quang Son (2020), Study of physical fitness tests in the selection of 8 - 9-year-old female table tennis players in Ho Chi Minh city,

Vietnam, International Journal of Physical Education, Sports and Health 2020; 7 (2), 3.2020, pp 65-68.

22. 周星栋(2020),乒乓球 9～14 岁运动员阶段评价选材模型的构建, 北京体育大学的博士论文.