

Mental Toughness and Adaptability in Game Matches Towards Resiliency of Sepaktakraw Athletes

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Abstract

Background: This study investigates how mental toughness and adaptability in game matches contribute to the resiliency of Sepaktakraw athletes in the field of competitive challenges.

Objectives: This study explored the impact of mental toughness and adaptability on the resilience of Sepaktakraw athletes facing competitive challenges.

Methods: Conducted during the 2023-2024 academic year, the research involved 60 male athletes aged 18-22 from Batangas State University, each with 4-8 years of experience in the sport. Using a descriptive-correlational approach, the study assessed athletes' perceptions of mental toughness and resilience through the 4C's Psychological framework—Challenge, Commitment, Control, and Confidence.

Results: Findings highlighted the role of mental toughness and adaptability in strengthening athletes' resilience. Consequently, the study proposed tailored training activities focused on enhancing these traits in gameplay. Presented in tabular form, each activity includes specific objectives designed to help athletes develop coping mechanisms for setbacks, maintain focus, and improve mental toughness.

Conclusion: By engaging in these targeted training exercises, teamwork, and community interactions, athletes are expected to build the resilience needed to overcome competitive challenges and achieve success in Sepaktakraw.

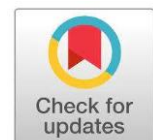
Keywords: mental toughness, adaptability in game matches, resiliency.

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INTRODUCTION

Sepaktakraw, a highly competitive sport originating in Southeast Asia, demands physical prowess and mental fortitude from its athletes (Kiram et al., 2023). In this peculiar sport, players must cope admirably under pressure to adjust to changing game dynamics. The performance and resiliency of Sepaktakraw athletes are significantly influenced by two crucial psychological qualities, which are mental toughness and adaptability (Pandian et al., 2023).

In Sepaktakraw, the mental attributes of athletes have gained increasing recognition as pivotal factors in their overall success and resilience. In the fast-paced, fiercely competitive world of sports, an intangible quality known as "mental toughness" is frequently credited with enabling athletes to perform well under pressure, endure hardship, and keep their attention on task despite outside distractions. The concept of mental toughness has become recognized as a critical success factor. Moreover, mental toughness is defined as a collection of values, attitudes, emotions, and cognitions that influence how individual approaches, responds to, and appraises demanding events to achieve goals consistently (Gucciardi, 2020). Resilience is a necessary quality for athletes to meet the demands of competitive sports and maximize their recovery. Research has demonstrated that perseverance is essential to success and greatness in sports (Albert et al., 2024; Cormier et al., 2024).

Furthermore, adaptability can help athletes maintain or enhance their performance in changing situations by allowing them to adjust their goals, strategies, and techniques as needed. Adaptability can also help athletes gain a competitive edge over less adaptable opponents. In addition, according to Alderton (2015), those who embrace development and the organizations they work for are improving, while those who oppose it are regressing. A continuum from "fear of change" to "freedom to change" can be used to quantify adaptability. Even though there is considerable separation between the two, every stage aids in developing several "superpowers" that will accelerate a person's progress toward being an expert adapter. By addressing these challenges through psychological strategies, physical care, and team dynamics, Sepaktakraw athletes can enhance their mental toughness and adaptability during game matches. Athletes with this enigmatic quality seem to overcome odds with their abilities, displaying unmatched resilience, focus, and performance even in the face of tremendous pressure. These strategies can enhance an

athlete's mental resilience and contribute to their overall well-being, promoting a healthier and more sustainable approach to the sport of Sepaktakraw.

In research on mental toughness and adaptability, many studies have revealed that these factors are essential in improving athletes' performance and resilience to competitive pressure. However, research that explores explicitly how mental toughness and adaptability influence each other in the context of the game of Sepaktakraw is limited. Some studies highlight the importance of mental toughness in maintaining focus, overcoming challenges, and adaptability to adjust to changing game conditions. However, research has not been conducted that holistically connects these two aspects to Sepaktakraw athletes' specific resilience in the face of yet-to-be pressure. Furthermore, most studies have focused on popular sports such as soccer or basketball (Clark et al., 2023; Pocius & Malinasukas, 2024; Pocius & Malinauskas, 2024; Pucsok et al., 2024; Tibbert et al., 2023). At the same time, only some have addressed the application of mental toughness and adaptability strategies in sports that demand high physical agility and endurance, such as Sepaktakraw. This suggests a research gap that needs to be bridged to understand how these two factors can be developed to enhance the resilience of Sepaktakraw athletes specifically, especially in the context of high competition challenges.

This study aims to examine the role of psychological attributes, specifically mental toughness and adaptability, in enhancing the performance and resilience of Sepaktakraw athletes. Despite the recognized importance of these traits in sports, there remains a need to extend the evidence base to understand better how resilience aids in stress management and recovery processes among elite athletes. By examining the relationship between mental toughness, adaptability, and resilience, this research seeks to reveal how Sepaktakraw players cope with the intense demands of their sport. This research will improve knowledge in the broader sense of the mental attributes that support athletic success, offering valuable insights into how athletes can maintain peak performance amidst the pressures and challenges inherent in competitive sports.

METHODS

Study Design and Participants

Data were collected from men's Sepaktakraw athletes at Batangas State University TNEU Campuses during the Academic Year 2023-2024 to examine the manifestation level of mental toughness and the extent of adaptability in-game matches. A sample size of 60

athletes was selected using simple random sampling with proportional allocation across different campuses to ensure representative coverage. The participants in this study were all male, aged between 18 and 22 years, with 4 to 8 years of experience in Sepaktakraw. Their educational levels ranged from first-year to fourth-year college students.

Men's Sepaktakraw athletes were chosen as respondents since they are considered the most credible representatives for this study group. It is assumed that these athletes are well-equipped with the knowledge and skills of adaptability in-game matches using the 4C's model (Challenge, Commitment, Control, and Confidence) as they manifest mental toughness. This mental toughness can aid in developing a positive attitude towards resiliency, which is crucial for their performance and overall athletic development.

Research Instruments

In this study, researchers used a researcher-made questionnaire divided into two components. The first section assessed the respondents' manifestation level of mental toughness in control, challenge, confidence, and commitment, each with 5 item statements, totaling 20 items. This questionnaire was developed based on the 4C's model of mental toughness (Strycharczyk & Clough, 2014), which encompasses four key components: Challenge, Commitment, Control, and Confidence.

The second part of the survey determined the respondents' extent of adaptability level as to progression with 5 item statements, and regression with 5 item statements with a total of 10 items. To interpret the responses, the following norms were used (Table 1).

Table 1. Norms and Verbal Interpretation

Numerical Value	Mean Ranges	Verbal Interpretation
4	3.50-4.00	Highly Manifested / Adaptable
3	2.50-3.49	Manifested / Adaptable
2	1.50-2.49	Slightly Manifested / Adaptable
1	1.00-1.49	Least Manifested / Adaptable

These norms provide a framework for categorizing the levels of mental toughness and adaptability based on the respondents' scores.

Data Analysis

Descriptive statistics, including means and standard deviations, were used to summarize mental toughness and adaptability manifestation levels. Pearson's correlation coefficient was applied for inferential statistics to determine the relationships between mental toughness and adaptability. Additionally, multiple regression analysis was

conducted to examine the predictive power of mental toughness components on adaptability levels.

The suitability of the statistical analyses was assessed based on the data distribution and the assumptions of each test. Pearson’s correlation is appropriate for determining linear relationships between continuous variables, and multiple regression analysis is suitable for exploring predictive relationships among variables.

RESULTS

Table 1 shows the Sepaktakraw athletes’ manifested level of mental toughness in terms of control. The table presents mean scores ranging from 3.32 to 3.57. The respondent’s notable emphasis is on displaying how the athletes can adhere to disciplined training methods and maintain focus during the performance, with the highest mean score of 3.57 and a standard deviation of 0.77. Athletes aiming for consistent excellence and peak performance in their respective sports can benefit significantly from closely adhering to structured training regimens, maintaining focus during competitive events, and employing disciplined training methods. However, exerting control over actions to influence the outcome of matches got the lowest mean score of 3.32 and a standard deviation of 0.83. With this result, it is concluded that the perception of an athlete is regarding their capacity to influence outcomes through their actions. Overall, it reveals that the athletes’ mental toughness in control was highly manifested, with a mean score of 3.42 and a standard deviation of 0.80. This indicates that it positively influences their performance during game matches by maintaining composure, which helps athletes conserve mental and physical energy throughout the game.

Table 1. Manifestation level of Mental Toughness in terms of Control

Item Statements	Mean	Standard Deviation	Verbal Interpretation
1. Manage my emotions during competitions for optimal performance.	3.40	0.83	Manifested
2. Regulate my thoughts and feelings during challenging situations to maintain composure.	3.35	0.80	Manifested
3. Stay calm and compose regardless of the circumstances to navigate challenges effectively.	3.45	0.79	Manifested
4. Exert control over my actions to influence the outcome of my matches.	3.32	0.83	Manifested
5. Adhere to disciplined training methods and maintain focus during performances.	3.57	0.77	Highly Manifested
Composite Mean	3.42	0.80	Manifested

The data presented in [Table 2](#) reveals the respondents' level of manifestation of mental toughness in terms of challenge. The table shows that the items acquired mean scores ranging from 3.33 to 3.52. Sepaktakraw athletes highly manifest levels of mental toughness when they take risks to pursue and achieve athletic goals; this results in a mean of 3.38 and a standard deviation of 0.83. In-game matches, risk-taking reflects athletes' willingness to venture beyond their comfort zones, embrace uncertainty, and confront challenges head-on in pursuit of their athletic aspirations; whether facing formidable opponents or navigating high-pressure situations, athletes must cultivate a mindset devoid of fear or hesitation. By embracing risk-taking, athletes cultivate a fearless mindset that allows them to perform at their peak despite adversity. However, exerting control over my actions to influence the outcome of my matches got the lowest mean score of 3.32 and a standard deviation of 0.83. With this result, it is concluded that the perception of an athlete is regarding their capacity to influence outcomes through their actions. In general, mental toughness in terms of challenge is evident among Sepaktakraw athletes, obtaining a mean of 3.45 with a standard deviation of 0.78. This embraces a growth mindset exhibiting heightened resilience in navigating setbacks and viewing them as opportunities for learning, growth, and refinement.

Table 2. Manifestation level of Mental Toughness in terms of Challenge

Item Statements	Mean	Standard Deviation	Verbal Interpretation
1. Relish challenging opponents as they provide valuable opportunities for growth and improvement.	3.52	0.75	Highly Manifested
2. Push my limit and excel further when confronting challenges during matches.	3.38	0.83	Manifested
3. Excel in high pressure situations during matches to showcase my skills and perform at my best.	3.47	0.77	Manifested
4. View setbacks as temporary obstacles rather than permanent failures.	3.33	0.82	Manifested
5. Take risks to pursue and achieve my athletic goals.	3.55	0.72	Highly Manifested
Composite Mean	3.45	0.78	Manifested

The data presented in [Table 3](#) shows the Sepaktakraw athletes' level of mental toughness in terms of confidence. It is obtained that mean scores range from 3.47 to 3.57. The results revealed that athletes who believe in their abilities and preparation have a high chance of success even in the most challenging circumstances. This indicates that the athletes are not afraid and confident in facing difficult situations or opponents. In-game matches, the athletes possess a firm conviction in their capabilities and have made the necessary preparations to excel. However, the results revealed that the Sepaktakraw

athletes who trust in their skills and dedication to excel in every aspect of the sport have the lowest mean score of 3.47. It can be interpreted that athletes may possess a deep-seated belief in their abilities and commitment to excellence. However, their confidence may manifest differently when influenced by external factors such as competition pressure, team dynamics, or perceived expectations. The least favored item revealed that athletes view setbacks as temporary obstacles rather than permanent failures, with a weighted mean score of 3.33 and a standard deviation of 0.82. As a result, the respondents' manifestation level of mental toughness regarding confidence was highly manifested, with a mean score of 3.51 and a standard deviation of 0.75.

Table 3. Manifestation level of Mental Toughness in terms of Confidence

Item Statements	Mean	Standard Deviation	Verbal Interpretation
1. Deliver exceptional performance during critical moments within a match.	3.50	0.72	Highly Manifested
2. Face challenges with confidence and strive for excellence.	3.53	0.72	Highly Manifested
3. Trust in my skills and dedication to excel in every aspect of the sport.	3.47	0.81	Manifested
4. Rely on my preparation, skills and mental resilience to perform at my best when the stakes are high.	3.50	0.75	Highly Manifested
5. Believe in my abilities and preparation to achieve success even in the most challenging circumstances.	3.57	0.72	Highly Manifested
Composite Mean	3.51	0.75	Highly Manifested

Table 4 shows the respondents' level of manifestation of mental toughness in terms of commitment. It is obtained that mean scores range from 3.52 to 3.65. Sepaktakraw athletes highly manifest levels of mental toughness when they believe in their abilities and preparation to succeed even in the most challenging circumstances; this results in a mean of 3.38 and a standard deviation of 0.66. Sepaktakraw athletes acknowledge that excellence is not attained overnight but through sustained effort over an extended period. However, the results revealed that delivering exceptional performance during critical moments within a match and relying on their preparation, skills, and mental resilience to perform at their best when the stakes are high as the lowest mean score of 3.47. In summary, the mental toughness displayed by Sepaktakraw athletes, particularly in terms of commitment, was highly manifested, with a mean score of 3.57 and a standard deviation of 0.71. This indicates that Sepaktakraw athletes underscore their unwavering dedication and perseverance in pursuing sporting excellence.

Table 4. Manifestation level of Mental Toughness in terms of Commitment

Item Statements	Mean	Standard Deviation	Verbal Interpretation
1. Enhance my skills and strive for improvement with unwavering dedication and persistence.	3.60	0.74	Highly Manifested
2. Recognize the importance of consistent investment in honing my abilities.	3.52	0.75	Highly Manifested
3. Devote substantial time and effort to my athletic pursuits.	3.55	0.70	Highly Manifested
4. Persevere through challenges and setbacks in pursuit of my goals.	3.53	0.72	Highly Manifested
5. Draw inspiration from my long-term goals and the journey of improvement.	3.65	0.66	Highly Manifested
Composite Mean	3.57	0.71	Highly Manifested

Table 5 displays the respondents' extent of adaptability in-game matches. It is obtained that mean scores range from 3.20 to 3.60. It reveals that they highly prioritize seeking feedback from coaches and teammates to enhance their adaptability during matches; this results in a mean of 3.60 and a standard deviation of 0.72. However, recognizing the importance of consistent investment in honing their abilities got the lowest mean score of 3.52 and a standard deviation of 0.75. To sum up, Sepaktakraw athletes' progression was adaptable, with a mean score of 3.44 and a standard deviation of 0.81. With this result, Sepakakraw athletes foster a culture of ongoing learning and development by proactively asking coaches and teammates for feedback and changing their positioning on the court to help their teammates best.

Table 5. Extent of Adaptability in Game Matches in terms of Progression

Item Statements	Mean	Standard Deviation	Verbal Interpretation
1. Adjust my approach on opponents' weaknesses to gain an advantage and maximize my chances of success.	3.42	0.81	Adaptable
2. Change my position on the court to provide optimal support for my team.	3.23	0.93	Adaptable
3. Communicate with my teammates to adjust our game plan as needed.	3.43	0.83	Adaptable
4. Remain composed and focused under pressure, to ensure that I can make clear headed decisions	3.52	0.75	Highly Adaptable
5. Seek feedback from coaches and teammates to enhance my adaptability during matches.	3.60	0.72	Highly Adaptable
Composite Mean	3.44	0.81	Adaptable

The data presented in Table 6 shows the Sepaktakraw athlete's extent of adaptability in terms of regression. The table presents mean scores ranging from 3.40 to 3.50. It displayed how the athletes can manage their emotions, stay focused on adapting their strategies to overcome obstacles effectively and work on developing strategies to stay calm and focused even in intense situations; these results got the highest mean of 3.50. This

suggests that this study is evident in how athletes' emotional regulation and concentration impact their ability to adapt their strategies during gameplay. However, adjust the approach accordingly to regain control of the match when the opponent changes their tactics, maintain concentration to stay engaged and responsive to the evolving dynamics of the match, and find ways to adapt the approach when opponents have a different playing style than got the lowest mean of 3.40 and a standard deviation of 0.89, 0.76, and 0.79. In terms of regression, Sepaktakraw athletes were adaptable, obtaining a mean of 3.44 with a standard deviation of 0.82.

Table 6. Extent of Adaptability in Game Matches in terms of Regression

Item Statements	Mean	Standard Deviation	Verbal Interpretation
1. Adjust my approach accordingly to regain control of the match when my opponent changes their tactics.	3.40	0.89	Adaptable
2. Manage my emotion and stay focused on adapting my strategies to overcome obstacles effectively.	3.50	0.83	Highly Adaptable
3. Maintain my concentration to stay engaged and responsive to the evolving dynamics of the match.	3.40	0.76	Adaptable
4. Find ways to adapt my approach when my opponents have a different playing style than mine.	3.40	0.79	Adaptable
5. Work on developing strategies to stay calm and focused even in intense situation	3.50	0.81	Highly Adaptable
Composite Mean	3.44	0.82	Adaptable

Table 7 shows a strong positive correlation ($r = 0.936$) between mental toughness and adaptability among Sepaktakraw athletes, with a statistically significant P-value of 0.000 (< 0.05). This indicates that higher mental toughness is associated with greater adaptability during matches. The findings reject the null hypothesis, confirming a significant relationship.

Table 7. Relationship between Mental Toughness and Adaptability in Game Matches

Variables	Computed r	Verbal Interpretation	P value	Decision Ho	Interpretation
Mental Toughness and Adaptability in Game Matches	0.936	Very Strong Correlation	0.000	Reject	Significant

DISCUSSION

The initial goal of the study was to determine the manifestation level of Sepaktakraw athletes. The second goal was to measure the respondents' extent of adaptability in game matches and lastly, to correlate the respondents' mental toughness and adaptability in game matches.

One of the important factors in the performance of athletes, particularly in the field of Sepaktakraw, is their mental toughness. The ability to withstand pressure, adapt to challenges, and maintain focus during game matches is paramount for success in competitive sports. The study of mental toughness in Sepaktakraw athletes highlights control as a crucial psychological factor. Control refers to athletes' perception of their ability to influence and manage various aspects of their performance, especially in dynamic sports environments. Mental toughness (MT) encompasses traits such as perseverance, determination, and composure, which are vital for athletes facing high-pressure situations (Chrétien et al., 2024). The data shows that Sepaktakraw athletes exhibit high levels of mental toughness in control, with mean scores ranging from 3.32 to 3.57. Athletes who adhere to disciplined training methods and maintain focus during performances are more likely to achieve consistent excellence and peak performance. Structured training regimens, maintaining focus during competitions, and disciplined training methods are pivotal. Challenge is another key component of mental toughness for Sepaktakraw athletes. It involves dealing with various hardships and difficulties during intense competition. Mental toughness equips athletes with effective stress management strategies, allowing them to remain composed under pressure (Zeiger & Zeiger, 2018). The study reveals mean scores for challenge ranging from 3.33 to 3.52, indicating that Sepaktakraw athletes highly manifest mental toughness when taking risks to achieve their goals. Risk-taking reflects their willingness to embrace uncertainty and confront challenges head-on, cultivating a fearless mindset. Athletes who view setbacks as temporary obstacles rather than permanent failures maintain optimism and perseverance. This supports Liew et al. (2019), who found that elite athletes embracing challenges as opportunities for growth exhibit higher levels of mental toughness.

Furthermore, Confidence is another vital psychological factor in mental toughness, with mean scores ranging from 3.47 to 3.57. Sepaktakraw athletes who believe in their abilities and preparation have a high chance of success even in challenging circumstances. Confidence in their skills, training, and mental resilience is crucial for overcoming setbacks. Jekauc et al. (2023) found a positive relationship between sport confidence and an athlete's capacity to bounce back from setbacks. Efforts to enhance sport confidence, such as mental skills training and positive self-talk, can significantly develop the resilience needed to overcome challenges. Mental skills training encompasses techniques like stress

management, imagery, and goal setting, which help athletes develop coping strategies for performance-related pressures (Griffith et al., 2023). Commitment stands out as a fundamental aspect of mental toughness for Sepaktakraw athletes, characterized by their resolve and dedication to sustaining participation in sports. The study shows that athletes draw inspiration from their long-term goals and continuous improvement, with a mean score of 3.57. Committed athletes invest considerable time and energy into their training and competition, reflecting their dedication to realizing their full potential. This supports Kumbar & Patil (2024) who found that athletes draw substantial inspiration from their long-term aspirations and self-enhancement within their sport. These goals serve as guiding lights, providing a sense of purpose and direction in their athletic endeavors.

Additionally, adaptability in game matches is crucial for Sepaktakraw athletes to respond effectively to varying situations. The study reveals that athletes prioritize seeking feedback from coaches and teammates to enhance their adaptability, with a mean score of 3.44. Effective adaptability involves adjusting strategies, tactics, and responses in real-time during matches. Athletes who manage their emotions and stay focused can adapt their strategies to overcome obstacles effectively. This supports Isabella et al. (2014), who emphasized the importance of adaptability in overcoming stressors and maintaining good performance during competitions. Overall, adaptability and mental toughness are intertwined, with athletes who are adaptable being better equipped to handle pressure and uncertainty in competition.

In summary, the findings emphasize that mental toughness, characterized by control, challenge, confidence, and commitment, is integral to the success of Sepaktakraw athletes. By fostering these psychological factors and enhancing adaptability through structured training activities, athletes can optimize their performance and resilience in the dynamic environment of competitive sports. The proposed training activities aim to sustain and enhance these adaptive strategies, equipping athletes with the necessary skills to excel in their sport.

CONCLUSION

This study concluded that Sepaktakraw athletes manifested mental toughness in terms of control and challenge, with particularly high levels of confidence and commitment. Furthermore, these athletes showed adaptability in game matches, and a significant relationship was found between mental toughness and adaptability in game

matches. Consequently, it is suggested that training activities be implemented to boost mental toughness and enhance adaptability, thereby promoting the resiliency of Sepaktakraw athletes.

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CONFLICT OF INTEREST

The author hereby declares that this research is free from conflicts of interest with any party.

AUTHOR'S CONTRIBUTION

Orlanes spearheaded the conceptualization and method formulation. Fernandez thoroughly analyzed data, drew conclusions, and interpreted findings. J. Panganiban facilitated data gathering and carefully polished the manuscript. T. Panganiban finalized conclusions and recommendations, ensuring the manuscript's submission readiness.

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