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A comparative analysis of mental toughness levels between male players of university and all India tennis association

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Abstract
Background: The term "mental toughness" describes the set of psychological components necessary for the healthy operation of the mind. Tennis players at the top of the game believe that tennis is an intellectual game. A popular mental toughness questionnaire is the five-factor model.
Objective: Our goal was to use the mental toughness questionnaire to analyze particular psychological traits of male tennis players at the university (West Zone) and All India Tennis Association (AITA) levels.
Results: The results revealed no statistically significant differences in rebound ability, pressure handling, and confidence levels between both the groups, although with the help of inference statistics. The results revealed statistically significant differences in concentration; motivation and mental toughness level between both the groups, although with the help of inferences statistics. AITA male players exhibited higher levels of these sub factor of mental toughness. The results revealed statistically significant differences in mental toughness the help of inference statistics.
Conclusion: To the best of our knowledge, this is the first study to use a mental toughness questionnaire to characterize the mental toughness features of tennis players at various competitive levels. According to our research, male tennis players exhibit various levels of mental toughness along with to their participation (university & AITA). While the definition of "Best Form" in tennis demands flexibility, additional components of mental toughness—like attention span management, constructive self-talk, and so forth—should be incorporated into training programs that concentrate talent identification and tennis training.

Keywords: Mental toughness, all India tennis association, confidence, concentration, and motivation

Introduction
Tennis is a widely played game in many nations, both individually and in teams. It was previously limited to playing on a grass court in a lawn; today, it is played on hard and clay courts around the nation. However, during the last few decades, the game has become so popular that it is now played year-round. The term "mental toughness" describes the set of psychological components necessary for normal operation. Sports psychologists, coaches, and athletes all agree that mental toughness is one of the most important psychological characteristics associated with success in sports.
The players' ability to maintain mental toughness was also a factor in the modern game of tennis. Three strategies were taken into consideration to keep mental toughness in place once it had been established: the drive and desire for unfulfilled and integrated achievement, a network of both sports and non-sports people for support, and the efficient application of both fundamental and advanced mental talents.
Mental toughness can be measured with the widely used Alan Goldberg questionnaire. The five-factor model is a valuable tool for evaluating mental toughness traits in athletes across a range of achievement levels. Athletes with strong mental faculties perform at their peak in stressful situations. Resilience is bolstered by components such as self-assurance, the capacity to regulate emotions such as anger, fear, and annoyance, focus, a good self-image, patience in achieving goals, and the ability to regulate mood in a sequential manner.

Purpose: Thus, our goal was to look into the difference in mental toughness tennis male

players at university & All India Tennis Association levels.

Methods and Materials

Participants: For this study, 50 male tennis players (25 university, 25 AITA) aged 18-26 yrs from participating in University (west zone) & All India Tennis Association (AITA) tournaments of India. After outlining the goals of the study and the methods being used, all selected subjects provided written informed consent. When completing the questionnaire, participants were asked to share their opinions, and they did so without restriction.

Variables: The mental toughness questionnaire, which Alan Goldberg initially created was employed in this investigation. This psychological inventory measures five dimensions of mental toughness: rebound ability, pressure handling, concentration, confidence, motivation.

Test administration: The proper instructions on the process for submitting their response to the questionnaire were provided to every tennis player. The test administrator answered any questions participants might have had and provided a full explanation of each question on the questionnaire before they started filling it out.

Statistical analysis: The statistical study was carried out utilizing IBM Inc.'s SPSS v22 software, located in Chicago, USA. The mean ± SD of every category is one of the descriptive properties. Descriptive statistics were employed to assess the mental toughness score. The "independent sample t test" was utilized to determine the statistically significant distinctions between male players from the University (West Zone) & All India Tennis Association (AITA). A significance level of 0.05 was used to test the hypotheses.

Results

1. Reboundability Results

Table 1: Independent t-test Rebound ability

Group	N	Mean	T value	P Value
University (Players)	25	2.80	0.67	0.50
AITA (Players)	25	3.08		

*At 0.05 level of significance

The university and All India Tennis Association (AITA) groups have mean motivations of 2.80 and 3.08, respectively, as shown in Table 1. As the calculated p-value of 0.50 is above the significance level of 0.05, we conclude that there is a no significant difference in rebound ability between university and AITA tennis players.

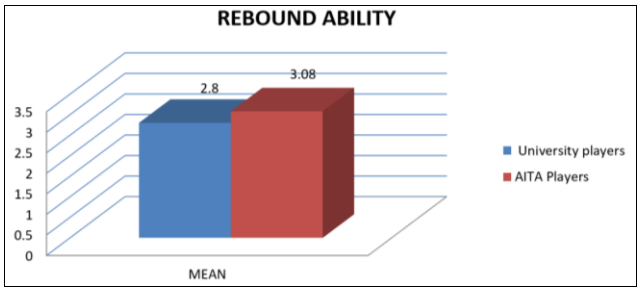

Table 1: Rebound ability

2. Pressure Handling Results

Table 2: Independent t-test Pressure Handling

Group	N	Mean	T value	P Value
University (Players)	25	3.36	0.62	0.53
AITA (Players)	25	3.60		

*At 0.05 level of significance

The university and All India Tennis Association (AITA) groups have mean motivations of 3.36 and 3.60, respectively, as shown in Table 2. As the calculated p-value of 0.53 is above the significance level of 0.05, we conclude that there is a no significant difference in pressure handling between university and AITA tennis players.

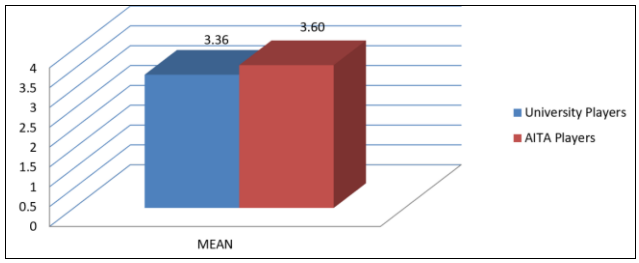

Table 2: Pressure handling

3. Concentration Results

Table 3: Independent t-test Concentration

Group	N	Mean	T value	P Value
University (Players)	25	2.28	3.70	0.001
AITA (Players)	25	3.80		

*At 0.05 level of significance

The university and All India Tennis Association (AITA) groups have mean motivations of 2.28 and 3.80, respectively, as shown in Table 3. As the calculated p-value of 0.001 is below the significance level of 0.05, we conclude that there is a significant difference in concentration between university and AITA tennis players, with AITA players showing a higher degree of concentration.

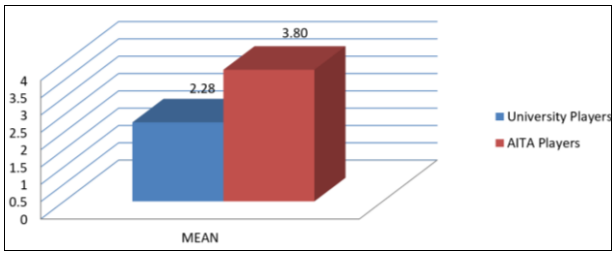

Table 3: Concentration

4. Confidence Results

Table 4: Independent t-test Confidence

Group	N	Mean	T value	P Value
University (Players)	25	3.08	1.53	0.13
AITA (Players)	25	3.72		

*At 0.05 level of significance

The university and All India Tennis Association (AITA) groups have mean motivations of 3.08 and 3.72, respectively, as shown in Table 4. As the calculated p-value of 0.13 is above the significance level of 0.05, we conclude that there is a no significant difference in confidence between university and AITA tennis players.

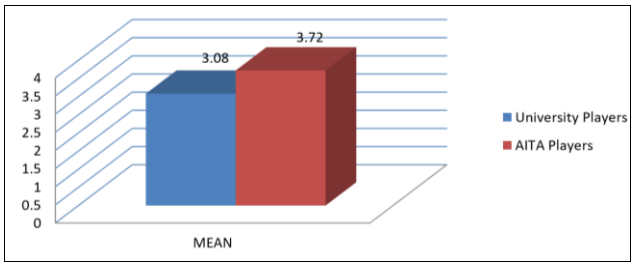

Table 4: Confidence

5. Motivation Results

Table 5: Independent t-test Motivation

Group	N	Mean	T value	P Value
University (Players)	25	3.28	2.44	0.01
AITA (Players)	25	4.36		

*At 0.05 level of significance

The university and All India Tennis Association (AITA) groups have mean motivations of 3.28 and 4.36, respectively, as shown in Table 5. As the calculated p-value of 0.01 is below the significance level of 0.05, we conclude that there is a significant difference in motivation between university and AITA tennis players, with AITA players showing a higher degree of motivation.

6. Overall Mental Toughness Result

Table 6: Independent t-test Mental Toughness

Group	N	Mean	T value	P Value
University (Players)	25	15.24	2.35	0.02
AITA (Players)	25	18.24		

*At 0.05 level of significance

The university and All India Tennis Association (AITA) groups have mean mental toughness scores of 15.24 and 18.12, respectively, as shown in Table 6. As the calculated p-value of 0.02 is below the significance level of 0.05, we conclude that there is a significant difference in mental toughness between university and AITA tennis players, with AITA players showing a higher degree of mental toughness.

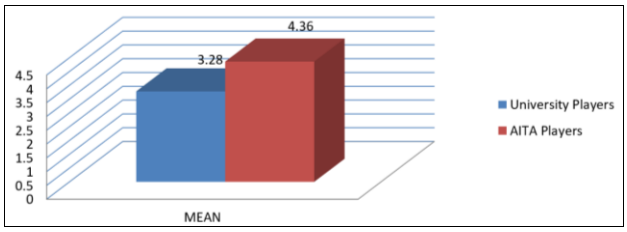

Table 6: Motivation

Discussion

The term "mental toughness" describes a group of psychological components necessary for the mind to function well in a variety of circumstances. Athletes, coaches, and sports psychologists all agree that mental toughness is one of the most important psychological characteristics associated with athletic success. Tennis players with higher mental toughness ratings said they performed better, whereas those with lower mental toughness ratings said they did not perform better.

Conclusion

To investigate the characteristics of mental toughness of tennis players at University (west zone) and AITA participation. On the basis of mental toughness questionnaire by Alan Goldberg.

Rebound ability showed no statistically significant difference is present between the university and AITA tennis male players.

Pressure Handling showed no statistically significant difference is present between the University and AITA tennis male players.

Concentration showed a statistically significant difference exists between the University and AITA tennis male players. It can be concluded that the AITA tennis players are better concentration in performing and achieving in tennis than the university tennis male players.

Confidence showed no statistically significant difference is present between the University and AITA tennis male players.

Motivation showed a statistically significant difference exists between the University and AITA tennis male players. It can be concluded that the AITA tennis players are better motivation in performing and achieving in tennis than the university tennis male players.

Overall Mental Toughness showed a statistically significant difference exists between the University and AITA tennis male players. It can be concluded that the AITA tennis players are better mental toughness in performing and achieving in tennis than the university tennis male players.

An in-depth analysis of tennis is necessary to properly describe the idea of "best performance." Therefore, other characteristics of mental toughness, such as focus, personality, self-belief, optimism, etc., should also be investigated in order to maximize the salient inherent and trainable traits that should be focused on in talent identification and coaching.

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