

A Comparative Analysis of Mental Toughness Among All India Inter-University Men's Pencak Silat Athletes Across Universities

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Abstract: *This study examines the mental toughness of athletes from four universities participating in the All India Inter - University Men's Pencak Silat Team. Mental toughness is a critical psychological trait that influences an athlete's ability to perform under pressure, remain focused, and recover after setbacks. A validated Mental Toughness Questionnaire (Goldberg, 1998) was administered to 80 athletes from Bengaluru North University, Bangalore University, Guru Nanak Dev University, and Chandigarh University. The results revealed no statistically significant differences in mental toughness scores between the universities. However, descriptive trends suggested slightly higher overall mental toughness scores among athletes from Bengaluru North University. These findings highlight the importance of personalized mental toughness training strategies, regardless of university affiliation.*

Keywords: Mental Toughness, Pencak Silat, Sports Psychology, Inter - University Competition, Athlete Performance.

1. Introduction

Pencak Silat is a traditional martial art originating from Southeast Asia, notable for its dual focus on combative elements (Tanding) and performance - based routines (Seni) (Zulkarnain et al., 2018). Success in this sport requires not only advanced physical skills but also a high degree of mental toughness—a psychological attribute that enables individuals to maintain focus, confidence, and resilience when facing adversity or performance - related stress (Clough, Earle, & Sewell, 2002).

In combat sports like Pencak Silat, the mental component of competition is often as crucial as physical prowess. Athletes must effectively manage psychological stress, cope with anxiety, recover swiftly from errors, and continue making strategic decisions under intense pressure (Jones, Hanton, & Connaughton, 2007).

Mental toughness empowers athletes to push beyond perceived limitations, sustain motivation, and perform consistently in high - stakes scenarios (Gucciardi et al., 2015).

While considerable research has explored mental toughness across individual sports and athletes, there is limited comparative analysis of mental toughness among athletes from different institutions engaged in the same sport (Mahoney et al., 2014).

This study aims to address that gap by comparing the mental toughness of athletes from four universities participating in the All India Inter - University Men's Pencak Silat Team. Specifically, it seeks to examine whether university affiliation contributes to differences in mental toughness and to explore how factors such as coaching styles, institutional culture, and training environments may shape athletes' psychological resilience (Crust & Clough, 2011).

2. Materials and Methods

2.1 Participants

The study sample consisted of 80 male athletes, aged 18–25, from four universities in India: Bengaluru North University, Bangalore University, Guru Nanak Dev University, and Chandigarh University. Each university contributed 20 athletes. All participants had at least one year of competitive experience in Pencak Silat and were actively involved in regular training and competition at the university level. Ethical approval was obtained for the study, and informed consent was secured from all participants.

2.2 Instrumentation

Mental toughness was assessed using the Mental Toughness Questionnaire (MTQ) developed by Allan Goldberg (1998). This 30 - item questionnaire evaluates five key components: Rebound Ability, Ability to Handle Pressure, Concentration Ability, Confidence, and Motivation. Each item is rated on a 5 - point Likert scale, and cumulative scores are used to compute the overall mental toughness level of each participant.

The MTQ has demonstrated acceptable levels of internal consistency in previous research, with Cronbach's alpha values typically reported above 0.80, indicating good reliability for psychological assessment instruments (Goldberg, 1998).

2.3 Procedure:

The data were collected in a controlled environment where participants completed the MTQ individually, ensuring confidentiality and anonymity. The responses were analysed using the Statistical Package for the Social Sciences (SPSS),

and a one - way Analysis of Variance (ANOVA) was performed to determine whether any statistically significant differences existed in mental toughness across the four universities. A significance level of $p < 0.05$ was set for all statistical tests.

Table 1: Shows Descriptive Statistics for the four universities:

Sl. No.	Subjects	Sample Size	Sum	Mean	Standard Deviation
1.	Bengaluru North University	20	342	17.10	2.71
2.	Banglore University	20	325	16.25	3.66
3.	Guru Nanak Dev University	20	315	15.75	3.47
4.	Chandigarh University	20	305	15.25	2.73

The table 1 shows that Bengaluru North University athletes had the highest mean mental toughness score of 17.10, followed by Bangalore University (16.25), Guru Nanak Dev University (15.75), and Chandigarh University (15.25). Although no statistically significant differences were found, the results suggest slight variations in mental toughness across the universities.

3.2 ANOVA Results

A one - way ANOVA was performed to examine differences in mental toughness across the four universities.

Table 2: Shows Results of ANOVA:

S. No.	Source of Variation	Sum of Squares (SS)	df	Mean Square (MS)	F - value
1	Between Groups	37.34	3	12.45	1.24
2	Within Groups (Error)	764.44	76	10.06	
Total		801.78	79		

The table 2 presents the results of the one - way analysis of variance conducted to compare mental toughness scores across the four universities. The between - group sum of squares was 37.34, with a mean square of 12.45, the results showed no statistically significant differences between the groups ($F(3, 76) = 1.24, p > 0.05$). The within - group (error) sum of squares was 764.44, with a mean square of 10.06. Since the calculated F - value from the analysis is 1.24 (which is less than 2.77), at a significance level of $p < 0.05$, the results indicated no statistically significant differences in mental toughness scores across the universities. This suggests that university affiliation does not have a significant impact on the mental toughness of athletes in this study.

Although Bengaluru North University had the highest mean mental toughness score, the ANOVA results suggest that university affiliation does not significantly influence athletes' mental toughness. The absence of statistical significance implies that factors other than the university, such as individual differences or external training influences, could be more relevant in determining mental toughness.

4. Conclusion

In conclusion, while university affiliation did not play a significant role in mental toughness, there may be other factors worth exploring to understand the development of mental toughness in athletes more comprehensively.

3. Results & Discussion

3.1 Descriptive Statistics

Despite these findings, future research should delve into factors like coaching methods, team culture, and individual psychological traits, as these may contribute to variations in mental toughness. Moreover, expanding the sample size and including psychological interventions might offer deeper insights into the development of mental toughness in combat sports.

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