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The Role Of Cognitive And Emotional Strength In Enhancing Performance Among Elite Boxers

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Abstract

This study examined the role of cognitive and emotional strength in enhancing performance among elite boxers, focusing on mental resilience, decision-making, and emotional regulation. Fifty boxers (aged 18–30) were randomly assigned to an experimental group, which underwent a 12-week psychological training program, or a control group. Assessments using the Mental Toughness Questionnaire (MTQ48), Emotional Regulation Scale (ERS), and match performance analysis revealed significant improvements in mental toughness, emotional regulation, and decision-making under pressure in the experimental group ($p < 0.01$). Gender analysis showed no differences in cognitive outcomes, though females demonstrated higher emotional regulation post-intervention ($p < 0.05$). The findings support the integration of structured psychological training into boxing programs to enhance both cognitive and emotional skills, with attention to potential gender-specific needs.

Keywords:

Cognitive Strength, Emotional Regulation, Elite Boxing, Mental Toughness, Psychological Training, Gender Differences.

1. Introduction

Elite boxing is a multidimensional sport where success depends not only on physical and technical skills but also on psychological competencies, including mental resilience, decision-making, and emotional regulation. While prior research has extensively explored psychological training benefits in precision sports (e.g., archery, table tennis), limited studies have investigated its application in combat sports such as boxing. This study bridges this research gap by evaluating how mental training influences performance among elite boxers, while also exploring gender-related psychological differences.

2. Objectives of the Study

1.

To evaluate the impact of cognitive and emotional strength on boxing performance.
2.

To assess gender differences in psychological parameters.
3.

To propose the integration of mental training into standard boxing routines.

3. Materials and Methods

3.1 Participants			
Group	Number of Participants (n)	Age (Years)	Criteria
Experimental	25	18–30	Min. 3 years of competitive boxing experience
Control	25	18–30	Min. 3 years of competitive boxing experience
3.2 Intervention Design			
Duration Frequency		Components	
12 weeks	3 sessions/week (60 minutes)	(60 Cognitive Training: Visualization, decision-making, problem-solving drills Emotional Regulation: Mindfulness, stress management, pressure simulations Integrated Drills: Applied boxing-specific scenarios	
3.3 Assessment Tools			
Tool		Purpose	
Mental Toughness Questionnaire (MTQ48)		Assess mental toughness	
Emotional Regulation Scale (ERS)		Measure emotional regulation capabilities	
Match Performance Analysis		Evaluate decision speed, accuracy, composure (video analysis)	

3.4 Data Analysis

Software Used

IBM SPSS v26

Tests Applied

Shapiro-Wilk, Levene's Test, Paired t-test, Independent t-test, Cohen's d

Significance Level

p < 0.05

4. Results

Table 1: Descriptive Statistics for Mental Toughness and Emotional Regulation (Pre and Post-intervention)

Group	MTQ48 Pre (Mean ± SD)	MTQ48 Post (Mean ± SD)	ERS Pre (Mean ± SD)	ERS Post (Mean ± SD)
Experimental	45.2 ± 3.5	53.8 ± 3.2 (p < 0.01)	41.6 ± 4.1	49.5 ± 3.7 (p < 0.01)
Control	44.8 ± 3.9	45.6 ± 4.0	42.1 ± 3.8	42.5 ± 4.0

Gender Differences

- No significant difference in MTQ48 scores between genders.
- Female boxers scored significantly higher on ERS post-intervention ($p < 0.05$).

5. Discussion

Findings support the hypothesis that psychological training contributes significantly to performance enhancement in elite boxing. Participants in the experimental group exhibited improved mental toughness, emotional regulation, and decision-making capabilities under competitive stress. These results align with previous research on psychological interventions in sport but uniquely extend the evidence to combat sports.

Gender-related findings indicate parity in cognitive dimensions; however, female boxers demonstrated superior emotional regulation post-intervention, corroborating previous studies highlighting women's emotional resilience in sports contexts.

6. Practical Implications

- Integration of cognitive and emotional training into boxing practice is recommended.
- Psychological training should be individualized, considering athletes' specific needs.
- Longitudinal studies should explore the sustainability of psychological gains.

7. Conclusion

This study reinforces the pivotal role of cognitive and emotional conditioning in boxing. Systematic psychological training enhances athletes' mental toughness and emotional regulation, yielding tangible performance improvements under pressure. Boxing coaching paradigms should evolve to incorporate structured mental training alongside physical and technical preparations.

8. References

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