

THE IMPACT OF MENTAL TOUGHNESS AND GENDER ON PERFORMANCE OF WEIGHTLIFTERS IN THE NORTHERN PROVINCE

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Abstract: In present-day sports, recognizing the significance of psychological factors on athletic performance has become paramount. Coaches, athletes, and sports administrators now acknowledge that success in sports goes beyond mere physical talent. This research delves into the concept of mental toughness along with gender and its impact on athletic performance, particularly in weightlifting within Sri Lanka. Mental toughness was measured with the concepts of confidence, constancy, and control. It was determined that the gender, Constancy, Confidence and Control are statistically significant at a 5% significance level. According to this analysis, gender and confidence positively affect the performance of players while Constancy and Control show a negative relationship. In the context of Sri Lanka, weightlifting has received limited attention in research, especially in the Northern Province. This study aims to bridge this gap and enhance understanding of the factors influencing weightlifting performance.

Keywords: Mental Toughness, Weightlifting, Confidence, Constancy, Control, Performance

1. INTRODUCTION

Weightlifting, a widely used practice in sports and exercise, serves as a means to enhance strength, muscle-mass, and joint strength during training. It has evolved into a competitive sport, demonstrated by its inclusion in the Olympic Games and the establishment of national and international governing bodies (Chavada, 2021). The sport of weightlifting primarily comprises two lifts: the snatch and the clean and jerk. Its techniques focus on positioning the body in states of strength and stability, optimizing leverage, and enabling the generation of significant force to apply mechanical work to the barbell (Haff, 2020). In weightlifting, success is ultimately determined by the amount of weight lifted, which is achieved through the generation of force while maintaining specific positions at different phases of the lift, all while adhering to optimal biomechanics for the individual (Turner, 2022).

While weightlifting has been extensively studied in terms of physical factors such as physiology, biomechanics, nutrition, and injury prevention, relatively limited research has been conducted on its psychological aspects. However, weightlifting psychology has been explored from various angles, including self-efficacy, intention, self-regulatory behavior, attention, contemplation, and coaching skills (Neumann, 2019).

The concept of Mental Toughness has been a subject of extensive contemplation among researchers, and it remains one of the least understood phrases in the realm of sport. Mental Toughness has been a subject of extensive contemplation among researchers, making it one of the least understood terms in the realm of sports. However, the growing academic interest surrounding Mental Toughness reflects its profound significance and the value that sports psychologists, coaches, and athletes attribute to it (Jones et al., 2007; Gucciardi et al., 2015).

In this study, the aim is to examine the relationship between mental toughness and performance among participants in weightlifting events. The research will be conducted using a sample of athletes who are actively participating in weightlifting events within the Northern Province of Sri Lanka.

2. LITERATURE REVIEW

This section delves into various concepts relevant to the study.

2.1 Sports Psychology

According to Ikulayo (1990), sports psychology is considered a specialized branch of sports science that applies the principles of psychology to sportsmen and women in athletic contexts. In essence, it involves the scientific study of individuals engaged in sports activities with the aim of analyzing, explaining, describing, modifying, altering, or predicting behavior through various psychological methods. Sports psychology delves into the mental and emotional aspects of sports performance, seeking to understand how psychological factors impact athletes' behavior, motivation, mindset, and overall performance in sports situations. By utilizing psychological techniques and strategies, sports psychologists aim to enhance athletes' mental resilience, focus, and overall well-being to optimize their performance and achieve their full potential in sports.

2.2 Mental Toughness

Mental toughness is a psychological construct that plays a crucial role in enhancing performance and well-being across various domains, including sports. It comprises several key dimensions that contribute to an individual's ability to thrive under pressure and adversity. Three primary dimensions of mental toughness are confidence, consistency, and control.

Confidence: Confidence refers to an athlete's belief in their abilities to perform at their best even in challenging situations. It involves having self-assurance and a positive mindset, which can positively influence performance outcomes (Gucciardi, Gordon, & Dimmock, 2008).

Consistency: Consistency in mental toughness refers to the ability to maintain focus and perform consistently well over time. It involves being resilient and composed, ensuring that performance remains steady and reliable under various circumstances (Crust, 2007).

Control: Control refers to an athlete's sense of control over their thoughts, emotions, and actions. Having a strong sense of control allows athletes to regulate their responses effectively and cope with pressure and distractions (Gucciardi, Hanton, & Mallett, 2012).

2.3 Mental Toughness in Sports

In recent times, coaches and athletes have recognized the significance of mental skills in sports and are now placing more emphasis on developing these skills. The importance of mental preparation extends not only to those striving for victory but also to those seeking to become more consistent performers (Côté, Jean & Salmela, 1995). While much attention has been given to developing physical skills in sports, there is a growing understanding that mental strategies play a crucial role in enhancing team performance.

In 2002, Jones et al. (2002) addressed the need for clarity in defining mental toughness and identified key attributes as perceived by elite sports performers. This led to a focus on fundamental aspects of mental toughness, including self-confidence, control of negative energies, attention control, imagery program, motivation, positive energy control, and attitude control (Loher, 1986).

Clough (2002) emphasized the widespread belief that mental toughness significantly influences sports outcomes. However, despite this consensus, there remains a lack of conceptual clarity and consensus in the literature regarding the definition and operationalization of mental toughness (Crust, 2007).

There is a growing awareness of the importance of mental skills in sports, and coaches and athletes are now recognizing the need to develop these skills alongside physical abilities. Mental toughness is regarded as a vital factor in sports performance, but its definition and operationalization continue to be subjects of debate and research.

2.4 The relationship between mental toughness and sports performance

The relationship between mental toughness and sports performance has been extensively studied in sports psychology, with a general consensus that mental toughness positively influences performance outcomes (Carron, 2002). In a review of 30 studies, Senacal (2008) found that 83% of them reported a positive correlation between mental toughness and performance.

Research has indicated that postseason mental toughness is higher among successful teams compared to unsuccessful ones (Crum & Landers, 1971), and studies conducted in Western countries have mainly explored mental toughness. However, some research has been conducted in Asian countries like Malaysia (Kaung & Roy, 2007) and the Philippines (Juan & Lopez, 2015).

Mental toughness is not a remedy for incompetence, and there is an optimal point beyond which further increases in mental toughness may hinder performance (Weinberg & Gloud, 2011). Nevertheless, it has been shown that mental toughness skills can significantly improve athletes' performance and coping abilities (Jordet, 2005; Evans & Mullen, 2004). While there is a popular belief in the positive influence of mental toughness, contrasting findings also exist (Smith, 2021). Some studies have reported no correlation between mental toughness and increased training volume of elite judo athletes (Murphy, 1992), and no significant difference in psychological skills between elite, sub-elite, and non-elite female tennis players (Meyers, 1998).

Given the conceptual association between mental toughness and athletic performance, there is still empirical uncertainty in this area. It remains unclear whether mental toughness directly contributes to performance, achievement, or success outcomes, or if it is more related to non-performance factors such as positive behavioral responses to certain conditions. Hence, a critical moment has arisen to synthesize the literature on the mental toughness-performance relationship (Grouios, 2009).

2.5 The relationship between mental toughness and sports performance of weightlifters

Weightlifting requires performers to possess skilled techniques, strong physical performance, and excellent psychological characteristics to lift optimal weights (Dvorkin, 2005). Like other sports, weightlifting necessitates the integration of various components of athletic achievement, including physical, technical, tactical, and psychological aspects. In a study conducted by Ahmed Elemiri (Elemiri & Elbayoumy, 2014) in Egypt, differences between aristocratic and non-aristocratic Egyptian weightlifters were investigated. The research involved a sample of 28 male and female weightlifters, with the aim of understanding the relationship between mental stamina and achievement levels. The study emphasized the importance of developing mental stamina, especially among elite weightlifters, to enter the "high mental stiffness range."

The current study aims to examine the correlation between mental toughness and weightlifting performances, exploring whether dispositional mindfulness is linked to psychological skills and whether mental toughness is crucial for sports performance across various sports. The research suggests that the application of sports psychology in the scientific training of athletes in Sri Lanka is essential for enhancing performance and contributing to the overall development of sports in the country.

3. METHODOLOGY

In this section, the research design, population and sample, conceptual framework and data collection techniques are discussed.

3.1 Research Design

The time horizon in this study is a cross-sectional study, where data is collected at a single point in time. The purpose of the study is hypothesis testing where relationship between mental toughness and weightlifting performances are accessed. The researchers' interference was minimal since the data were collected using a questionnaire and the study setting was non-contrived. Unit of analysis were the individual weightlifters.

3.2 Population and sample

The study population comprises individual weightlifters from the Northern Province of Sri Lanka, encompassing both professional and amateur weightlifters. The participants were further categorized based on geographical distinctions, such as rural and urban areas. The total sample size included 150 male and female weightlifters. Table 1 illustrates the distribution of individuals from various districts in the sample.

Table 1: Study Sample

District	Male	Female
Jaffna	10	56
Kilinochchi	2	21
Mannar	5	07
Mulathiv	5	10
Vauniya	3	31
Total	25	125

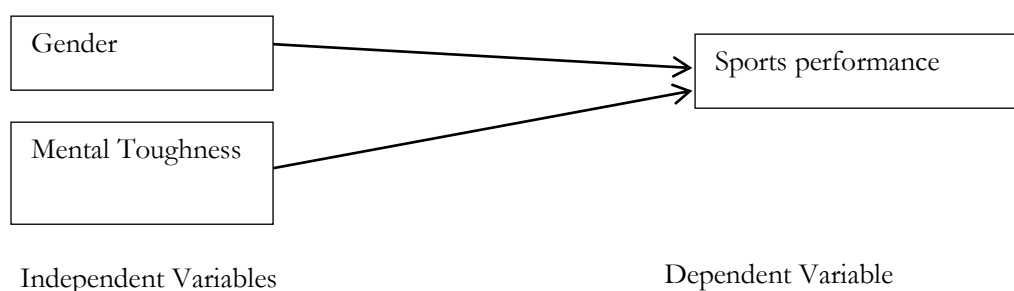
Source – Compiled by the author

A total of 150 male and female weightlifters from the Northern Province participated in a Provincial tournament organized by MILO (Nestle Lanka Pvt. Ltd.). The researchers used a purposive sampling method, selecting participants of all ages below and above 20 years old.

3.3 Conceptual Framework

The conceptual framework of the study is depicted in Figure 1.

Figure 1: Conceptual Framework



Source: Author developed based on literature

3.4 Data Collection Technique

During the data collection process, the researcher gathered quantitative data using questionnaires as the measuring tool. An electronic questionnaire was prepared using Google Sheets and distributed to all the players through various electronic and social media platforms such as Viber, WhatsApp, and Telegram. This allowed for the collection of primary data from the participants. The measurement of Mental Toughness was done using the 18-

item Mental Toughness Questionnaire (MTQ-18). The MTQ-18 is derived from the longer MTQ-48, which consists of four independent but correlated factors: challenge, commitment, control, and confidence. To assess the sports performance the researcher uses a sports performance questionnaire.

4. RESULTS AND ANALYSIS

4.1 Demographic Profile of the Respondents

Table 2 depicts the demographic profile of the respondents.

Table 2: Demographic Profile of the Respondents

Variables	Categories	Frequency	Percentages
1. Gender	Male	25	16.66%
	Female	125	83.33%
2. Age Group	Youth 17 years	23	15.33%
	Junior 20 years	127	84.66%
3. Home town	Urban	54	36%
	Suburban	21	14%
	Rural	75	50%
4. Educational level	O/L	02	1.33%
	A/L	83	55.33%
	Diploma	43	28.66%
	Undergraduate	18	12%
	Degree Holder	04	2.66%
5. Employment Status	Student	126	84%
	Self Employed	05	2.77%
	Full time employer	11	7.33%
	Unemployed	08	5.33%
6. Cultural Background (Religion)	Buddhist	09	6%
	Hindu	109	60.55%
	Muslim	10	6.66%
	Christian	22	14.66%
7. Civil status	Married	03	2%
	Unmarried	147	98%

Based on the data analysis, the majority of the studied sample consists of male weightlifters, accounting for 83.33% of the total participants. Additionally, most of the weightlifters in the sample are 20 years old, making up 85.33% of the group. Regarding the living arrangements, 50% of the weightlifters reside in rural areas, while 54 players live in urban areas. In terms of cultural background, Buddhist players represent 6% of the sample, while Hindu, Muslim, and Christian players account for 60.55%, 6.66%, and 14.66% respectively. A significant portion of the players in the sample are unmarried, and the majority of them have received a good level of education.

4.1.1 Data Analysis Relevant to the Study's Objectives

SPSS 22.0 software was used to analyze the data, including descriptive statistics, one-way variance, independent sample t-test, internal consistency test, and multiple linear regression analysis. The Pearson Correlation Analysis was conducted to examine the relationship between mental toughness and sports performance. The correlation between the variables is presented in Table 3.

Table 3: Correlation analysis

Variable	Correlation coefficient	P value	Remarks
Gender	0.365	0.179	Not significant
Confidence	0.058	0.027	Not significant
Constancy	-0.826	0.039	Significant
Control	-0.183	0.039	Significant

Dependent Variable: Sports Performance

Source: Author developed based survey data

It was determined that the gender, Constancy, Confidence and Control are statistically significant at a 5% significance level. According to this analysis, gender and confidence positively affect the performance of players while Constancy and Control show a negative relationship. The regression model according to the results is given below.

$$\text{Sports Performance} = 0.365 (\text{Gender}) + 0.058(\text{Confidence}) - 0.826(\text{Constancy}) - 0.183(\text{Control})$$

This means, for every unit increase in Confidence the performance of the players may increase by 0.058 but when constancy and control increase by one unit performance may decrease by 0.826 and 0.183 respectively. The p-value of the interaction of sports performance and Gender is 0.179, which is >0.05. Hence, gender does not moderate the mental toughness and performance relationship.

5. Conclusion and recommendations

The main objective of this study was to investigate the relationship between mental toughness and gender on players' performance, with mental toughness being examined through three factors: Confidence, Constancy, and Control. The results confirmed a positive correlation between Confidence and sports performance indicating that higher levels of Confidence are associated with better performance. However, Constancy and Control showed a negative correlation with performance level, suggesting that increased Constancy and Control were linked to decreased performance.

The study's findings suggest that Confidence positively influences players' performance, while Constancy and Control negatively impact performance. This highlights the direct influence of mental toughness on weightlifters' performance. The research sheds light on an unexplored area in Sri Lanka, and future implications can involve comparing mental toughness levels in other sports and provinces to assess their impact on performance. Psychological skills are deemed critical for sports success, and developing a psychological training program based on the study's findings can greatly benefit athletes in Sri Lanka. This study is one of the few that focuses on weightlifting in Sri Lanka, especially in the Northern Province. By gathering information from previously untested weightlifters in this region, the research fills a gap in knowledge. The study emphasizes the importance of psychological constructs and their application across all levels of sports, offering valuable insights for the development of sports in Sri Lanka.

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