ISSN 2618-1576 Vol. 6, Issue 4: 19-29, DOI: 10.25236/FSR.2024.060404

Tennis Skills Improvement Training: By Analysis of Carlos Alcaraz's Scoring in the 2023 Wimbledon Final

Zijun Yao[1,a,*]

[1]*School of Physical Education and Health, Hainan Tropical Ocean University, Sanya, Hainan, China*
[a]*15956622413@163.com*
[*]*Corresponding author*

Abstract: *In the Wimbledon men's singles final held in July 2023, Carlos Alcaraz emerged victorious against the seven-time champion Novak Djokovic, securing a 1-6, 7-6(6), 6-1, 3-6, 6-4 scoreline and claiming his second Grand Slam title in men's singles. This study focuses on the scoring patterns and situation of the men's singles final in Wimbledon 2023, featuring Carlos Alcaraz. It employs video replay analysis, literature review, video statistics, mathematical analysis, and comparative analysis using Djokovic's data to examine the scoring characteristics. Our research provides guidance on training, including: Enhance training in serving accuracy and stability; Improve the ability to capitalize on key moments; Focus on controlling winning points and minimizing unforced error.*

Keywords: *Carlos Alcaraz; Wimbledon final; Scores; Match Analysis*

1. Introduction

China's competitive sports will undergo a significant transition from reform and development to high-quality development during the "14th Five-Year" sports development plan period. With the strong support of national policies, international tennis events like the China Open and Shanghai Masters are thriving in China. The outstanding performances of Chinese female tennis players, including Li Na, on the global stage have propelled Chinese tennis to new heights. The remarkable successes of Chinese female tennis players, such as Li Na, in the global tennis arena have propelled Chinese tennis to unprecedented heights [1]. In 2023, male players like Wu Yibing, Zhang Zhizhen, and Shang Juncheng achieved significant milestones in ATP professional tournaments, including their first tour championships and reaching the Masters Top 8.

Despite some breakthroughs made by China's male tennis players, there remains a noticeable gap when compared to the world's top-ranked players. They still have a considerable distance to cover in order to establish themselves in today's global men's tennis arena [1]. Consequently, it is imperative to enhance the analysis and research on the scoring patterns, techniques, and tactics employed by the world's leading tennis players. This will serve as a valuable resource for the training and competitions of the upcoming generation of Chinese tennis players, enabling them to better leverage their strengths during matches.

Alcaraz, with the continuous emergence of new talents, stands out as the unrivaled top player among the new generation in men's tennis worldwide. Given his remarkable accomplishments within a few years of turning professional, it is of utmost importance to engage in profound and long-term research into Alcaraz's winning strategies at the 2023 Wimbledon tournament. Analyzing his strengths and critical factors for success in these championships will contribute to the advancement and growth of men's tennis in China. There is limited research on Alcaraz's scoring, technical abilities, and tactical outcomes [2]. The majority of research focuses on the "Big Three" in tennis, but there is a need to shift attention towards the scoring, technical abilities, and tactical characteristics of Alcaraz in the Wimbledon final. Exploring his scoring attributes will provide valuable insights for the training and development of men's tennis in China. Alcaraz, at the age of 19, accomplished the remarkable feat of defeating Nadal and Djokovic, who have long dominated men's tennis, thus becoming the first player born in the 2000s to achieve such a victory. Alcaraz's playing style, tactics, and rhythm are worthy of study and emulation. As tennis gains popularity in China and junior tennis competitions flourish, an increasing number of young players are embracing the sport and pursuing professional careers. So in our research, by comparing Alcaraz's

ISSN 2618-1576 Vol. 6, Issue 4: 19-29, DOI: 10.25236/FSR.2024.060404

scoring, technical abilities, and tactical data from Wimbledon, we can analyze his scoring attributes, explore the key factors contributing to his championship victory, and provide a summary with recommendations that will serve as a valuable reference for youth tennis training and competition in China.

2. Related Research

Tennis originated with European missionaries and later gained popularity among European aristocrats before gradually evolving into a professional sport. It has achieved a high degree of professionalization and continues to evolve. Currently, there are over 300 prestigious tournaments held worldwide throughout the year, spanning all five continents. On average, there are more than 60 professional tournaments from January to November, encompassing a duration of 11 months or approximately 45 weeks. Tennis has thus become one of the most widely-watched global sporting events [3].

2.1. Study of Tennis Technique and Tactics

Sports technology refers to the methods of movement that effectively utilize the player's physical abilities in real competitive environments [4]. The same principles apply to tennis, where tactics are developed based on the player's skill level, with technology providing the foundation for tactical development and tactics enabling the full utilization of technology. According to Nikki S. Kolman and et. al, most literature on tennis research falls into three categories: (1) technical skills, (2) tactical skills, and (3) integrated technical and tactical skills. Strong evidence suggests that a player's technical skills (e.g., ball speed and, to a lesser extent, ball accuracy) and tactical skills (e.g., decision-making, anticipation, tactical knowledge, and coping strategies) vary based on their performance level. Furthermore, winning a point in a match largely depends on the tactical decisions made to execute a specific stroke (i.e., technical execution) [5]. In their study, Zeng Fanfan and Li Qingyou examined the scoring patterns of top tennis players worldwide, including those from China, and identified disparitiesin scoring methods among Chinese tennis players. Based on their findings, they proposed several suggestions to enhance performance, including focusing on serving practice, improving the success rate of the initial serve, increasing serving speed and angle, enhancing serving aggressiveness, empowering athletes to take the initiative in scoring, and improving return shot efficiency [6].

Currently, there is no unified interpretation of the concept of tennis technique and tactics, both in China and other countries. Numerous scholars approach the study of tennis technique and tactics from diverse aspects, perspectives, and dimensions, each with their own distinct focus.

2.2. Study of the Technical and Tactical Aspects of Lawn Tennis Matches

Bulent Kilit and Ersan Arslan demonstrated that playing tennis on grass courts leads to greater enjoyment and lower perceived exertion levels compared to hard courts. Furthermore, grass court surfaces were found to be more effective than hard courts in enhancing physiological responses, time motion, and match characteristics [7]. Caroline Martin examined the technical and tactical proficiency of outstanding male singles tennis players on three court surfaces across six dimensions: hitting line, hitting landing, points, sets, discs, and court competition process. The study revealed variations in the utilization of technical and tactical skills depending on the court type. Further investigation is required to understand the technical and tactical characteristics of exceptional male singles tennis players on these court surfaces and their impact on winning strategies [8]. PrietoLage Iván discovered that the highest performance in a player's first serve was observed on hard courts, followed by red clay. Moreover, the longest carry of the first serve achieved the highest efficiency on grass, followed by hard courts. As for the second serve, the best outcomes were observed on red clay, then grass, and finally hard courts. In terms of long rallies, hard courts demonstrated the highest performance, followed by clay and grass [9].

2.3. Study of the Technical and Tactical Aspects of Alcaraz's Tennis

Wang Chengyi analyzed the technical and tactical skills of Alcaraz. Firstly, he acknowledged Alcaraz's aggressive playing style, enabling him to deliver higher quality winning points. Additionally, Alcaraz's fast forehand and supportive abilities prove advantageous during baseline confrontations. Secondly, Alcaraz exhibits exceptional movement techniques, allowing him to be well-prepared when receiving serves and facilitating his ability to respond, save the ball, and execute forehand attacks during baseline confrontations. Lastly, Alcaraz possesses versatile technical and tactical skills that contribute to

ISSN 2618-1576 Vol. 6, Issue 4: 19-29, DOI: 10.25236/FSR.2024.060404

his ability to score points [10]. Zhang Jun observed that Alcaraz demonstrates various serve variations within the re-pointing zone. The opponent's backhand frequently encounters Alcaraz's second serve, while the forehand draw dominates the third shot. During the serve-receive phase, Alcaraz exhibits a strong ability to receive serves and displays a high success rate in breaking the opponent's serve. Alcaraz primarily employs an offensive serve-receiving strategy. In the holding stage, Alcaraz secures victories through impactful forward hits and rising shots, exerting significant pressure with both his forehand and backhand strokes.

In summary, Carlos Alcaraz made history at the age of 19 years and 4 months by becoming the youngest ATP World No. 1 after winning the men's singles championship at the Grand Slam as the first player born after 2000. In 2023, he experienced a muscle spasm during the French Open semifinals due to psychological stress, resulting in a loss to the eventual champion, 36-year-old Novak Djokovic. However, Alcaraz made a strong comeback in July at the Wimbledon Open, where he defeated the seven-time champion Djokovic in the finals. Djokovic secured his second Grand Slam title at Wimbledon in 2023. Alcaraz's highly offensive tactical play and agile pace have garnered a large fan base. By conducting a comparative analysis of his performance data in the Wimbledon final, we can explore his scoring, technical, and tactical characteristics. This analysis can provide valuable insights for the training and development of men's tennis in China.

3. Our Purposed Method

This study investigates Carlos Alcaraz's scoring performance in the 2023 Wimbledon final. The research employs video observation, mathematical and statistical analysis, and comparative analysis methods. Specifically, the following approaches were adopted:

- Video observation method: by watching the video of the final of 2023 Wimbledon Alcaraz repeatedly, while recording the scoring and technical and tactical data of the whole match, and statistics and organization, comparing and analyzing the relevant data, scoring situation analysis and research.

- Mathematical and statistical method: through the observation and recording of the video of the 2023 Wimbledon Alcaláz final, the data of the whole match are classified and summarized, and the imported data are analyzed and processed accordingly by entering the data into the SPSS.20 and related statistical software, to find out the data that have research value for this thesis and to carry out in-depth research and analysis. In order to ensure the accuracy and feasibility of the statistical results, the final data statistics and analysis.

- Comparative analysis method: through the comparative analysis method, this paper, in order to better analyze Alcaraz's scoring situation, and Djokovic's data for horizontal and vertical comparison, will collect the various data indicators, to find out the differences in the values of the corresponding indicators, and summarize the relevant conclusions.

4. Results and Discussion

4.1. Analysis of Alcaraz's Service Points

Serve is the only technical action in the game that is not directly interfered by the opponent, and it is completely dependent on the individual skill and physical condition of the serving team. A good serve not only helps the player to gain an advantage in the match, but also directly wins points for the serving side [11]. As shown in Table 1, the 20-year-old youngster Alcaraz defeated 23-crown Grand Slam winner Novak Djokovic in five sets of 1-6, 7-6(6), 6-1, 3-6, 6-4 in 4 hours and 46 minutes to win the first Wimbledon title of his career, breaking the monopoly of the four Fernand Mu's domination of Wimbledon title for 20 years and ending the opponent's 27 consecutive Grand Slam victories, 34 consecutive victories in Wimbledon, and 10-year undefeated record in Wimbledon Center Court, winning the Wimbledon title. 10 years undefeated record, won his second career Grand Slam men's singles title. From the table data, the entire game Alcaraz's fastest serve 132 miles per hour, an average of 121 miles per hour, an average of 102 miles per hour, a hair into the ball rate of 64.7%, a hair to win the ball rate of 70.2%, Alcaraz serve in a better state and more stable, a hair to win the ball rate is an important guarantee of the game victory; from the total number of serves to look at, Novak Djokovic than Alcaraz more than the total number of serves. Kovic than Alkalas more than 34 times, the two sides serve straight to 29 points, 30 points, but from a hair, two hair score rate, the whole game Djokovic's hair is not good, did not take advantage of the hair advantage, and Alkalas obviously to Djokovic's hair caused a lot of pressure with a very strong

ISSN 2618-1576 Vol. 6, Issue 4: 19-29, DOI: 10.25236/FSR.2024.060404

into the power, in the five-disc game, the face of a young Alkalas, it is obvious Djokovic Kovic did not do well enough, lost the game, the total score of 338 points, De Jiao won 166 points, Alcaraz won 168 points, with a slight advantage of 2 points won the game; more than dozens of tie-breaks in the game, to De Jiao caused a lot of difficulties and physical pressure, even if the hard to keep the game, but also very difficult to win the game.

Table 1: 2023 Wimbledon final basic stats.

	Alcaraz	Novak Djokovic
Total points scored	168	166
Average first serve speed	121 mph	118 mph
Average second serve speed	102 mph	98 mph
Fastest serve	132 mph	127 mph
Distance covered (M)	6606.5m	6195.2m
Coverage/Points (M)	19.8	18.5
Points at the net	25	33
Total number of serves	150	184
Points scored on straight serves	30 (20%)	29 (16%)
First-serve scoring rate	64.1%	62.7%
Winning percentage of first serve	70.2%	61.9%
Second serve winning percentage	50.0%	51.9%

4.1.1. Analysis of Alcaraz's Serve Drops

The ability to control the drop of the serve is a crucial aspect of a tennis player's serving proficiency. The accurate placement of the serve can provide significant tactical advantages and directly influence the game's outcome. Furthermore, athletes can control the opponent's range of movement by skillfully placing the serve [12].

The data presented in Table 2 reveals the first and second serve placement and scoring statistics for Alcaraz and Djokovic. Throughout the game, Alcaraz delivered 9 aces and 7 double faults, while Djokovic had 2 aces and 3 double faults. Notably, Alcaraz's aces were primarily achieved on his first serve, with a higher first serve scoring rate of 86% compared to 66% on the second serve. However, his second serve scoring rate was only 50%, resulting in 56 points on second serve and 28 points on second serve. Conversely, Djokovic exhibited a more balanced distribution of aces between his first and second serves, with a relatively consistent scoring rate. Alcaraz's serve placement showed greater variation and complexity, demonstrating significant disparities between his first and second serve landings, whereas Djokovic's serve placement followed a more conventional pattern. Regarding the first serve placement, Alcaraz exhibits a relatively even distribution across the court, whereas Djokovic's first serve is primarily concentrated in the outer corner and middle area, with minimal placement in the inner corner. For the second serve placement, Alcaraz predominantly targets the chase zone, followed by the outer corner, and rarely utilizes the inner corner. In contrast, Djokovic's second serve placement is more balanced, with a focus on the chase zone, followed by the inner corner, and relatively fewer serves directed to the outer corner. Alcaraz's serve placement demonstrates greater variation and complexity between the first and second serves, while Djokovic's serves adhere to a more conventional pattern.

Table 2: Serve drops, points statistics

Serve Basics Ackroyd	Total	Score %	ACE Balls %	Outside Corner %	Chase %	Middle %
Alcaraz Total Serves	150	94 (66%)	9(6%)	52(35%)	54(36%)	44(29%)
Alcaraz First Serve	94	66 (70 %)	8(9%)	35(37%)	27(29%)	32(34%)
Novak DjokovicSecond Serve	56	28(50%)	1(2%)	17(30%)	29(48%)	12(21%)
Novak DjokovicTotal Serves	184	110(60 %)	2(1%)	69(38%)	38(21%)	77(42%)
Novak Djokovic First serve	118	73(62%)	2(2%)	53(45%)	9(8%)	56(47%)
Novak Djokovic Second serve	66	37(56%)	0(0%)	16(24%)	29(44%)	21(32%)

ISSN 2618-1576 Vol. 6, Issue 4: 19-29, DOI: 10.25236/FSR.2024.060404

From table 3 serve deuce court, advantage court landing point statistical analysis can be seen, Alcaraz's serve landing point is relatively balanced, deuce court of the middle and advantage court of the body of the relatively few hair, a win rate and the rate of entry is very high, serve stable landing point concentration, in their own serve, the use of serve landing point of the change and uncertainty, to Dejoux put pressure on the loss of accurate judgment on the landing point of the serve; and and Dejoux's serve The landing point is relatively obvious, more outside corners and middle of the deuce court, more middle of the advantage court, more targeted, but also more single, Alcaraz is also more defensive, and all in Alcaraz's forehand position, the rate of first-serve goals and winners are lower than Alcaraz.

Table 3: Serve deuce court and advantage court drop analysis statistics

Serve Basics	Deuce Court Chase %	Deuce Court Middle %	Deuce Court Outside Corner %	Advantage Court Chase %	Advantage Court Middle %	Advantage Court Net%
Alcaraz total score	25(32%)	36(46%)	18(23%)	27(38%)	18(25%)	26(37%)
Alcaraz First Serve	20(42%)	17(35%)	11(23%)	15(33%)	10(22%)	21(46%)
Alcaraz Second serve	5(16%)	19(61%)	7(23%)	12(48%)	8(32%)	5(20%)
Djokovic total score	41(44%)	13(14%)	40(42%)	28(31%)	25(28%)	37(41%)
Djokovic First Serve	27(44%)	2(28%)	32(52%)	26(46%)	7(12%)	24(42%)
Djokovic Second serve	14(42%)	11(33%)	8(24%)	2(6%)	18(55%)	13(39%)

4.1.2. Comparative Analysis of Alcaraz and Djokovic's Serving Phases

The serve is also an important tactical weapon. At critical moments, such as when the score is tight or when the opponent is facing a break point, a stable and powerful serve can often help the server to stabilize his position and increase his confidence in retaining the serve. When the server can successfully serve an ace or hit a winning point in these moments of high pressure, it can not only effectively win points for himself, but also create psychological pressure on the opponent.

Table 4: Alcaraz and Djokovic's serves

	Ace Balls	Double Errors	First Serves in (%)	First Serves Scored (%)	Second Serves Scored (%)	Break Points	Saves Break Points Winning percentage (%)
The first set							
Alcalas	0	1	65	61.5	14.3	4/6	0
Novak Djokovic	1	0	76.00	78.9	50	1/1	33.3
The second set							
Alcalas	3	1	65.9	72.4	66.7	0/1	33.3
Novak Djokovic	0	2	60	63.3	60	2/3	100
The third set							
Alcalas	0	0	63.2	66.7	71.4	2/2	27.3
Novak Djokovic	1	1	60.8	41.9	50	8/11	0
The fourth set							
Alcalas	3	5	55.3	71.4	29.4	3/5	0.0
Novak Djokovic	0	0	65.4	70.6	66.7	2/2	40.0
The fifth set							
Alcalas	3	0	65.5	73.7	70.0	1/1	50.0
Novak Djokovic	0	0	65.6	66.7	54.5	1/2	0.09
Total Match							
Alcalas	9	7	64.1	70.2	50.0	10/15	21.0
Novak Djokovic	7	3	62.7	61.9	56.0	14/19	33.3

In nearly five hours of five-set matches, as can be seen from Table 4, in the entire game of serving statistics, Alcaraz issued nine aces, concentrated in the second, fourth and fifth sets, three each, but also issued 7 double faults, double faults concentrated in the first, second and fourth sets, respectively, 1, 1, 5; and De Joux the entire game of 184 serving points only in the first and The third set of Lee issued 2

ISSN 2618-1576 Vol. 6, Issue 4: 19-29, DOI: 10.25236/FSR.2024.060404

aces, but also issued 3 double faults, concentrated in the second set, the third set, respectively, 3, 1; this also reflects to a certain extent the state of the game when both sides of the serve, Alcaláz in a five-set match won the second set, the third set, the fifth set, while De Joux won the first set, the fourth set, a little less than the Alcaláz. In both sides of the service game, Alcaraz appeared 15 break points, saved 10, Djokovic appeared 19 break points, saved 14, break point winning rate Djokovic slightly higher than Acar, a serve rate and winning rate Acar but significantly higher than Djokovic, compared to Djokovic, a top and more experienced serving player, Alcaraz showed more aggressiveness and Consistency. Alcaraz has a great sense of offense and is able to counter his opponents quickly, which is crucial for him to win matches. In addition, Alcaraz is able to utilize his unique angling techniques and judgment of his opponents, while demonstrating more versatility and flexibility in his serve, adjusting to his opponent's tactics and position.

4.1.3. Characterization of the Alcaraz Serve for Scoring

As shown in Table 3 and Table 4, Alcaraz scored 96 points out of his 150 serving points, including 30 points from straight serves, 66 points from 94 first serves, 64.7% of first-serve scoring rate, 70% of first-serve winners, 50% of second-serve winners, and a total of 168 points in the whole match, which indicates that Acar also scored 72 points in Deyo's service game. And due to the study of the video of the final, it is known that Alcaraz's points on serve are mainly affected by two core factors: firstly, the points from direct serves, and secondly, the performance of the offense after the serve. In the direct serve, Alcaraz usually uses some unconventional techniques to increase his scoring rate. After completing the serve, Alcaraz demonstrated the skill to quickly assess the opponent's position and reaction, using changes in ball drop and speed to create offense, thus putting pressure on the opponent, leading to improper returns or forced errors. In addition to this, Alcaraz was also adept at capitalizing on his opponent's mental changes during the serve, adjusting the speed and landing point of the serve to create errors in order to win the match.

4.2. Analysis of Alcaraz's Serve-Receive Scores

4.2.1. Comparative Analysis of Alcaraz and Djokovic's Serve Receive Phases

According to Table 5 on Alcaraz and Djokovic's serve return. Alcaraz also displays aggression in his returns. The Table 5 demonstrates Alcaraz's proficiency in employing various techniques for both offense and defense, including adept utilization of forehand, backhand, slicing, drop shots, and other technical methods. Additionally, he exhibits agility through constant footwork. In comparison to other scenarios, Djokovic prioritizes maintaining a balance between spin and depth in his return. Djokovic demonstrated exceptional ball perception and reaction speed, enabling him to swiftly discern his opponent's intentions and make suitable adjustments. Both players emphasized forehand and backhand shots in their returns, with minimal use of slices.

Table 5: Alcaraz, Djokovic serve receive and return situations

Shot types	Alcalas	Novak Djokovic
Forehands	60	40
Backhands	64	50
Forehand Slice	12	4
Backhand Slice	14	5

4.2.2. Characterization of Alcaraz's Scoring in the Serve-Receive Phase

From the data in Table 5 and the research and investigation of the final video, it is clear that Alcaraz is based on its unique serve-and-grab tactic. The spatial width of the court is fully utilized when using the outside corner serve technique, which makes it more difficult for the opponent to receive the ball on the move, thus increasing the difficulty of receiving the serve. Alcaraz has a strong sense of offense from the backhand position and is able to quickly determine the opponent's tactical intent and react quickly. Alcaraz also has the ability to adjust the timing of his serve according to his opponent's position and style of play, ensuring that Djourou is always in a passive state of defense.

Both players have shown excellent scoring instincts when it comes to serve reception, as well as the ability to bring their understanding of the game and skill to bear on the most extreme of return drops. As a result, Alcaraz has the opportunity to immediately attack himself with the power of spin when Djokovic's defense appears to be lacking.

In addition to this, Alcaraz has also shown great tactical thinking in the serve receive phase. Alcaraz

ISSN 2618-1576 Vol. 6, Issue 4: 19-29, DOI: 10.25236/FSR.2024.060404

has a knack for adapting and changing his strategy according to the opponent's situation and can incorporate this strategy into his game. This clever and quick tactical layout ensures that Alcaraz is able to perform better when hitting the ball. Alcaraz has shown quick adaptability and resilience in the intense match between serve and receive.

4.3. Analysis of Alcaraz's Scoring in the Holding Phase

4.3.1. Comparative Analysis of the Holding Phase Between Alcaraz and Djokovic

Table 6: Statistics of Alcaraz and Djokovic's scores in different rounds

	Total Score	AlcalasScore %	Winning Score%	FcdE %	UFE %	DjokovicScore %	Winning Score%	FcdE %	UFE %
Total	324	168 (50%)	62 (19%)	51 (15%)	55 (16%)	166 (50%)	32 (10%)	72 (22%)	51 (15%)
Total: 1-3 Shots	178	89 (50%)	22 (12%)	38 (21%)	26 (25%)	89 (50%)	9 (5%)	47 (26%)	25 (14%)
Alcalas Sv1-3 Shots	86	36 (76%)	18 (21%)	35 (41%)	9 (10%)	21(24%)	0(0%)	5(6%)	12 (14%)
Djokovic Sv1-3 Shots	92	24 (26%)	4(4%)	3(3%)	17 (18%)	68(74%)	9(10%)	42(46%)	13(14%)
Total: 4-6 Shots	82	37 (45%)	18 (22%)	7(9%)	13 (16%)	45(55%)	16(20%)	16(20%)	12(15%)
AlcalasSv4-6 Shots	38	13 (34%)	6 (16%)	3(8%)	7 (18%)	25(66%)	8(21%)	10(26%)	4(11%)
DjokovicSv 4-6 Shots	44	24 (55%)	12 (27%)	4(9%)	6 (14%)	20(45%)	8(18%)	6(14%)	8(18%)
Total: 7-9 Shots	36	18 (50%)	8 (22%)	3(8%)	8 (22%)	18(50%)	5(14%)	5(14%)	7(19%)
Alcalas Sv7-9 Shots	12	8(67%)	5 (42%)	1(8%)	4 (33%)	4(33%)	0(0%)	0(0%)	2(21%)
DjokovicSv 7-9 Shots	24	10 (42%)	33(13%)	2(8%)	4 (17%)	14(58%)	5(21%)	5(21%)	5(17%)
Total: 10+ Shots	38	24 (63%)	14 (37%)	3(8%)	8 (21%)	14(37%)	2(5%)	4(11%)	7(18%)
Alcalas Sv10+ Shots	14	8(57%)	5 (36%)	1(7%)	5 (36%)	6(43%)	0(0%)	1(7%)	2(14%)
DjokovicSv 10+ Shots	24	16 (67%)	9 (38%)	2(8%)	3 (13%)	8(33%)	2(8%)	3(13%)	5(21%)

* FcdE = Serves where the attempted return was a forced error, UFE=The player's score that ended with an unforced error

As a young tennis player, Alcaraz not only has powerful hitting, fast speed and quick reaction, but also excellent footwork. From the scoring data of both sides in different rounds in Table 6, it can be seen that in the first three rounds, the scores of both sides are the same, Djokovic induced the opponent to score 47 points, while Alcaraz only scored 38 points; in the 4-6 rounds, Akar scored 37 points and Djokovic scored 45 points; in the 7-9 rounds, the scores of both sides are also the same; and in the stalemate rounds of more than ten shots, Akar scored 24 points and Djokovic scored 14 points, including 14 winning points and Djokovic only 2 points, unforced errors were 8 points and 7 points respectively, and forced Djokovic to make errors for 3 points, indicating that in the long and multi-shot stalemate rounds, even if Djokovic maintained a certain stability, with the consumption of physical strength and the attack of Alcaraz, Djokovic made more active errors, Alcaraz scored more points in the stalemate stage, especially more than ten shots, and Akar was more stable; in the whole game, Djokovic induced

ISSN 2618-1576 Vol. 6, Issue 4: 19-29, DOI: 10.25236/FSR.2024.060404

the opponent to make more forced errors, which shows that Djokovic has richer skills, tactics and experience, induced the opponent to make more errors, and Alcaraz made too many passive errors. In a stalemate, Alcaraz can often break the opponent's rhythm with his excellent offensive skills and create scoring opportunities. Djokovic, as an experienced veteran, cannot deal with Alcaraz's strategies and changes well in the game. Alcaraz's solidity and depth in defensive strategy can make him and Djokovic have high-quality baseline confrontations and remain patient, thus making the opponent's return improperly and scoring winning points or causing the opponent to make mistakes.

4.3.2. Alcaraz Holding Phase Scoring Characteristics Analysis

As can be seen from Table 6, in the hold phase, 7-9 beats and more than 10 beats are appeared in Djokovic's serve more, 7-9 beats, respectively, Alcaraz serve 12 points, Djokovic serve 24 points, more than 10 beats Aka serve 12 points, Djokovic serve 24 points; but 7-9 beats Aka and Djokovic's points are 18 points, more than 10 beats Aka's points are 24 points, Djokovic's points are 14 points. The score is 14 points, first of all, Acar's winners are more, especially more than ten beats of the round, Alcaraz scored more points, which is the winners accounted for more, the difference between the two sides of the unforced errors is only 2 points, and most of them occurred in Djokovic's serve, indicating that Djokovic's serve is in general condition, Alcaraz to Djokovic's service game caused a lot of difficulties and pressure, which not only relies on the strong offensive This not only relies on strong offensive tactics, but also the ability to mislead and avoid mistakes at critical moments by changing the path of the shot and controlling the position of the depth. Secondly, Alcaraz has shown strong offense and lasting consistency in the hold. Alcaraz has the ability and patience to consistently play high quality matches against De Jong at the baseline and is not susceptible to outside interference, which is a good example of individual skill and tactical execution accuracy.

4.4. Analysis of Alcaraz's Winning Score

4.4.1. Alcaraz vs Djokovic Winning Points Comparison Analysis

In tennis, a player's ability to score winning points is often the central criterion for measuring his or her offensive ability and match efficiency. Therefore, a factor that has a direct impact on whether a match is won or lost is the percentage of points scored. Both Alcaraz and Djokovic are outstanding representatives of modern tennis, and Alcaraz's performance in scoring is particularly notable. This paper compares and analyzes the attack and defense data between the two tennis players based on video replay, using mathematical statistics, and summarizes the scoring situation and characteristics of the two through literature and other methods. Next, will do an in-depth comparison of the winning points of two athletes.

Table 7: Winning Points, Unforced Errors Analysis

	Winning points (Forehand / backhand)	Unforced error (Forehand / backhand)	Net before the score
The first set			
Alcalas	6(4/2)	13(7/5)	2
Novak Djokovic	5(3/1)	4(3/1)	5
The second set			
Alcalas	16(8/5)	17(9/7)	7
Novak Djokovic	9(6/3)	14(7/5)	7
The third set			
Alcalas	9(5/4)	14(9/5)	4
Novak Djokovic	6(3/2)	20(12/7)	7
The fourth set			
Alcalas	13(7/3)	10(3/2)	7
Novak Djokovic	9(7/2)	9(3/5)	11
The fifth set			
Alcalas	18(11/4)	8(5/3)	5
Novak Djokovic	3(2/1)	7(4/3)	3
Total Match			
Alcalas	62(35/18)	62(33/22)	25
Novak Djokovic	32(21/19)	54(29/22)	33

First of all, the comprehensive statistics show that both Alcaraz and Djokovic have performed quite well in terms of match-winning points. From the above table both sides of the winning points, unforced errors analysis, Alcaraz's winning points and unforced errors are 62 points, in which the forehand errors

ISSN 2618-1576 Vol. 6, Issue 4: 19-29, DOI: 10.25236/FSR.2024.060404

and points are higher than the backhand, while Djokovic's winning points only 32 points, unforced errors by 54 points, in which the forehand and backhand scores and errors are more balanced; the net score Djokovic is much higher than the Ace, respectively, is 33 points and 25 points. It shows that Djokovic's serve-at-net tactics scored significantly. Alcaraz was often able to hit game-winning points in crucial points in crunch time due to his shocking explosiveness and nimble and agile mobility.

Strategically, Alcaraz is very adept at utilizing his uptempo game in terms of speed and power to misdirect his opponents through powerful strikes or sudden changes in direction. On offense, Alcaraz can make quick judgments and take aggressive and effective tactical measures, while also being able to react quickly to the pace of Djokovic's serve. While Djokovic mainly focuses on adjusting the pace of the game and the mindset of his opponents, Alcaraz always utilizes precise drop shots and versatile spin strategies to make his opponents make mistakes.

4.4.2. Alcaraz Winning Score Characterization

From the statistics of the above tables 6 and 7 and the study and investigation of the video of the final match, it can be seen that in terms of the winning points of this match, Alcaraz was 62 points higher than Deyo by 30 points, of which 35 points were for forehand, 18 points for backhand, and 9 points for the others. It can be seen that forehand is the means of Alcaraz's scoring, and it was mainly concentrated in the second, fourth, and fifth set in terms of the winning points. The first thing to mention is that Alcaraz possesses the superiority of outstanding speed, responsiveness and physical fitness. Secondly, Alcaraz possesses very good ball control skills. This gives Alcaraz the ability to quickly recognize his opponent's weaknesses during the course of a match and use sudden line changes or hard shots to create errors. Alcaraz excels at attacking, defending and all-around moving the opponent using a variety of techniques and constantly running. Alcaraz's blend of speed and power in his game allows Alcaraz to display a strong offensive game in critical moments and is able to score game-winning points on a regular basis. When faced with different situations, Alcaraz is able to make the right judgment and react in a timely manner. Alcaraz has the ability to accurately analyze the opponent's stroke paths and tempo changes, and then formulate an appropriate response strategy.

Alcaraz not only has excellent serving, receiving and defending skills, Alcaraz can not only fight with his opponent near the baseline, but also create mistakes through flexible running and varied hitting methods. At the same time, Alcaraz possesses good physical conditioning, excellent physical fitness, and stable mental quality. With his all-round technical strength and diversified tactical strategies, Alcaraz has shown great adaptability and competitive advantages on the field.

4.5. Analysis of Alcaraz's Unforced Errors

4.5.1. Comparative Analysis of Unforced Errors of Alcaraz and Djokovic

An unforced error in tennis refers to an error caused by a player's own faulty execution of technique, error in judgment, or improper control when the player is not under direct pressure or compulsion from the opponent. This type of error is usually not caused by the opponent's powerful offense, but by the player's own improper return. At a high level of tennis, reducing the occurrence of unforced errors is one of the key factors in improving performance and winning percentage. Athletes usually reduce their unforced errors through technical training, psychological adjustment and tactical arrangement.

From the statistics of the above table and the research and investigation of the final video, in the whole match, although Alcaraz's unforced errors were as high as 62 points, the winning points were also 62 points, on the contrary, Djokovic's 32 points of winning points, unforced errors were as high as 54 points, and there were too many active errors, which were concentrated in the second set and the third set, which were 14 and 20 points respectively, in which the unforced errors were relatively balanced in the forehand and backhand. Backhand relatively balanced. This is not in line with Djokovic's usual style of play, who is known for his comprehensive skills, stable serve and excellent serve receive, and very few errors. Djokovic did not play to his strengths in this match, making too many unforced errors of his own, judging the direction of his opponent's offense and playing fast counterattacking tactics did not work for Acker, while Alcaraz's points were usually based on his opponent's counterattacks and attacks after improper returns.

4.5.2. Characterization of Alcaraz's Unforced Errors

A comparative analysis of unforced errors in matches between Alcaraz and Djokovic, as well as an analysis of the characteristics of Alcaraz's unforced errors, are key factors in evaluating his performance and technical and tactical level in matches. A comparative study of unforced errors in the matches of

ISSN 2618-1576 Vol. 6, Issue 4: 19-29, DOI: 10.25236/FSR.2024.060404

Alcaraz and Novak Djokovic was conducted to find out where the differences exist between the two. An unforced error is a mistake made by a player on his own initiative without being pressed by his opponent, which results in the loss of points. Such errors often reveal a player's technical soundness, mental conditioning skills, and performance in the game.

From the statistics in Tables 6 and 7 and the research and investigation of the final match video, Alcaraz's unforced errors of 62 points in the whole match, including 33 points in the forehand and 22 points in the backhand, were mainly concentrated in the first four sets, which all exceeded 10 points, namely 13, 17, 14, 10, and 8 points, respectively. Reflecting the pressure, Alcaraz's forehand errors are significantly more than backhand, especially in the key points of the key game, the second set of the steal seven games, the key points of the unforced errors more than Alcaraz.

5. Conclusion

In this match, Alcaraz first serve rate of 62.7%, first serve win rate of 70%, 150 points of the service points of 96 points, serve straight 30 points, 15 break points to save 10, 7 double faults, although double faults more than Djokovic, but issued 9 ace, which a higher first serve win rate and balanced service drop shows that Alcaraz stable serve state is an important factor in the game win; Alcaraz game total score is 168 points, which also got 72 points in Djokovic's service game, good and stable serve state and strong attack in the receiving game are good and stable. Alcalás game total score is 168 points, illustrated also in Djokovic's service game to get 72 points, good and stable serving condition and receiving game strong attack are important reasons for the game win. 2023 Wimbledon final, five-set match will be nearly five hours, the two sides of the total score difference of only 2 points, Djokovic's 15 breakpoints to cash in 5, Alcalás 19 break points to cash 5, both sides of the break efficiency is not high, but also reflects the ability of both sides to save break points, but also shows that the total score difference of only 2 points, but in the end it is Alkalas won the game, which shows that its grasp of the key points is better, but also reflects the key points of the ball striking mental state is very important. In the whole match, although Alcaraz unforced errors up to 62 points, but the winning points also up to 62 points, while Djokovic 32 points winning points, at the same time there are actually 54 points of unforced errors, the error rate is much higher than the winning points. Winning points and unforced errors have a high correlation with the winners and losers of matches, which also shows that the grasp of winning points and unforced errors is also a key factor in scoring in tennis matches.

Our suggestion is to continuously strengthen the training of serve drop and stability, to improve the rate of first-serve goals and winners, and to provide targeted training on the type of serve drop, so as to enrich the use of match strategy. Through precise control of serve drop, a good serve drop can effectively mobilize the opponent's stance, and the player can directly target the opponent's weaknesses when serving. Alcaraz is a very reflective player, able to quickly develop a corresponding strategy to the opponent's play through the opponent's performance during the match. In addition, it is important to strengthen the control of key points and target the training of the ability to score key points.In competition, as a young athlete, one needs to demonstrate a more calm and confident attitude and learn to adapt and cope with a wide variety of pressures and challenges. There is a need to develop mental resilience and skills to cope with external pressures by participating in more matches and undergoing training, which enables players to remain calm and stable at critical moments. At the same time, in order to reduce the occurrence of unforced errors, several key areas of optimization can be considered: firstly, technical training should be strengthened to ensure consistent and accurate execution of techniques. In addition, the training and strengthening of tactical awareness should be emphasized, so as to enable them to apply various tactical playing styles flexibly, quickly and accurately. Through continuous practice and simulation of the game environment, they can better understand the subtleties of technical differences, thus reducing the occurrence of unforced errors. In addition, attention should also be paid to their physical fitness, enhancing physical function, so that athletes are more adapted to the fast-changing field of play. Strengthening the psychological adjustment skills and developing a calm and confident attitude in the game is also necessary. In addition, attention should be paid to overcoming athletes' inertia and developing good psychological quality during training. Only after psychological counseling and experience can they have the ability to face the various pressures and challenges of the game more effectively, thus reducing unnecessary errors caused by emotional instability.

References

[1] Jinxia D. Women, nationalism and the Beijing Olympics: Preparing for glory[M]//Modern Sport-

ISSN 2618-1576 Vol. 6, Issue 4: 19-29, DOI: 10.25236/FSR.2024.060404

The Global Obsession. Routledge, 2013: 30-44.
[2] Ungureanu A N, Lupo C, Contardo M, et al. Decoding the decade: Analyzing the evolution of technical and tactical performance in elite padel tennis (2011–2021)[J]. International Journal of Sports Science & Coaching, 2024: 17479541241228059.
[3] Park R J. After Beijing 2008: The Need for Sports to Foster Cooperation as well as Competition in an Increasingly Global World[M]//Post-Beijing 2008: Geopolitics, Sport and the Pacific Rim. Routledge, 2013: 251-275.
[4] Dellaserra C L, Gao Y, Ransdell L. Use of integrated technology in team sports: a review of opportunities, challenges, and future directions for athletes[J]. The Journal of Strength & Conditioning Research, 2014, 28(2): 556-573.
[5] Kolman N S, Kramer T, Elferink-Gemser M T, et al. Technical and tactical skills related to performance levels in tennis: A systematic review[J]. Journal of sports sciences, 2019, 37(1): 108-121.
[6] Zeng Fanfan,Li Qingyu. Score analysis of excellent professional tennis players[J]. Hubei Sports Science and Technology,2006,(01):67-69.
[7] Kilit B, Arslan E. Playing tennis matches on clay court surfaces are associated with more perceived enjoyment response but less perceived exertion compared to hard courts[J]. Acta Gymnica, 2018.
[8] Martin C. Biomechanics of the tennis serve[J]. Tennis Medicine: A Complete Guide to Evaluation, Treatment, and Rehabilitation, 2018: 3-16.
[9] Prieto-Lage I, Paramés-González A, Argibay-González J C, et al. Match analysis in women's tennis on clay, grass and hard courts[J]. International Journal of Environmental Research and Public Health, 2022, 19(13): 7955.
[10] Wang Chengyi. Research on the Characteristics of Technical and Tactical Application of Alkalas in Competition [D]. Wuhan Institute of Physical Education and Sports, 2023.
[11] Polk T, Yang J, Hu Y, et al. Tennivis: Visualization for tennis match analysis[J]. IEEE transactions on visualization and computer graphics, 2014, 20(12): 2339-2348.
[12] McPherson S L, French K E. Changes in cognitive strategies and motor skill in tennis[J]. Journal of Sport & Exercise Psychology, 1991, 13(1).