

## **Reevaluating Team-Based Mental Skills Training: Insights from NCAA Soccer Players' Mental Toughness Development**

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### **ABSTRACT**

*Mental toughness* (MT) encompasses attributes pivotal for athletic performance in the face of challenges. The effects of team-based mental skills training (MST) interventions on MT's diverse components remain insufficiently explored. **PURPOSE:** To evaluate the effectiveness of team-based MST workshops on enhancing the various dimensions of MT. **METHODS:** NCAA Division I male soccer players ( $N = 18$ ) volunteered for the study. Based on a preliminary assessment, three MST workshops were conducted, focusing on the three key MT dimensions with the lowest team average scores, namely *facing adversity*, *buoyancy*, and *optimistic style*. The Mental Toughness Index, comprising eight items (one for each key MT dimension; range: 1-7), was administered before and after each workshop. A linear mixed-effects modeling approach and cluster analysis were employed in MATLAB. **RESULTS:** Optimistic style showed a significant post-intervention increase ( $B = 0.32$ ,  $SE = 0.10$ ,  $p = .007$ ), while facing adversity and buoyancy exhibited positive trends that were not statistically significant ( $p = .09$ ;  $p = .69$ ). Three subgroups were identified: Cluster 1: This subgroup ( $n = 2$ ) showed a notable improvement in facing adversity scores from pre (4.50) to post (6.50) and optimistic style from pre (3.50) to post (5.50). However, their buoyancy scores showed only a slight increase from pre (5.00) to post (5.50); Cluster 2: This group ( $n = 6$ ) showed good improvement across all constructs but is most notable for its buoyancy scores increasing from pre (5.25) to post (6.80), which is the largest increase among all clusters; and Cluster 3: The most common response pattern ( $n = 10$ ) started with relatively high pre-scores across all constructs and showed modest improvements, with optimistic style showing a slight increase from pre (6.80) to post (6.89), indicating they were already quite optimistic before the intervention. **CONCLUSION:** The findings indicate the success of the team intervention in enhancing the optimistic style and suggest potential benefits for facing adversity and buoyancy. The variation in individual responses, as elucidated by cluster analysis, underscores distinct subgroup response patterns. Overall, these findings suggest that practitioners should consider whether a one-size-fits-all approach alone is the most effective for developing MT.