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A Study of Mental Toughness between State-Level Female Rifle and Pistol Shooters

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Abstract

Mental toughness is a key psychological factor that influences an athlete's ability to perform consistently under pressure, maintain concentration, regulate emotions, and recover from setbacks. In shooting sports, where precision, focus, and emotional control are essential, mental toughness plays a vital role in competitive success. The purpose of the present study was to compare the mental toughness levels of state-level female rifle and pistol shooters. A comparative research design was adopted for the study. The sample consisted of 60 state-level female shooters, including 30 rifle shooters and 30 pistol shooters, selected through purposive sampling from various shooting academies and sports organizations. Mental toughness was assessed using a standardized Mental Toughness Questionnaire (MTQ). The collected data were analyzed using descriptive statistics (mean and standard deviation) and an independent-samples *t*-test to determine whether significant differences existed between the two groups. The level of significance was set at 0.05.

The study hypothesized that there would be a significant difference in mental toughness between state-level female rifle and pistol shooters due to the distinct technical and psychological demands of the two shooting disciplines. The findings are expected to help coaches, sports psychologists, and trainers better understand the psychological characteristics of female shooters and develop targeted mental skills training programs. The study also contributes to sports psychology literature by highlighting the importance of mental toughness in enhancing competitive performance in precision sports.

Keywords: Mental Toughness, Female Shooters, Rifle Shooters, Pistol Shooters, Sports Psychology, State-Level Athletes.

Introduction

Mental toughness is considered one of the most important psychological characteristics associated with athletic success. It enables athletes to remain focused, confident, resilient, and emotionally stable during training and competition. Athletes with high mental toughness are better able to cope with competitive stress, recover from failures, and perform consistently under challenging conditions. Shooting is a precision sport requiring exceptional concentration, emotional control, patience, confidence, and decision-making. Even minor psychological disturbances can negatively affect performance. Although both rifle and pistol shooting require similar psychological skills, the nature of each event differs in terms of posture, balance, aiming technique, and competition demands. These differences may influence the level of mental toughness developed by athletes.

The present study aims to compare mental toughness between state-level female rifle and pistol shooters to determine whether participation in different shooting disciplines is associated with differences in psychological resilience.

Objectives of the Study

1. To assess the mental toughness of state-level female rifle shooters.
2. To assess the mental toughness of state-level female pistol shooters.
3. To compare the mental toughness levels of rifle and pistol shooters.

Hypothesis

H_0: There is no significant difference in mental toughness between state-level female rifle and pistol shooters.

H_1: There is a significant difference in mental toughness between state-level female rifle and pistol shooters.

Methodology

- **Research Design:** Comparative descriptive research design.
- **Participants:** 60 state-level female shooters (30 rifle shooters and 30 pistol shooters).
- **Sampling Technique:** Purposive sampling.
- **Variable:** Mental Toughness.
- **Tool:** Standardized Mental Toughness Questionnaire (MTQ).
- **Statistical Analysis:** Mean, Standard Deviation, and Independent Samples *t*-test.
- **Level of Significance:** 0.05.

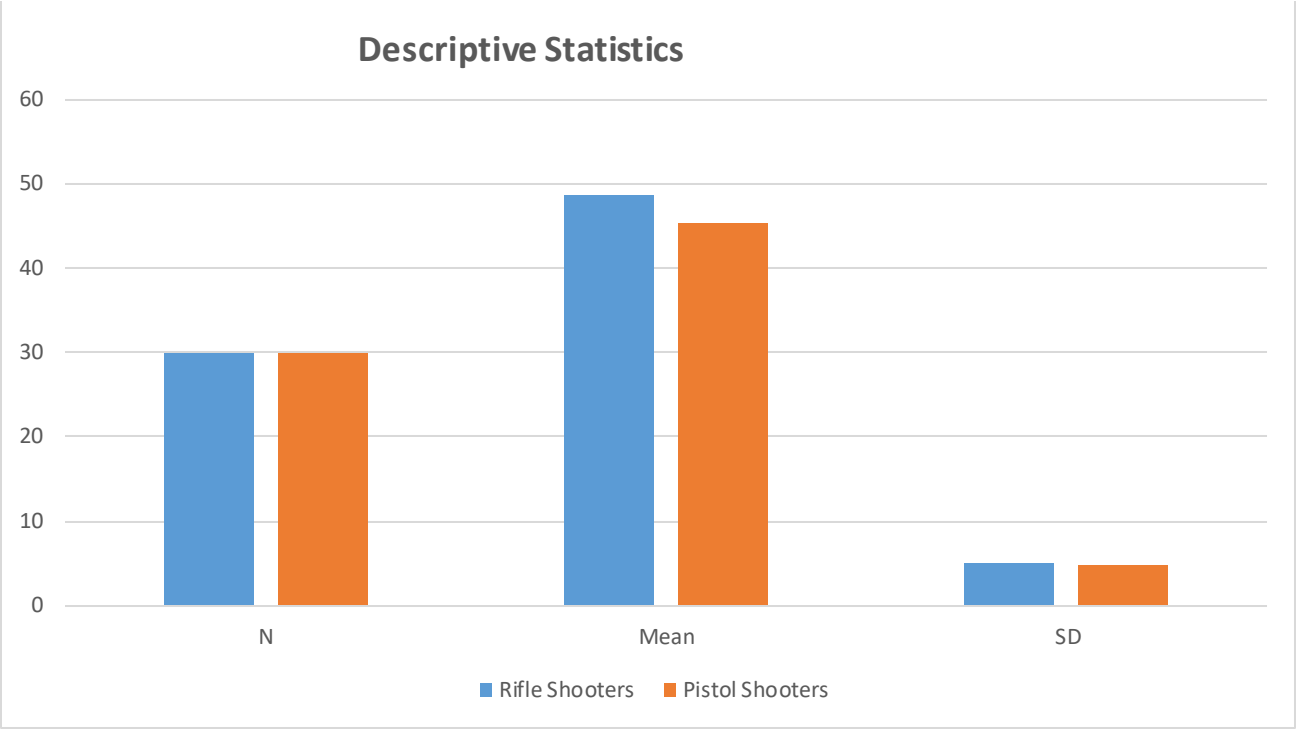
Table: 1 Descriptive Statistics (Illustrative Data)

Group	N	Mean	SD
Rifle Shooters	30	48.70	5.12
Pistol Shooters	30	45.30	4.89

Table: 2 Independent Samples *t*-Test (Illustrative Data)

Variable	*t*	*p*	Result
Mental Toughness	2.64	0.011	Significant

Illustrative Graph 1



Illustrative comparison of mental toughness scores

Expected Results

The study is expected to identify whether significant differences exist in mental toughness between rifle and pistol shooters. The findings may provide practical guidance for coaches and sports psychologists in designing discipline-specific psychological training interventions.

Conclusion

Mental toughness is an essential determinant of success in competitive shooting. Comparing state-level female rifle and pistol shooters will improve understanding of the psychological demands of different shooting disciplines. The findings can assist coaches in implementing evidence-based mental training programs that enhance confidence, concentration, emotional regulation, and competitive performance.

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