

Effectiveness of Forehand Near Net Short Ball Tactics in Table Tennis and The Performance of College Level Athletes in Hunan, China

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Abstract: This research the effectiveness of forehand short ball tactics near the net on the performance of Hunan college table tennis players and its relationship with coach evaluation. By analyzing background factors such as age, gender, and coaching years of coaches, their evaluation of athletes' frequency of tactical use, anticipatory reactions, ball control, and decision-making adaptations was explored. The study found that coaches generally believed that the tactic had a limited effect on improving core skills, and that gender had a significant impact in evaluating the effectiveness of tactics and athlete performance. Based on the research results, suggestions for improving tactical training for table tennis players are put forward in order to improve the actual application effect of tactics.

Keywords: Forehand Short Ball Tactics Near the Net; Table Tennis Player Performance; Tactical Training.

1. Introduction

Table Tennis is a ball game in which you take turns hitting the ball on a tennis table with a racket in your hand. Sports equipment has simple investment, strong interest, long-term Adherence to Playing Exercise, can train People's Reaction Ability and Body Coordination, and is helpful in Improve People's Heart and Lung Functions. All Countries in the World Are Constantly Exploring Table Tennis Technology and More and More World-Class Players Have Emerged. These Excellent Players Are Our Strong Opponents. For Half a Century, It Has Always Maintained Its Overall Leading Position in the World Table Tennis Arena. This is Extremely Rare in the History of World Athletics. However, We Cannot Be Immersed in Past Successes, We Must Always Keep Our Heads Clear, and We Must Look at the Movement with a Developmental and Changing Perspective. Therefore, it is necessary to Strengthen the Emphasis on Tactical Training and Take Effective Measures to Improve the Quality of Tactical Training. This Paper Attempts to find out the Application and Rules of the Tactical Winning Mode in the Game and to Improve the Theory of Table Tennis Tactical Combination Mode and the Tactical Training Content Arrangement to Better Meet the Actual Situation of the Competition.

Table tennis tactics include serving and attacking, receiving and attacking, rubbing the ball, attacking, pulling and attacking, cutting and counterattacking, and looping. Different combinations of techniques and tactics are selected in each stage of table tennis competition, and individual techniques are flexibly organized to restrain the opponent's attack. In table tennis matches, the players' playing speed is extremely fast and the ball path is changeable. The players' basic skills, quick reaction ability, and ability to control the playing skills are decisive for the results of the match. The competitive elements of table tennis determine the time and space characteristics and running conditions of a shot and also determine the quality of a shot and the weight of winning. The confrontation of the athletes on the court is essentially a

combination of the five competitive elements. In a broad sense, it refers to the method of comprehensive use of technology, psychology, and physical quality to win the competition. In the narrow sense, it mainly refers to the style of the players in the competition according to the type of opponent. Technical characteristics, and the principles and methods of using various technologies. The application of tactics in the game is the application of tactics, and the level of tactical application is the key to the victory of the athletes. Therefore, to promote the better application of the tactics, it is necessary to do the tactical training of the mobilization.

For nearly half a century, China has always occupied the dominant position in the world table tennis competition. Owing to skilled athletes and experienced coaches, as well as their exploration of advanced skills, the Chinese table tennis team (CTTT) has accomplished great achievements in international competitions. To continue to rank first in the world, CTTT has done a lot, including research skills and innovation.

Table tennis is a skill and tactics-oriented event, and the key factors in high-level competition should always be skills and tactics. Their status should be higher than that of physical ability, psychological ability, and other factors. However, there are various types of skills and tactics in table tennis. Although there are many skills and tactics analysis methods, they are still very complex. Therefore, it is difficult for athletes and coaches to master better skills and tactics before matches.

After long-term research on the CTTT and in-depth discussion with its coaches and athletes, the rules of attack in table tennis tactics are formed. In high-level table tennis matches, the effect of attack in the end line (AIEL) is very good, while the effect of attack out of the end line (AOEL) is bad. If the tactical strategies are well arranged in advance according to the rules of attack position, it can obtain better results. However, this fact is only an empirical judgment of coaches and researchers, and there is no objective method to verify the rules and explore the different effects between AIEL and AOEL. This paper researches the skills and tactical

performance of top players of CTTT in matches (6 male athletes, right-handed, attacker, the average age is 25, ranked top 30 in the world) and aims to analyze their 200 matches against varying levels of opponents in international matches in recent years, including 100 matches against high-level opponents (ranked top 30 in the world by the International Table Tennis Federation, HO) and 100 matches against low-level opponents (ranked below 30 in the world by the International Table Tennis Federation, LO).

The author hopes that this study would be helpful in the formulation of skills and tactics for top-level table tennis players and their training in the future. At the same time, it would be beneficial to transform the rules founded by CTTT in practice to the theoretical level and to make contributions to the development of table tennis skills and tactical theory.

2. Statement of the Problem

This study determines the relationship between the effectiveness of Forehand Near Net Short Ball Tactics in Table Tennis and the Performance of College Level Athletes in Hunan, China.

Specifically, it found the answers to the following:

1. What is the profile of coaches in terms of:

1.1 Age

1.2 Sex

1.3 Years of coaching/teaching?

2. What is the assessment of coaches on the table tennis athletes' effectiveness of Forehand Near Net Short Ball Tactics in terms of:

2.1 Frequency of Usage

2.2 Anticipation and Reflexes

2.3 Ball Placement Challenge

2.4 Decision-making Adaptation?

3. Is there a significant difference in the assessment of coaches on the table tennis athletes' effectiveness of Forehand Near Net Short Ball Tactics when their profile is taken as a test factor?

4. What is the assessment of coaches on table tennis athletes' performance in terms of:

4.1 Forehand Accuracy

4.2 Anticipation and Reflexes

4.3 Strategic Adaption

4.4 Performance Assessment?

5. Is there a significant difference in the assessment of coaches on the table tennis athletes' performance?

6. Is there a significant relationship between the effectiveness of Forehand Near Net Short Ball Tactics and the Performance of College Level Athletes in Hunan, China as assessed by the coaches?

7. Based on the results of the study, what tactical training program can be proposed?

3. Scope and Delimitation of the Study

The study aimed to investigate the potential correlation between the effectiveness of Forehand Near Net Short Ball Tactics in the sport of table tennis and the athletic performance of college-level players enrolled in Hunan, China. The research encompassed a cohort of 56 coaches from Hunan Normal University, Hunan University, and Central South University. The study centered on evaluating 130 table tennis athletes per school. A self-made questionnaire was utilized as a means of collecting data pertaining to coaches' views and performance outcomes of the

athletes. In support of the data gathered from the questionnaire, additional analyses were conducted.

Nevertheless, it was important to acknowledge that this study had several limitations. Firstly, the research was conducted within the confines of three universities—Hunan Normal University, Hunan University, and Central South University—which may have restricted the applicability of the results to a wider context. Additionally, the sample size utilized in this study was rather small, impacting the capacity to draw definitive conclusions that could be generalized to larger populations. Furthermore, the primary objective of the study was not to establish causal links, as it employed a descriptive correlational approach. Notwithstanding these constraints, the findings derived from this research enhanced the comprehension of the possible connection between tactical approach and performance in table tennis among college-level athletes at Hunan Normal University.

4. Research Design

The study utilized a descriptive correlational approach to investigate the potential association between two variables, without making any causal claims. The primary objective of this study was to examine the correlation between the utilization of Forehand Near Net Short Ball Tactics in table tennis and the athletic performance of college-level players enrolled at Hunan Normal University, Hunan University, and Central South University as assessed by the coaches. This particular design was well-suited for the purpose of collecting data that accurately represented the current characteristics and interconnections among variables within an authentic environment. The research entailed the distribution of a researcher-made questionnaire to a targeted sample of 56 coaches, with the aim of gathering data on their evaluations of the efficacy of Forehand Near Net Short Ball Tactics, the table tennis athletes' performance in matches, and their strategic adjustments. By employing descriptive statistics and conducting correlation analysis, the study aimed to offer significant insights into the potential relationship between the tactical approach employed by athletes and their performance. It was imperative to acknowledge that the descriptive correlational approach did not facilitate the establishment of causal linkages, and the outcomes were confined to the particular context of the table tennis teams at Hunan Normal University, Hunan University, and Central South University.

5. RESULTS AND DISCUSSIONS

The table above shows the respondents' profiles which are categorized by sex, age, and years of experience in coaching table tennis.

Results revealed that, most of the participants are female with frequency of thirty six (36) and percentage of 35.7. The remaining twenty (20) participants are male.

In terms of sex, the survey found a higher proportion of female coaches, who constitute 64.3% of the respondents (36 out of 56), while male coaches represent 35.7% (20 out of 56). This indicates a notable female majority within the coaching population involved in the study.

For age, results revealed that at least twenty four (24) participants are twenty six (26) to thirty (30) years old and twenty (20) participants are twenty five years old and below with a combined percentage of 78.6. The remaining participants are from thirty one years old to forty five years old.

Table 1. Profile of the Respondents in terms of Sex, Age and Years in Teaching Table Tennis

Age	f	%
25 Years old and below	20	35.7
26 – 30 years old	24	42.9
31 – 35 years old	4	7.1
36 – 40 years old	2	3.6
41 – 45 years old	6	10.7
Total	56	100
Sex	f	%
Male	20	35.7
Female	36	64.3
Total	56	100
Years in Teaching Table Tennis	f	%
1 year and below	2	3.6
2 – 5 years	28	50.0
6 – 10 years	14	25.0
11 – 15 years	8	14.3
16 years and above	4	7.1
Total	56	100

Regarding age, the majority of the coaches are relatively young. The largest age group is those between 26 and 30 years old, accounting for 42.9% of respondents (24 out of 56). The second-largest age group is those 25 years old and younger, comprising 35.7% (20 out of 56). Combined, these two younger age groups represent 78.6% of the total respondents, highlighting a youthful coaching demographic. The remaining age groups, spanning from 31 to 45 years old, are less represented, with a decreasing trend in representation as age increases.

In terms of Years of Teaching / Coaching Table Tennis, results revealed that at least 50% of the participants are already teaching/coaching table tennis for two to five years. Similarly, fourteen (14) participants are already teaching/coaching table tennis for at least six to ten years.

Twelve participants are teaching/coaching table tennis for more than 11 years and two participants are new in teaching/coaching table tennis.

When examining the years of experience in teaching or coaching table tennis, the data reveals a diverse range of experience levels. The most represented group consists of coaches with 2 to 5 years of experience, forming half of the total respondents (50%, 28 out of 56). Those with 6 to 10 years of experience make up the next significant portion, accounting for 25% (14 out of 56). Coaches with over 11 years of experience, including both the 11 to 15 years and 16 years and above categories, collectively constitute 21.4% (12 out of 56). A small fraction, 3.6% (2 out of 56), are relatively new to coaching, having 1 year or less of experience.

Table 2. Assessment on Effectiveness of Forehand near Net Short Ball Tactics in terms of Frequency of Use

Frequency of Use	Mean	Std. Dev	Interpretation	Rank
Frequently use the Forehand Near Short Ball Tactics during my matches	1.68	.475	Disagree	2
Consistently incorporate the Forehand Near Short Ball Tactics into my match strategy.	1.61	.497	Disagree	3
Actively seek opportunities to apply the Forehand Near Net Short Ball Tactics based on the match situation.	1.53	.637	Disagree	4
Are comfortable adjusting my tactics during a match to maximize the effectiveness of the Forehand Near Net Short Ball Tactics.	1.53	.576	Disagree	4
Believe that consistently using the Forehand Near Net Short Ball Tactics contributes to my overall match performance.	1.78	.686	Disagree	1
Overall	1.63	.483	Disagree	

Legend: 4.00-3.51 Strongly Agree, 3.50-2.51 Agree, 2.50-1.51 Disagree, 1.50-1.00 Strongly Disagree

The table shows the assessment of participants in terms of Effectiveness of Forehand near Net Short Ball Tactics with regards to Frequency of Use. Results revealed that, participants unanimously disagree on the Frequency of Use with overall mean value of 1.63 and standard deviation of 0.483. This could mean that, frequency of use as tactic may not be an indicator or factor in terms of Forehand Short Ball Effectiveness.

The data, as shown in Table 2, reveals a consistent trend across all statements related to the use and perceived effectiveness of the Forehand Near Net Short Ball Tactics. Notably, the participants uniformly disagreed with the statements regarding the frequency and strategic

incorporation of these tactics in their matches. This is evidenced by the following mean values and corresponding standard deviations:

For the statement 'Frequently use the Forehand Near Short Ball Tactics during my matches', the mean was 1.68 with a standard deviation of 0.476.

Regarding 'Consistently incorporate the Forehand Near Short Ball Tactics into my match strategy', the mean was 1.61, with a standard deviation of 0.497.

The statement 'Actively seek opportunities to apply the Forehand Near Net Short Ball Tactics based on the match situation' had a mean of 1.54 and a standard deviation of 0.637.

On 'Are comfortable adjusting my tactics during a match to

maximize the effectiveness of the Forehand Near Net Short Ball Tactics', the mean was 1.54 with a standard deviation of 0.576.

Lastly, 'Believe that consistently using the Forehand Near Net Short Ball Tactics contributes to my overall match performance' had a mean of 1.79 and a standard deviation of 0.686.

The overall mean value for all statements combined was 1.63, with a standard deviation of 0.483. These results fall into the 'Disagree' category based on the rating scale (4.00-3.51 Strongly Agree, 3.50-2.51 Agree, 2.50-1.51 Disagree, 1.50-1.00 Strongly Disagree).

The uniformity in disagreement across all statements suggests a collective perception among the participants that the frequency of using the Forehand Near Net Short Ball Tactics is not a significant factor contributing to its effectiveness in matches. This indicates that coaches may perceive other factors as more critical in determining the success of these tactics in table tennis. Therefore, the study implies that frequency of use may not be an adequate indicator of the effectiveness of the Forehand Near Net Short Ball Tactics in the context of competitive table tennis matches.

The analysis of attack rules in table tennis tactics, also conducted by Zhang, et al (2013), underscores that the success rate of different attacking strategies varies depending on their implementation in specific match situations. This study highlighted that certain attack positions and timings significantly influenced scoring rates. It suggests that the effectiveness of table tennis tactics is intricately linked to the context of their application, rather than just their frequency of use.

6. Conclusion

1.The data indicates a trend towards younger and female-dominated coaching in table tennis, suggesting a shift in training approaches and perspectives.

2.Coaches generally view Forehand Near Net Short Ball Tactics as not significantly enhancing essential table tennis skills.

3.Gender influences coaches' perceptions of tactical effectiveness, while age and experience do not show a significant impact.

4.The consensus among coaches is that these specific tactics don't substantially improve athletes' performance, pointing to a need for revised training methods.

5.Gender differences in assessing performance underline the impact of gender on coaching strategies.

6.A strong link exists between mastery in specific tactics and overall performance in athletes, highlighting the value of focused skill training.

7. Recommendations

1. It is recommended to improve tactical training to better meet the current standards of competitive play, especially considering the general skepticism about the effectiveness of Forehand Near Net Short Ball Tactics.

2. Considering the diverse backgrounds of coaches, it is suggested to adopt a variety of coaching methodologies to address the evolving aspects of the sport effectively.

3. Coaches should promote Skill-Specific Training. Emphasis should be placed on developing specific skills, such as ball placement and decision-making adaptation, to enhance player performance.

4. It is important to develop coaching strategies that are sensitive to and incorporate the differing perspectives and techniques of both male and female coaches.

5. There should be continuous Professional Development for Coaches. Coaches should be encouraged to pursue ongoing professional development and learning, regardless of their tenure in coaching.

6. Plan Research-Backed Training Methods. Implementing training methods that are supported by current research and empirical data is advised to ensure effective training.

7. There should be individualized athlete coaching. Coaching and training should be tailored to the individual needs of each athlete, moving away from a generalized approach.

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