

# Research on the Long-term Development Self-evaluation of Badminton Players Based on Adaptive Leadership Strategies

Leiming Yang<sup>1\*</sup>

<sup>1</sup> Hunan Traditional Chinese Medicine College, Zhuzhou, China

## Email Address

yangleiming722@163.com (Leiming Yang)

\*Correspondence: yangleiming722@163.com

**Received:** 17 October 2024; **Accepted:** 31 October 2024; **Published:** 18 November 2024

## Abstract:

Badminton is a sport that combines technical skill and competitive nature, and it has gradually gained attention internationally in recent years. The long-term development of athletes is the foundation for ensuring the sustained prosperity of this sport, involving various aspects such as skills, psychological qualities, and tactical understanding. Self-evaluation, as an important tool for athletes' self-awareness and self-adjustment, can help athletes identify their strengths and weaknesses, driving continuous improvement through reflection and summarization. Adaptive leadership strategies provide theoretical support and practical guidance for athletes' self-evaluation. Through this leadership approach, coaches can guide athletes in deep reflection, enhancing their self-management and adaptability. This study aims to explore the core role of self-evaluation in the long-term development of badminton players, specifically analyzing its impact on fundamental movement skills, participation in multiple sports, technical advancement, tactical understanding, and psychological training. The results indicate that the significant impact of adaptive coaching techniques emphasizes the need for coaches to modify their methods to meet the diverse and evolving needs of athletes, thereby creating a more inspiring and effective environment for growth and progress. Existing training programs provide a solid foundation for several skills. However, improving the thoroughness and precision of training, and implementing more effective self-evaluation methods, may further promote the overall growth of badminton athletes in the long run. Combining comprehensive skill development with focused and specific training is crucial for achieving long-term success in this sport.

## Keywords:

Badminton, Long-term Development, Self-Evaluation, Adaptive Leadership Strategies

## 1. Introduction

Badminton, as a sport that balances technical skills and competitive elements, has gained widespread attention and participation globally in recent years. According to

statistics from the Badminton World Federation (BWF), badminton not only has a large base of athletes and audience in Asian countries such as China, India, and Indonesia, but it is also gradually developing an active badminton culture in regions like Europe and the Americas [1]. However, as the level of competition continues to rise, ensuring the long-term development of badminton players has become an urgent issue that needs to be addressed. This concern not only relates to the growth of individual athletes but also affects the future development of the entire badminton sport. Especially in a globalized competitive environment, the comprehensive development of athletes' qualities is particularly important [2].

The long-term development of athletes is a multidimensional concept that encompasses physical fitness, technical skills, tactical understanding, and psychological qualities. In this process, self-evaluation serves as a means of self-awareness and self-adjustment, playing a significant role in the growth of athletes. Self-evaluation can help athletes identify their strengths and weaknesses, and through reflection and summarization, it can promote improvements in techniques and tactics, enhancing psychological adaptability. This process aids athletes in self-management and self-improvement, making it a key factor for achieving effective development[3].

Adaptive leadership strategies provide a theoretical foundation and practical guidance for athletes' self-evaluation. Adaptive Leadership emphasizes situational awareness and flexible responses, aiming to cultivate individuals' effective decision-making abilities when facing complex environments. For badminton players, through adaptive leadership strategies, coaches can guide athletes in deep self-reflection, thereby enhancing the accuracy and effectiveness of their self-evaluation [4]. Coaches are not only instructors but also partners in helping athletes adapt to changes and enhance their abilities. In this process, athletes can better understand themselves, clarify their development direction, and achieve higher levels of self-transcendence. Furthermore, the study of the impact of adaptive leadership on the long-term development of Chinese badminton players is rooted in the strong enthusiasm of the Chinese people for this sport and their continuous pursuit of athletic excellence [5]. Badminton holds an important place in Chinese culture, having achieved significant victories in global championships and boasting a large fan base nationwide. Therefore, understanding the influence of adaptive leadership methods on player development is crucial for maintaining China's dominant position in this sport and promoting future potential [6].

This study aims to conduct an in-depth exploration of badminton players' self-evaluation, analyzing their performance in foundational technical skills, participation in multiple sports, technical advancement, tactical understanding and decision-making, as well as psychological skills training. By examining the dynamic process of athletes' self-evaluation, we hope to reveal its significant impact on long-term development and provide theoretical references for further training and research. Particularly in terms of foundational technical skills, athletes' self-evaluation can help them identify technical shortcomings and take targeted measures for improvement; participation in multiple sports can enhance physical fitness and overall abilities, thereby affecting competition performance. Technical advancement is considered an important criterion for measuring athletes' development levels in badminton training. Athletes' self-evaluation can prompt them to regularly reflect on their technical mastery, adjust training content and pace based on actual performance, and ensure steady improvement in their skills. Additionally, cultivating tactical understanding and decision-making abilities is a crucial component of enhancing badminton players'

competitive capabilities. During competitions, athletes often face complex tactical choices, and being able to conduct effective self-evaluation aids them in post-match tactical analysis and summarization, clarifying areas for improvement, and making more rational decisions in future competitions.

## 2. Methodology

### 2.1 Study Participants

To ensure that the sample of badminton players recruited for this study is representative, this paper employs a stratified sampling method to recruit 323 research subjects from five higher education institutions in China. The specific numbers are shown in Table 1. The study protocol was approved by the Institutional Review Board of Hunan Traditional Chinese Medicine College. The investigation was conducted in strict adherence to the ethical principles outlined in the Declaration of Helsinki.

And the privacy of participants is strictly protected, and all data is processed anonymously and stored securely. Participation in the study is voluntary and participants give informed consent based on a full understanding of the purpose and risks of the study. The study focuses on the welfare of participants and measures are taken to ensure the health and safety of athletes. The use of transparent recruitment techniques ensures equal opportunities for participants from different backgrounds and promotes sample diversity.

**Table 1.** Frequencies and Percentage of Demographic Factors.

| College/University                         | Counts |
|--------------------------------------------|--------|
| Hunan University of Technology             | 65     |
| Hunan University of Technology             | 68     |
| Hunan University                           | 65     |
| Xiangtan University                        | 66     |
| Hunan University of Science and Technology | 59     |

### 2.2. Research Methods

This study employs a questionnaire survey method to collect self-assessments from badminton players regarding their long-term development. Various methods, including descriptive statistics, comparisons, and predictions, are used to analyze these assessments and explore athletes' evaluations of their long-term development in the sport. Based on the research tasks, objectives, and content of this study, a substantial amount of relevant literature and materials were reviewed. The questionnaire was designed rigorously in accordance with research methodology, adhering strictly to the requirements of questionnaire design, resulting in a draft of the survey instrument used in this study. This survey specifically aims to assess badminton players' perspectives on several key aspects of their long-term development in the sport, including Foundational Movement Skills, Participation in Multiple Sports, Progressive Technical Development, Tactical Understanding and Decision-Making, and Training in Mental Skills. Each survey factor has been carefully designed to ensure the authenticity of the views, opinions, and experiences expressed by the participants.

### 2.3. Reliability Testing of the Questionnaire

To ensure the reliability and accuracy of the questionnaire, a comprehensive validation process was conducted. This process included expert reviewers assessing content validity and performing factor analysis to establish construct validity. Additionally, the questionnaire underwent preliminary testing with a limited sample of badminton players to evaluate its clarity, comprehensibility, and acceptability. Further modifications were made as necessary. The study aims to enhance the accuracy and consistency of the results through careful and thorough selection and use of instruments. The goal of this technique is to create a reliable tool that can effectively measure participants' evaluations of their long-term development in this sport based on adaptive leadership strategies.

### **3. Assessment of the Players of their Long-Term Development in Badminton**

Table 2 assesses long-term development in badminton, focusing on core movement skills. The descriptive data show that the composite mean score was 3.41, with a standard deviation of 0.37, indicating an average evaluation. Furthermore, this suggests that they agree that they understand the significance of regular involvement in the development of fundamental movement abilities as a way of developing a firm foundation for the employment of advanced approaches and strategies in the following undertakings ( $M = 3.43$ ), actively seek feedback and direction from coaches and peers in order to improve and develop their fundamental movement skills with the goal of achieving long-term success in badminton ( $M = 3.43$ ), and recognize the importance of adhering to appropriate biomechanics and technique in fundamental badminton strokes as a means of laying a solid foundation for their long-term success in the sport ( $M = 3.42$ ). According to the responses, item numbers 4 and 10 had the greatest average score of 3.43, while item number 7 (I assume accountability for fixing certain deficiencies in my fundamental movement abilities in order to cultivate my sustained advancement and expertise in the sport of badminton) had the lowest average score of 3.37.

These results are consistent with previous research highlighting the importance of establishing FMS (fundamental movement skills) in young sports. This is crucial for immediate sports performance and for promoting lifetime physical activity and overall health. The study conducted by Duncan et al. [7] showed that treatments centered on badminton, such as the Badminton World Federation's Shuttle Time program, substantially positively impacted fundamental movement skills (FMS) and physical fitness in children. This emphasizes the significance of well-organized programs in fostering the development of these abilities. Furthermore, further research emphasizes that prioritizing athletic growth, as opposed to early specialization, enables youngsters to cultivate a more extensive repertoire of neuromuscular patterns, which are crucial for achieving future sports excellence [8].

The mean score of 3.37 for assuming responsibility in resolving inadequacies in fundamental movement skills indicates that players may only partially commit to self-directed development attempts. This is a possible area where coaches might focus on promoting self-evaluation and individual accountability within training programs. Experts in youth athletic training underline that evaluating and motivating players to take responsibility for their growth may result in deeper learning and mastery of skills [9].

To summarize, the constant recognition of the significance of FMS across several metrics demonstrates that players have a strong comprehension of the fundamental function these talents play in badminton. Coaches are advised to persist in fostering these crucial abilities and creating an atmosphere encouraging players to take initiative in improving themselves and being responsible, thereby assuring holistic long-term growth.

**Table 2.** *Assessment of Long-Term Development in Badminton in terms of Foundational Movement Skills.*

| Indicators                                                                                                                                                                                                                          | Mean | SD   | V.I                   | Rank |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|-----------------------|------|
| To improve my long-term progress in badminton, I have continually focused on acquiring proficiency in fundamental footwork and body posture skills.                                                                                 | 3.40 | 0.61 | Moderately True of Me | 7.5  |
| I acknowledge the significance of adhering to appropriate biomechanics and technique in fundamental badminton strokes as a means of establishing a robust groundwork for my sustained achievements in the sport.                    | 3.42 | 0.60 | Moderately True of Me | 3.5  |
| I actively participate in routines and physical activities designed to enhance my agility, coordination, and balance, recognizing their significance in fostering my long-term growth as a badminton athlete.                       | 3.41 | 0.65 | Moderately True of Me | 5.5  |
| I comprehend the need of consistent engagement in the development of fundamental movement abilities as a means of establishing a strong foundation for the use of advanced techniques and strategies in subsequent endeavors.       | 3.43 | 0.60 | Moderately True of Me | 1.5  |
| I am of the opinion that dedicating time and exerting effort towards the cultivation of fundamental movement skills will provide long-term benefits by fostering my holistic development and enhancement in the sport of badminton. | 3.42 | 0.62 | Moderately True of Me | 3.5  |
| I recognize the significance of including agility, flexibility, and mobility training into my comprehensive development strategy in order to mitigate the risk of injuries and enhance my overall performance in the long run.      | 3.41 | 0.60 | Moderately True of Me | 5.5  |
| I assume accountability for fixing certain deficiencies in my fundamental movement abilities in order to cultivate my sustained advancement and expertise in the sport of badminton.                                                | 3.37 | 0.63 | Moderately True of Me | 10   |
| I am dedicated to upholding a methodical approach in the acquisition of fundamental movement abilities, acknowledging their enduring significance in my progression as a badminton athlete.                                         | 3.38 | 0.68 | Moderately True of Me | 9    |
| I acknowledge the applicability of fundamental movement skills to diverse facets of badminton performance, recognizing their enduring influence on my total athletic achievement.                                                   | 3.40 | 0.59 | Moderately True of Me | 7.5  |
| I actively engage in soliciting comments and direction from coaches and peers in order to enhance and develop my fundamental movement skills, with the aim of achieving sustained success in the sport of badminton.                | 3.43 | 0.62 | Moderately True of Me | 1.5  |
| Composite Mean                                                                                                                                                                                                                      | 3.41 | 0.37 | Moderately True of Me |      |

*Legend: 1.00-1.50: Strongly Disagree (Not at All True of Me); 1.51-2.50: Disagree (Slightly True of Me); 2.51-3.50; Agree (Moderately True of Me); 3.51-4.00: Strongly Agree (Very True of Me)*

Table 3 shows an evaluation of badminton's long-term progress in terms of multisport participation. The statistics show a composite mean score of 3.42 with a

standard deviation of 0.39. The data indicates that the respondents concur that the use of a growth mentality when participating in multi-sport activities is a valuable opportunity to enhance their abilities, adaptability, and versatility for sustained success in badminton and other sports ( $M = 3.49$ ). They also appreciate the synergistic effect of engaging in multiple sports in shaping them into versatile and adaptive athletes, which will contribute to their long-term success in badminton ( $M = 3.44$ ), and incorporate a variety of experiences into their overarching strategy for long-term growth by integrating insights from numerous sports into their training and competitive endeavors in badminton ( $M = 3.44$ ). Upon examining the responses, it was determined that item number 10 had the highest mean score, while item 8 (I am willing to manage many sports and extracurricular engagements, recognizing their role in fostering my comprehensive growth and enduring satisfaction in the realm of badminton) had the lowest mean score of 3.34.

Players typically acknowledge the need to participate in numerous sports to improve their abilities, flexibility, and versatility, all of which are essential for long-term success in badminton. The research demonstrates a significant consensus on the advantages of adopting a growth mindset in multisport activities, as participants recognize that such experiences enhance their overall athletic progress ( $M = 3.49$ ). Furthermore, they value the collaborative benefits of engaging in many sports, which enhances their ability to be flexible and adaptable athletes, a crucial factor for achieving sustained success ( $M = 3.44$ ).

The players' identification of the usefulness of using experiences from other sports to influence their training and competing methods in badminton was correlated with the highest mean score. This is consistent with the conclusions drawn from the Long-Term Athletic Development (LTAD) model, which highlights the significance of engaging in many sports activities to cultivate a wide range of skills and minimize the likelihood of experiencing burnout. Engaging in many sports allows players to develop diverse motor abilities and enhance their psychological fortitude, contributing to optimal performance in their chosen sport.

On the other hand, the lowest average score (3.34) indicates a certain hesitancy or difficulties in effectively handling various sports and extracurricular activities. This may indicate a need for improved support systems or guidance to achieve a harmonious balance between multiple responsibilities, promoting holistic development. Research has shown that participating in many sports may have significant benefits in the long run. These benefits include greater social integration, collaboration abilities, and an increased likelihood of participating in sports. Participating in many sports is crucial for both athletic achievement and general personal growth, as it enables players to cultivate a wide range of abilities and experiences, contributing to their holistic development.

These results emphasize the significance of promoting players' participation in many sports throughout their formative years. Coaches and sports programs should advocate for a well-rounded approach that permits the investigation of different sports. This would greatly improve players' physical, mental, and social growth and finally result in a more gratifying and triumphant sports career.

**Table 3.** *Assessment of Long-Term Development in Badminton in terms of Participation in Multiple Sports.*

| Indicators                                                                                                                                                                                                                                    | Mean | SD   | V.I                   | Rank |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|-----------------------|------|
| I engage in a variety of sports to improve my general athleticism and physical fitness, acknowledging its enduring advantages for my growth as a badminton player.                                                                            | 3.43 | 0.62 | Moderately True of Me | 4.5  |
| I comprehend the significance of cross-training in cultivating a comprehensive range of skills that will enhance my long-term achievements in badminton and other athletic pursuits.                                                          | 3.41 | 0.57 | Moderately True of Me | 7    |
| I actively seek out opportunities to engage in diverse sports in order to expand my experiences and viewpoints, recognizing their potential to enhance my long-term progression in the sport of badminton.                                    | 3.42 | 0.66 | Moderately True of Me | 6    |
| I am of the opinion that participating in several sports will facilitate the acquisition of versatile abilities and mitigate the likelihood of exhaustion, so guaranteeing my enduring pleasure and advancement in badminton in the long run. | 3.43 | 0.60 | Moderately True of Me | 4.5  |
| I value the synergistic effect of engaging in multiple sports in molding me into a versatile and adaptive athlete, which will contribute to my long-term success in badminton.                                                                | 3.44 | 0.59 | Moderately True of Me | 2.5  |
| I engage in collaborative efforts with coaches and players from diverse sports to effectively organize training schedules and activities, acknowledging the significance of synergy in facilitating their sustained athletic development.     | 3.39 | 0.58 | Moderately True of Me | 8    |
| As a badminton player, I place a high emphasis on prioritizing rest and recovery periods between sports seasons in order to mitigate the risk of overtraining and enhance my long-term sustainability and overall well-being.                 | 3.36 | 0.67 | Moderately True of Me | 9    |
| I am willing to undertake the task of managing many sports and extracurricular engagements, recognizing their role in fostering my comprehensive growth and enduring satisfaction in the realm of badminton.                                  | 3.34 | 0.69 | Moderately True of Me | 10   |
| I proactively pursue occasions to incorporate insights gained from many sports into my training and competitive endeavors in badminton, so incorporating a range of experiences into my overarching strategy for long-term growth.            | 3.44 | 0.57 | Moderately True of Me | 2.5  |
| I use a growth mentality when engaging in multi-sport activities, perceiving it as a valuable chance to improve my abilities, adaptability, and versatility for sustained success in badminton and other sports.                              | 3.49 | 0.58 | Moderately True of Me | 1    |
| COMPOSITE MEAN                                                                                                                                                                                                                                | 3.42 | 0.39 | Moderately True of Me |      |

*Legend: 1.00-1.50: Strongly Disagree (Not at All True of Me); 1.51-2.50: Disagree (Slightly True of Me); 2.51-3.50: Agree (Moderately True of Me); 3.51-4.00: Strongly Agree (Very True of Me)*

Table 4 presents an evaluation of the long-term advancement in badminton, specifically focusing on the continuous improvement of technical skills. The table's statistics indicate that the mean score is 3.46, accompanied by a standard deviation of 0.39. This suggests that the average level of evaluation is moderate. The results indicate that the respondents acknowledge the continuous nature of developing technical skills. They are committed to consistently enhancing and refining their abilities in order to stay competitive and achieve their long-term goals in badminton

( $M = 3.49$ ), and they understand the importance of deliberate practice and repetition to improve their technical skills in badminton. They also embrace new drills and routines to challenge themselves and gradually enhance their abilities. This fosters a culture of continuous innovation and progress in the sport. Nevertheless, they firmly acknowledge their obligation to actively seek opportunities and resources to enhance their skills and knowledge in the sport of badminton in the future ( $M = 3.53$ ). Additionally, they utilize video analysis and feedback sessions to improve their self-awareness and development, identifying areas for technical improvement and tracking their progress over an extended period ( $M = 3.51$ ).

The data shows that the average score is 3.46, with a standard deviation of 0.39, indicating a reasonable degree of overall assessment. The findings indicate that players recognize the need to consistently improve their technical abilities in order to stay competitive and accomplish their long-term objectives in badminton. The individuals are dedicated to continuously improving and perfecting their skills, as seen by an average score of 3.49, which reflects this attitude. This aligns with the ideas of continuous development emphasized by several studies, which stress the need to continuously enhance skills and adapt to high-performance sports [10].

Players also recognize the significance of intentional practice and repetition in enhancing technical abilities. Adopting novel exercises and routines to push their limits and progressively improve their skills exemplifies a culture of perpetual innovation and advancement in the sport. Cynergy Sports conducted research demonstrating the effectiveness of specific training approaches, such as multi-shuttle exercises and video analysis, in developing and improving badminton abilities [11].

Furthermore, the highest average score of 3.53 for actively pursuing chances and resources to improve abilities demonstrates excellent dedication from the players towards their growth. Video analysis and feedback sessions ( $M=3.51$ ) highlight the significance of self-awareness and the recognition of areas requiring improvement, which are vital for achieving enduring athletic performance. Studies on badminton training have shown that feedback systems substantially influence skill learning. This is supported by research that has examined various feedback strategies [12].

These results emphasize the significance of creating a conducive atmosphere that promotes ongoing technical advancement and motivates players to assume accountability for their improvement. Coaches and training programs should persist in advocating for methods that increase technical skills, use contemporary training techniques, and foster a proactive attitude toward personal growth. Engaging in this practice may assist players in attaining enduring success and realizing their maximum capabilities in the sport.

**Table 4.** *Assessment of Long-Term Development in Badminton in terms of Progressive Technical Development.*

| Indicators                                                                                                                                                                                                              | Mean | SD   | V.I                   | Rank |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|-----------------------|------|
| I employ a systematic approach to deconstruct intricate techniques into more digestible steps, hence facilitating my sustained growth and refinement in the sport of badminton.                                         | 3.47 | 0.57 | Moderately True of Me | 6    |
| I proactively pursue opportunities to cultivate a robust technical proficiency in fundamental badminton strokes, acknowledging their significance in fostering my sustained achievements within the realm of the sport. | 3.45 | 0.57 | Moderately True of Me | 7    |

|                                                                                                                                                                                                                                         |      |      |                       |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|-----------------------|-----|
| I employ intentional practice and repetition in order to attain proficiency in technical skills, recognizing their significance in defining my overall growth as a badminton athlete.                                                   | 3.48 | 0.60 | Moderately True of Me | 4.5 |
| I am receptive to integrating novel drills and routines in order to push my limits and enhance my technical abilities gradually, thereby cultivating a culture of ongoing innovation and advancement in the sport of badminton.         | 3.48 | 0.59 | Moderately True of Me | 4.5 |
| In order to enhance my self-awareness and development, I employ video analysis and feedback sessions as means to discover areas for technical improvement and monitor my progress over an extended period.                              | 3.51 | 0.60 | Very True of Me       | 2   |
| To ensure responsibility in my path as a badminton player, I establish precise technical objectives and benchmarks to assist my long-term progress.                                                                                     | 3.43 | 0.58 | Moderately True of Me | 8   |
| I acknowledge the significance of modifying my technical strategy in response to varying adversaries and match circumstances, cultivating adaptability and versatility to achieve sustained achievement in the sport of badminton.      | 3.39 | 0.65 | Moderately True of Me | 9   |
| I engage in collaboration with technological experts and specialists to remain updated on the most recent advancements and optimal methodologies in badminton technique, guaranteeing a state-of-the-art approach to my ongoing growth. | 3.37 | 0.69 | Moderately True of Me | 10  |
| I perceive the development of technical skills as an ongoing process and am dedicated to consistently improving and perfecting my abilities in order to remain competitive and accomplish my long-term objectives in badminton.         | 3.49 | 0.55 | Moderately True of Me | 3   |
| I assume responsibility for my technical growth and proactively pursue resources and chances to augment my proficiency and understanding in the sport of badminton in the long run.                                                     | 3.53 | 0.57 | Very True of Me       | 1   |
| Composite Mean                                                                                                                                                                                                                          | 3.46 | 0.39 | Moderately True of Me |     |
| <i>Legend: 1.00-1.50: Strongly Disagree (Not at All True of Me); 1.51-2.50: Disagree (Slightly True of Me); 2.51-3.50: Agree (Moderately True of Me); 3.51-4.00: Strongly Agree (Very True of Me)</i>                                   |      |      |                       |     |

Table 5 provides an evaluation of the strategic comprehension and decision-making abilities in badminton over an extended period of time. The table presents information demonstrating that the composite mean score is 3.45 and the standard deviation is 0.38, suggesting an average rating. This indicates that they recognize the importance of continuously improving their understanding of tactics and decision-making in order to develop as a badminton athlete. They are committed to investing time and effort in this area ( $M = 3.50$ ). They also evaluate their tactical choices and performance to identify areas that need improvement and gradually enhance their strategic approach, thereby contributing to their ongoing development as a badminton player ( $M = 3.47$ ), and actively participate in communication and collaboration with colleagues to collectively develop game plans and strategies, recognizing the importance of teamwork in achieving long-term success in the sport of badminton ( $M = 3.46$ ). Meanwhile, they firmly concur that to attain enduring success in badminton, it is crucial for them to sustain a heightened level of mental involvement and concentration during matches. This involves effectively implementing their tactical strategies, acknowledging the need of maintaining consistent performance when facing pressure ( $M = 3.51$ ).

The assessment of badminton's strategic comprehension and decision-making capabilities reveals an average score, suggesting a widespread acknowledgment among players of the significance of consistently improving their tactical understanding and decision-making abilities. The responders stress the importance of dedicating time and effort to developing these areas, recognizing that this dedication is crucial for their advancement as badminton players. They actively assess their tactical decisions and performance to pinpoint areas for improvement, therefore gradually enhancing their strategic approach.

Furthermore, the players acknowledge the need for communication and cooperation with their teammates to create efficient game plans and tactics. The emphasis on collaboration in developing a plan highlights the significance of working together as a team to attain sustained success in badminton. The players emphasize the importance of sustaining mental engagement and attention during matches, emphasizing the crucial role of mental resilience in executing tactical tactics and maintaining consistent performance under duress.

These observations are consistent with the latest findings in sports psychology research, which highlight the importance of incorporating cognitive abilities, such as strategic thinking and decision-making, as crucial elements of top-level sports performance [13]. Moreover, research has shown that implementing collaborative strategy formulation and transparent communication among team members is crucial in attaining favorable results in competitive sports settings [14]. Athletes who want to thrive in their sport acknowledge the need to continuously evaluate and improve their techniques and develop solid mental resilience.

The results indicate that a comprehensive strategy for player growth should include tactical instruction with psychological aptitude and collaboration. This thorough method is essential for developing a versatile and flexible athlete who can excel in high-pressure circumstances.

**Table 5.** *Assessment of Long-Term Development in Badminton in terms of Tactical Understanding and Decision-Making.*

| Indicators                                                                                                                                                                                                                                             | Mean | SD   | V.I                   | Rank |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|-----------------------|------|
| Over an extended period, I continually engage in the process of comprehending strategic concepts and principles with the aim of enhancing my tactical awareness and decision-making capabilities in the sport of badminton.                            | 3.43 | 0.60 | Moderately True of Me | 6    |
| In order to enhance my long-term performance in badminton, I engage in a proactive analysis of my adversaries' strengths, weaknesses, and patterns of play. This enables me to alter my tactics and make well-informed decisions throughout matches.   | 3.42 | 0.60 | Moderately True of Me | 8    |
| I engage in situational drills and simulations as a means of enhancing my tactical abilities and efficiently implementing them in authentic match situations, so cultivating my long-term development and adaptability within the realm of basketball. | 3.45 | 0.60 | Moderately True of Me | 5    |
| I proactively engage in communication and collaboration with my colleagues to collectively formulate game plans and strategies, acknowledging the significance of cooperation in attaining sustained success in the sport of badminton.                | 3.46 | 0.59 | Moderately True of Me | 4    |

|                                                                                                                                                                                                                                                                                       |      |      |                       |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|-----------------------|----|
| I analyze my tactical choices and results to pinpoint areas that need enhancement and enhance my strategic methodology gradually, so contributing to my continuous growth as a badminton player.                                                                                      | 3.47 | 0.59 | Moderately True of Me | 3  |
| I am actively seeking instruction and input from coaches and experienced players in order to augment my tactical comprehension and decision-making abilities, recognizing their significant contribution to my sustained advancement and growth.                                      | 3.42 | 0.58 | Moderately True of Me | 8  |
| I consistently adopt a proactive stance towards acquiring knowledge and implementing tactical principles, acknowledging their importance in optimizing my capabilities and attaining my overarching objectives in the sport of badminton.                                             | 3.42 | 0.61 | Moderately True of Me | 8  |
| I eagerly accept the task of adjusting my strategies to suit various adversaries and match circumstances, perceiving it as a chance to enhance my strategic cognition and adaptability in the sport of badminton.                                                                     | 3.40 | 0.64 | Moderately True of Me | 10 |
| In order to achieve long-term success in badminton, it is imperative for me to maintain a high level of mental engagement and focus during matches. This entails efficiently executing my tactical strategies, recognizing the significance of consistent performance under pressure. | 3.51 | 0.52 | Moderately True of Me | 1  |
| I acknowledge the significance of ongoing enhancement in tactical comprehension and decision-making as a fundamental component of my enduring growth as a badminton athlete, and I am dedicated to dedicating time and exertion towards this domain.                                  | 3.50 | 0.55 | Moderately True of Me | 2  |
| Composite Mean                                                                                                                                                                                                                                                                        | 3.45 | 0.38 | Moderately True of Me |    |
| <i>Legend: 1.00-1.50: Strongly Disagree (Not at All True of Me); 1.51-2.50: Disagree (Slightly True of Me); 2.51-3.50; Agree (Moderately True of Me); 3.51-4.00: Strongly Agree (Very True of Me)</i>                                                                                 |      |      |                       |    |

Table 6 evaluates the progress of chosen badminton players in terms of their long-term improvement in mental skills training. The composite mean score is 3.48, with a standard deviation of 0.37, indicating an average ranking. Furthermore, this indicates that they acknowledge and promote a mindset that encourages the acquisition of knowledge and the ability to adapt, recognizing the importance of continuous improvement in cognitive abilities for their ongoing progress in the sport of badminton ( $M = 3.49$ ). They also prioritize mental preparedness and resilience to optimize their long-term performance and overall well-being in the sport ( $M = 3.48$ ). Additionally, they set goals and use mental imagery to maintain motivation and focus on their long-term pursuit in badminton, understanding the importance of cognitive abilities in achieving their aspirations ( $M = 3.47$ ). They strongly believe that mental skills training is crucial for their overall development as badminton athletes. They are committed to dedicating time and effort to improve their mental strength and well-being in order to achieve long-term success ( $M = 3.54$ ). They also aim to cultivate a positive and encouraging mindset that helps them overcome challenges and setbacks, thereby enhancing their overall achievements and satisfaction in badminton ( $M = 3.52$ ).

The respondents recognize the need to cultivate a mentality that welcomes continual learning and adaptation. They understand that enhancing cognitive capacities is crucial for their continued growth and progress. They highlight the importance of mental readiness and resilience, which are vital for maximizing performance and

well-being. The data demonstrates a significant dedication to defining goals and using mental images to sustain motivation and concentration, highlighting the importance of cognitive abilities in attaining their sporting ambitions.

In addition, the athletes strongly emphasize the importance of mental skills training for their overall growth, showing a commitment to improving their mental resilience and well-being. They also emphasize the need to foster a constructive and encouraging mentality to surmount obstacles, a crucial factor in their total achievement and contentment in the sport of badminton.

The results align with previous studies, highlighting the importance of mental resilience and cognitive training in athletic growth. Research indicates that mental resilience impacts an athlete's capacity to excel in high-pressure scenarios and adjust to difficult circumstances. Visualization, positive self-talk, and mindfulness are valuable techniques for improving mental concentration and resilience in athletes [15,16].

**Table 6.** *Assessment of Long-Term Development in Badminton in terms of Training in Mental Skills.*

| Indicators                                                                                                                                                                                                                                          | Mean | SD   | V.I                   | Rank |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|-----------------------|------|
| I place a high emphasis on mental preparedness and resilience in order to optimize my long-term performance and overall well-being in the sport of badminton.                                                                                       | 3.48 | 0.59 | Moderately True of Me | 5    |
| In order to properly handle stress and anxiety, I employ relaxation techniques and mental images as strategies to enhance my long-term mental health and stability in the context of badminton.                                                     | 3.47 | 0.56 | Moderately True of Me | 6.5  |
| I cultivate an optimistic and encouraging mentality that enables me to surmount obstacles and disappointments, so enhancing my long-term achievements and satisfaction in badminton.                                                                | 3.47 | 0.57 | Very True of Me       | 2    |
| I establish objectives and employ mental imagery to sustain motivation and concentrate on my enduring pursuit in badminton, acknowledging the significance of cognitive abilities in attaining my ambitions.                                        | 3.47 | 0.61 | Moderately True of Me | 6.5  |
| I foster a growth mentality that welcomes the acquisition of knowledge and the ability to adapt, recognizing the significance of ongoing enhancement in cognitive abilities for my sustained progress in the sport of badminton.                    | 3.49 | 0.57 | Moderately True of Me | 4    |
| I engage in the utilization of positive self-talk and visualization techniques as strategies to cultivate confidence and self-belief, so nurturing resilience and mental fortitude to enhance long-term success in the sport of badminton.          | 3.44 | 0.55 | Moderately True of Me | 8    |
| I am seeking assistance from coaches, teammates, and mental skills experts to enhance and perfect my mental skills repertoire, acknowledging its significance in my sustained development and achievement in badminton.                             | 3.42 | 0.62 | Moderately True of Me | 9    |
| I employ several coping mechanisms to effectively navigate high-pressure circumstances and sustain concentration during competitive matches, so ensuring sustained performance and advancement in the sport of badminton over an extended duration. | 3.41 | 0.67 | Moderately True of Me | 10   |
| To enhance my mental state and performance in badminton, I place a high importance on self-awareness and emotional management. I acknowledge the interdependence                                                                                    | 3.51 | 0.54 | Very True of Me       | 3    |

|                                                                                                                                                                                                                                                  |      |      |                       |   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|-----------------------|---|
| of mental and physical abilities in my overall growth and progress.                                                                                                                                                                              |      |      |                       |   |
| I perceive mental skills training as an essential component of my holistic growth as a badminton athlete, and I am dedicated to dedicating time and exerting effort towards fostering my mental fortitude and welfare for sustained achievement. | 3.54 | 0.57 | Very True of Me       | 1 |
| Composite Mean                                                                                                                                                                                                                                   | 3.48 | 0.37 | Moderately True of Me |   |
| Legend: 1.00-1.50: Strongly Disagree (Not at All True of Me); 1.51-2.50: Disagree (Slightly True of Me); 2.51-3.50; Agree (Moderately True of Me); 3.51-4.00: Strongly Agree (Very True of Me)                                                   |      |      |                       |   |

## 4. Conclusions

In summary, the substantial prognostic significance of adaptability in coaching, a cooperative team atmosphere, and holistic thinking in strategic planning highlights the crucial role of these elements in promoting sustained player growth. The significant influence of adaptable coaching techniques emphasizes the need for coaches to modify their approaches to address athletes' varied and evolving requirements, hence fostering a more encouraging and efficient environment for growth and improvement. And the existing training program offers a strong base in several skills. However, improving the thoroughness and precision of the training and implementing more effective self-evaluation methods might further enhance the overall growth of badminton players in the long run. Integrating comprehensive skill development with focused and specific training is crucial for achieving long-term success in this sport.

## Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

## Funding

This work was supported by 2022 Hunan Traditional Chinese Medicine College Project "Research on the Construction of a new model of Physical Medicine Education for the Elderly under the Background of Healthy China" (No. XY2022.008); 2022 Hunan Provincial Vocational Education Teaching Reform Project "Research on the Construction of Integrated Model of Traditional health Exercise Course" Academic Evaluation Contest "under the Strategy of Healthy China" (No. ZJGB2022004); 2023 Hunan Provincial Education Planning Office Project "Study on Intervention Strategy of Traditional Health Exercise Course" Academic Evaluation Competition "system in Medical colleges" (No. XJK23CTW016).

## References

- [1] Forth, J.; Zhang, J. China and the Chinese in global badminton: A partnership between authoritarianism and transnational capital. *International Journal of the History of Sport*, 2016, 33(15), 1844-1863.
- [2] Ge, L. Research on Training Status and optimization Path of Junior badminton Reserve talents in Jiangsu Province. Nanjing Institute of Physical Education, 2023.
- [3] Wu, J.Y. Research on Long-term Development-oriented Selection and Training Strategies of young badminton players [C]// Chinese Society of Sport Science. Abstract collection of the 13th National Sports Science Conference - Wall

- newspaper exchange (Sports Training Science Branch) (3). Chengdu Physical Education University, 2023, 2.
- [4] Zhu, J.; Li, L. The development and countermeasures of badminton in China under the background of “big sports” strategy. *Journal of Hubei Sports Science*, 2019, 38(3), 71-75.
- [5] Northouse, P.G. *Leadership: Theory and practice*. Sage publications, 2021.
- [6] Jiang, Y.; Chen, L.; Tan, J. The influence of government policy on the development of badminton in China. *Journal of Shenyang Sport University*, 2018, 37(2), 141-144.
- [7] Duncan M J.; Noon M.; Lawson C. et al. The effectiveness of a primary school based badminton intervention on children’s fundamental movement skills. *Sports*, 2020, 8(2), 11.
- [8] Badminton Speak. Badminton kids must develop movement and athletic skills first. Available online: <https://www.badmintonsspeak.com/badminton-tips/badminton-fitness/badminton-kids-athletes/> (accessed on 12 October 2024).
- [9] MyTPI. Why You Should Evaluate Movement in Junior Athletes. 2023. Retrieved from <https://cdn.site.mytpi.com/articles/fitness/why-you-should-evaluate-movement-in-junior-athletes> (accessed on 12 October 2024).
- [10] Balyi I.; Way R.; Higgs C. Long-term athlete development. *Human Kinetics*, 2013.
- [11] Cynergy, S. Badminton Training Methods: Identifying the Most Effective Drills and Workouts for Skill Development. 2023. Available online: <https://cynergysports.com> (accessed on 12 October 2024).
- [12] Ahmad, D.H.; Ahmad, W.N.; Mushtaq, M. Impact of Feedback Methods on Skills Learning of Badminton. *International Journal of Sports Sciences & Fitness*, 2012, 2(2).
- [13] Legg, D.; Fay, T.; Wolff, E. et al. The international olympic committee-international paralympic committee relationship: Past, present, and future. *Journal of Sport and Social Issues*, 2015, 39(5), 371-395.
- [14] Sports Coaching Review. The Role of Team Communication in Strategic Development and Performance. 2023. Available online: <https://www.tandfonline.com> (accessed on 12 October 2024).
- [15] Spolto. Building Mental Resilience: Overcoming Challenges in Badminton. Available online: <https://spolto.com/blog-details/building-mental-resilience-overcoming-challenges-in-badminton> (accessed on 12 October 2024).
- [16] Modern Badminton. Master Your Game: Essential Mental Training Tips for Badminton. Available online: <https://modernbadminton.com> (accessed on 12 October 2024).



© 2024 by the author(s); licensee International Technology and Science Publications (ITS), this work for open access publication is under the Creative Commons Attribution International License (CC BY 4.0). (<http://creativecommons.org/licenses/by/4.0/>)