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**Mental Toughness and Team Performance (Ranking Points) among Hockey Players in  
Kenya's Premier League**

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### Mental Toughness and Team Performance (Ranking Points) among Hockey Players in Kenya's Premier League



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#### Abstract

**Purpose:** Mental toughness is a critical psychological construct associated with elite athletic performance. This study examined the relationship between mental toughness and team performance among hockey players competing in the Kenya Premier League.

**Methodology:** A cross-sectional analytical design was employed, involving 288 male and female hockey players drawn from 12 premier league teams. Mental toughness was assessed using an adapted version of the Mental Toughness Questionnaire-48 (MTQ48), measuring the four core components of confidence, commitment, control, and challenge. Team performance data were obtained from official Kenya Hockey Union match records and operationalized using ranking points accumulated across the season. Data were analyzed using descriptive statistics, normality tests, Spearman's rho correlation, and regression analysis.

**Findings:** The findings revealed a strong and statistically significant positive relationship between overall mental toughness and team performance. All four components of mental toughness independently demonstrated significant positive associations with ranking points. The results underscore the importance of psychological resilience and mental skills in competitive hockey performance.

**Unique Contribution to Theory, Practice and Policy:** The study concludes that mental toughness is a vital predictor of success in elite hockey and recommends the systematic integration of mental toughness training into coaching and athlete development programs within the Kenya Premier League.

**Keywords:** *Mental Toughness, Team Performance, Elite Hockey, Kenya Premier League*

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## INTRODUCTION

Elite sport performance is increasingly recognized as a complex outcome of not only physical conditioning and technical proficiency but also psychological preparedness. While physiological strength, tactical awareness, and skill execution remain essential components of athletic success, psychological factors often distinguish consistently high-performing athletes from their less successful counterparts, particularly in high-pressure competitive environments (Weinberg & Gould, 2011). Among these psychological attributes, mental toughness has emerged as one of the most influential constructs in contemporary sport psychology research due to its strong association with resilience, consistency, and performance excellence.

Mental toughness is commonly conceptualized as a multidimensional psychological resource that enables athletes to cope effectively with pressure, adversity, and competition-related stress while maintaining optimal performance levels (Clough, Earle, & Sewell, 2002). Athletes who are mentally tough are characterized by their ability to remain focused under demanding circumstances, regulate emotions, sustain motivation, and interpret challenges as opportunities for growth rather than threats (Jones, Hanton, & Connaughton, 2007). These qualities are particularly critical in elite sport contexts, where athletes are frequently exposed to intense competition, public scrutiny, performance expectations, and the pressure to succeed consistently.

The most widely accepted framework for understanding mental toughness is the Four Cs model, which conceptualizes the construct as comprising four interrelated components: control, commitment, confidence, and challenge (Clough et al., 2002). Control refers to an athlete's capacity to regulate emotions and maintain composure in stressful situations; commitment reflects persistence and determination in pursuing performance goals; confidence denotes belief in one's abilities and capacity to succeed; and challenge represents the tendency to perceive demanding situations as opportunities for development rather than sources of threat. Empirical evidence suggests that athletes who score highly across these dimensions are better equipped to sustain effort, adapt to adversity, and perform optimally in competitive environments (Nicholls, Polman, Levy, & Backhouse, 2009; Gucciardi et al., 2015).

A growing body of international research has demonstrated a positive relationship between mental toughness and various indicators of sport performance, including competitive success, ranking outcomes, and consistency of performance across seasons (Cowden, 2017; Slimani et al., 2016; Sheard & Golby, 2004). Mentally tough athletes have been shown to perform better under pressure, recover more effectively from setbacks, and maintain performance levels during prolonged competitive demands. Consequently, coaches and sport psychologists increasingly emphasize the development of mental toughness as a core component of athlete preparation and long-term performance enhancement (Weinberg, 2013).

Despite the expanding global literature on mental toughness, research within African sport contexts remains limited, particularly in team sports such as field hockey. Most empirical studies on mental toughness have been conducted in Western or Asian settings, often focusing on individual sports or professional leagues with advanced psychological support systems (Cowden, 2017; Gucciardi et al., 2015). This geographical imbalance limits the generalizability of existing findings to African sporting environments, where athletes often face distinct structural, cultural,

and resource-related challenges that may influence psychological development and performance outcomes.

In the Kenyan context, field hockey holds a significant place in the country's sporting history, having achieved notable international success during the mid-twentieth century. However, Kenya's performance in international hockey competitions has declined considerably in recent decades, with national teams experiencing reduced competitiveness at continental and global levels (Kenya Hockey Union, 2022). While several factors may contribute to this decline, including infrastructural limitations, reduced exposure to international competition, and technical development gaps, psychological preparedness has been identified as a potential area of concern (Muasya, 2018; Rintaugu et al., 2022). Elite competitions such as the Kenya Premier League expose players to intense physical and psychological demands, making mental toughness a potentially critical determinant of team performance and competitive success.

Although previous studies in Kenya have examined psychological skills such as motivation, anxiety, and mental skills training in sport, limited empirical attention has been given specifically to mental toughness and its relationship with performance outcomes among elite hockey players (Muasya, 2018; Karani, 2019). Moreover, existing studies have often focused on individual psychological attributes rather than adopting a comprehensive multidimensional framework such as the Four Cs model. As a result, there remains a significant gap in understanding how mental toughness contributes to team performance within elite Kenyan hockey.

This study seeks to address this gap by examining the relationship between mental toughness and team performance, operationalized through ranking points, among hockey players competing in the Kenya Premier League. By grounding the investigation in a well-established theoretical framework and utilizing objective performance indicators, the study aims to contribute context-specific empirical evidence to the sport psychology literature. The findings are expected to provide valuable insights for coaches, sport psychologists, and policy-makers by highlighting the importance of psychological resilience and mental skills development in enhancing elite hockey performance in Kenya.

The present study is grounded in the Four Cs model of mental toughness, which conceptualizes the construct as comprising control, commitment, confidence, and challenge (Clough, Earle, & Sewell, 2002). While this framework has been widely adopted in sport psychology and supported by substantial applied research, contemporary scholarship has raised important conceptual and psychometric debates. Critics argue that the Four Cs model may oversimplify mental toughness by emphasizing its dispositional nature, with insufficient attention to contextual, developmental, and state-like variations in psychological functioning (Gucciardi et al., 2015; Perry, 2021). Additionally, questions regarding the factorial validity and cross-cultural stability of the MTQ-48 have led to calls for refinement and revalidation of the instrument (Clough et al., 2012; Gucciardi et al., 2015). In response, the MTQ-Plus has been introduced as an expanded and psychometrically enhanced assessment tool designed to retain the Four Cs structure while offering improved profiling and interpretive precision. Acknowledging these debates positions the present study within current academic discourse and underscores the need for contextual validation of mental toughness measures in non-Western sport environments such as Kenyan elite hockey.

Importantly, although mental toughness is measured at the individual level, its influence on performance in team sports is theoretically justified through collective psychological processes. Bandura's theory of collective efficacy posits that shared beliefs in a team's conjoint capability significantly influence group motivation, persistence, coordination, and performance outcomes (Bandura, 1997). Empirical evidence consistently demonstrates that higher collective efficacy predicts superior team performance across sporting contexts (Stajkovic, Lee, & Nyberg, 2009; Alves et al., 2021). Individually mentally tough athletes, characterized by confidence, emotional regulation, commitment, and adaptive challenge appraisal may contribute to stronger collective efficacy by modeling resilient behaviors, sustaining effort under pressure, and reinforcing shared performance expectations. Furthermore, research on team resilience suggests that teams capable of collectively interpreting adversity as manageable and growth-oriented are more likely to maintain cohesion and performance consistency across competitive seasons (Fletcher & Sarkar, 2012; Morgan, Fletcher, & Sarkar, 2015). Through mechanisms such as emotional contagion, coordinated coping responses, and shared leadership, individual mental toughness can therefore aggregate into team-level psychological resources that enhance objective outcomes such as ranking points. This theoretical integration provides a sound basis for examining how individual mental toughness scores among Kenya Premier League hockey players are associated with team performance indicators.

### **Statement of the Problem**

Despite the recognized importance of psychological attributes in elite sport performance, mental toughness has received limited empirical attention within Kenyan field hockey, particularly at the premier league level (Muasya, 2018). Although Kenya produced high international finishes in earlier decades (for example, a fourth-place finish at the 1971 World Cup), formal match-based world rankings were only introduced by the International Hockey Federation in 2003, which means direct rank comparisons to 1990 are not possible (FIH, 2003). Using the available ranking record, Kenya's international standing has nonetheless shown marked variation since the rankings' inception; reaching a low point of 63 in 2004 and a peak of 37 in early 2017 yet by the mid-2020s the team had not returned to those earlier highs, underscoring a longer-term performance challenge (Kenya Hockey Union, 2022). Practically, this performance trajectory has real consequences beyond academic interest: the absence of robust, context-validated research on mental toughness and team psychological processes constrains the Kenya Hockey Union's ability to adopt standardized psychological screening and monitoring protocols for league and national-team selection, to integrate evidence-based mental skills training into talent development pathways, and to evaluate the psychological readiness of players across a season (Kenya Hockey Union, 2022; Muasya, 2018; Karani, 2019). Addressing this applied shortfall is therefore urgent, not only to determine whether individual mental toughness predicts team outcomes such as season ranking points, but also to enable the national body and clubs to implement standardized psychological assessment and intervention procedures that would directly inform selection, training and retention decisions.

### **METHODOLOGY**

A cross-sectional analytical research design was employed to examine the relationship between mental toughness and team performance among hockey players in the Kenya Premier League. The

study population consisted of 432 registered male and female players drawn from premier league teams across the country. Stratified random sampling was first used to categorize players by gender, followed by simple random sampling to select a representative sample of 288 participants (144 males and 144 females). Mental toughness was assessed using an adapted version of the Mental Toughness Questionnaire-48 (MTQ48), comprising 29 items measuring the four core components of control, commitment, confidence, and challenge on a five-point Likert scale. Team performance data were obtained from official Kenya Hockey Union league match sheets, with ranking points accumulated over the season used as the objective performance indicator. Data analysis involved descriptive statistics to summarize participant characteristics and mental toughness levels, the Shapiro–Wilk test to assess data normality, and Spearman’s rho correlation analysis to determine the relationship between mental toughness and performance. All statistical analyses were conducted at a significance level of  $p < .05$ .

## Results

Descriptive analysis was conducted to determine the levels of mental toughness among hockey players competing in the Kenya Premier League. The four components of mental toughness; challenge, commitment, control, and confidence were assessed using the adapted MTQ48 instrument. Overall, players demonstrated moderate to high levels across all four components, indicating a generally strong psychological profile among elite league participants.

Challenge scores suggested that players were able to perceive competitive pressure and demanding situations as opportunities for growth. Commitment scores reflected high levels of persistence and goal orientation during training and competition. Control scores indicated that most players were capable of regulating emotions and maintaining focus under pressure, while confidence scores showed strong belief in individual abilities and decision-making during competitive situations.

**Table 1: Descriptive Statistics for Challenge Component of Mental Toughness**

	N	Mean	Std. Deviation
The more pressure there is during training and competition, the more I enjoy it.	288	3.53	1.26
I remain focused when under pressure of competition.	288	3.57	1.259
I know how to relax/compose myself when competition pressure is high.	288	3.58	1.23
I control my emotions (anger, annoyance, nervousness, happiness, excitement, anxiety) during competition.	288	3.61	1.196
I make good or sensible decisions when under pressure of competition.	288	3.57	1.267
I remain positive (optimistic) difficult situations or setbacks (including losing) in competition.	288	3.00	0.000
I plan and manage my training and competition time well.	288	3.00	0.000
I think of ways to ease (overcome) pressure in training and competition.	288	4.00	0.000

**Table 2: Descriptive Statistics for Commitment Component of Mental Toughness**

	N	Mean	Std. Deviation
I still remain determined or persisted when I perform badly in competition.	288	3.93	0.923
I keep putting more effort when I have to give such more effort.	288	4.01	0.881
I refocus on the next competition after poor performance.	288	3.79	0.929
I set goals to achieve in my training sessions.	288	4.01	0.924
I set short- goals for participation in my sport.	288	3.82	0.839
I regularly set realistic goals for training and competition and feel excited when I achieve them.	288	3.91	0.921

**Table 3: Descriptive Statistics for Control Component of Mental Toughness**

	N	Mean	Std. Deviation
I am able to handle several complex tasks at the same time in both my life and competition.	288	3.64	1.056
I am able to control any disturbing thoughts in training and competition.	288	3.6	1.131
I can stay focus in competition when faced with other disturbing activities (distractions) in my life.	288	3.58	1.063
I able to concentrate regularly throughout a long competition.	288	3.85	1.029
I do not regularly focus on how others are doing in training and competition.	288	3.76	0.957
I can overcome the pain barrier in training.	288	3.61	1.06
I am not disturbed (distracted) by how other competitors perform.	288	3.69	1.022

**Table 4: Descriptive Statistics for Confidence Component of Mental Toughness**

	N	Mean	Std. Deviation
I can see myself achieving my goals in training and competition	288	4.00	0.000
I believe in my abilities to achieve my competition goals.	288	4.00	0.000
I believe in my capabilities even after poor performance.	288	3.56	1.265
I make good decisions and suggestions in training and competition	288	3.58	1.266
I find it easy to self- doubt when they get into my mind.	288	3.55	1.214
I trust in my talent and skills in my sport.	288	3.56	1.251
I believe that I have potential to excel in completion.	288	3.53	1.243
I am more superior to my competitors.	288	3.57	1.245

**Table 5: Summary of Descriptive Statistics for Mental Toughness Components**

<b>Variable</b>	<b>Mean</b>	<b>SD</b>	<b>Median</b>
Challenge	3.4822	0.7108	3.8750
Commitment	3.9126	0.7572	4.0000
Confidence	3.6675	0.8485	4.1250
Control	3.6771	0.85737	3.7143
Overall MT	3.6860	0.5097	3.7525
MT POMP Score	67.1502	12.7423	68.8125

**Relationship between Mental Toughness and Team Performance**

Spearman's rho correlation analysis was conducted to examine the relationship between mental toughness and team performance, operationalized through accumulated ranking points. The results revealed a strong, positive, and statistically significant relationship between overall mental toughness and team performance ( $p < .05$ ). This indicates that teams composed of players with higher levels of mental toughness tended to accumulate more ranking points over the competitive season.

Further analysis of individual components showed that challenge, commitment, control, and confidence were each positively and significantly correlated with performance ranking points. Among the components, confidence and commitment demonstrated the strongest associations with performance outcomes, suggesting that belief in ability and sustained effort were particularly influential in competitive success.

**Table 6: Spearman's Rho Correlation Analysis between Mental Toughness Components and Performance Ranking Points**

		Challenge	Commitment	Control	Confidence	MT	Performance
Challenge component of MT	Correlation Coefficient	1.000	.026	.021	<b>.847</b>	<b>.727**</b>	<b>.634**</b>
	Sig. (2-tailed)	.	.655	.719	<b>.000</b>	<b>.000</b>	<b>.000</b>
	N	288	288	288	288	288	288
Commitment component of MT	Correlation Coefficient	.026	1.000	<b>.194**</b>	.045	<b>.472**</b>	<b>.463**</b>
	Sig. (2-tailed)	.655	.	<b>.001</b>	.446	<b>.000</b>	<b>.000</b>
	N	288	288	288	288	288	288
Control component of MT	Correlation Coefficient	.021	.194**	1.000	.010	<b>.493**</b>	<b>.446**</b>
	Sig. (2-tailed)	.719	.001	.	.863	<b>.000</b>	<b>.000</b>
	N	288	288	288	288	288	288
Confidence component of MT	Correlation Coefficient	<b>.847**</b>	.045	.010	1.000	<b>.726**</b>	<b>.634**</b>
	Sig. (2-tailed)	.000	.446	.863	.	<b>.000</b>	<b>.000</b>
	N	288	288	288	288	288	288
Mental Toughness (components average) score	Correlation Coefficient	<b>.727**</b>	<b>.472**</b>	<b>.493**</b>	<b>.726**</b>	1.000	<b>.916**</b>
	Sig. (2-tailed)	.000	.000	.000	.000	.	.000
	N	288	288	288	288	288	288
<b>Performance points</b>	Correlation Coefficient	<b>.634**</b>	<b>.463**</b>	<b>.446**</b>	<b>.634**</b>	<b>.916**</b>	1.000
	Sig. (2-tailed)	.000	.000	.000	.000	<b>.000</b>	.
	N	288	288	288	288	288	288

**Predictive Influence of Mental Toughness on Performance**

Regression analysis was conducted to determine the predictive contribution of mental toughness to team performance. The model summary indicated that mental toughness accounted for a significant proportion of variance in performance ranking points. Overall mental toughness emerged as a statistically significant predictor of team performance, confirming that psychological resilience and coping capacity play a meaningful role in competitive outcomes among elite hockey players.

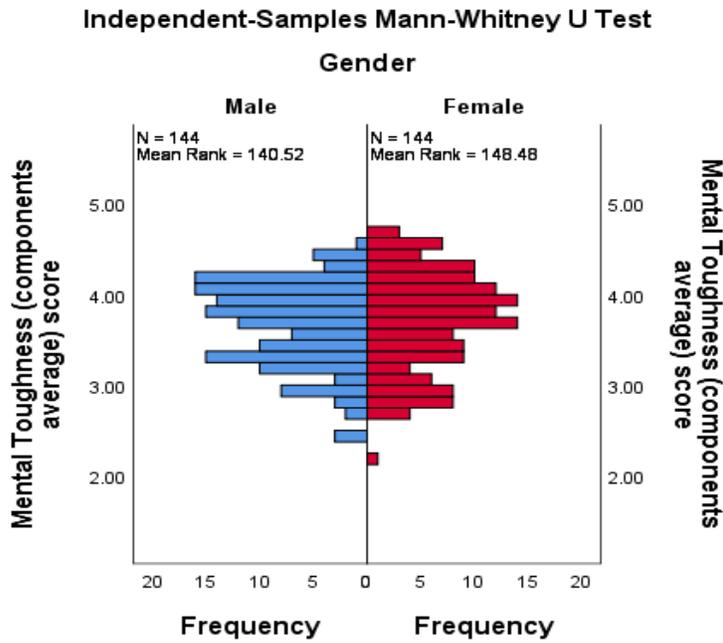
**Table 7: Model Summary of the Relationship between Mental Toughness and Performance**

R	R-sq	MSE	F	df1	df2	P
.9095	<b>.8271</b>	4.7609	452.9322	3.0000	284.0000	<b>.0000</b>

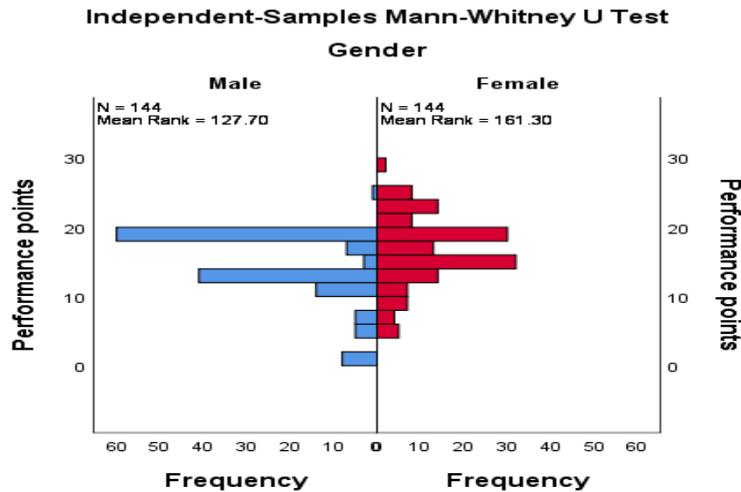
**Model**

	Coeff	Se	T	P	LLCI	ULCI
Constant	12.6749	.4070	31.1388	.0000	11.8737	13.4762
MTPOMPsc	.4132	.0335	12.3419	.0000	.3473	.4790
Age Code	1.6094	.2574	6.2520	.0000	1.1027	2.1161
Int_1	-0.0315	.0204	-1.5426	<b>.1240</b>	-0.0716	.0087

Figure 1 illustrates the distribution of overall mental toughness scores, while Figure 2 presents the distribution of team performance ranking points. The graphical patterns demonstrate a consistent trend whereby higher mental toughness scores align with higher performance outcomes.



*Figure 1: Distribution of Overall Mental Toughness Scores*



*Figure 2: Distribution of Team Performance Ranking Points*

## Discussion

The findings of this study affirm mental toughness as a critical psychological determinant of competitive success among elite hockey players in the Kenya Premier League. Players who demonstrated higher levels of confidence, emotional control, commitment, and adaptive responses to challenge were more likely to contribute to superior team performance, as reflected in accumulated ranking points. This reinforces the conceptualization of mental toughness as a multidimensional construct that enables athletes to cope effectively with competitive pressures while sustaining optimal performance levels (Clough et al., 2002; Strycharczyk, 2014).

The positive relationship observed between mental toughness and performance is consistent with previous empirical evidence across various sports and competitive levels. Studies by Sheard and Golby (2004), Cowden (2017), and Slimani et al. (2016) similarly reported that athletes with higher mental toughness consistently achieved superior performance outcomes, particularly in elite and high-pressure competitive environments. The current findings extend these observations to elite field hockey within an African context, addressing a notable gap in the literature where most mental toughness research has been concentrated in Western or Asian sporting settings.

Each component of mental toughness played a meaningful role in enhancing performance outcomes. Confidence, in particular, appeared to support effective decision-making and sustained belief in personal and team capabilities, even under competitive pressure, aligning with the assertions of Weinberg and Gould (2011) and Wood (2017). Emotional control enabled players to regulate stress, anxiety, and competitive arousal, thereby maintaining focus and composure during matches, as emphasized by Lyons et al. (2019) and Steffen et al. (2020). Commitment facilitated persistence and effort, especially following setbacks, supporting earlier findings that mentally tough athletes are more resilient and goal-oriented (Sun, 2018; Steffen et al., 2020). Additionally,

the challenge component allowed players to interpret demanding situations as opportunities for growth rather than threats, a characteristic consistently associated with high-level performance (Clough et al., 2012; Velten, 2018).

Importantly, the findings suggest that mental toughness functions as a universal psychological resource in elite hockey, contributing to performance irrespective of contextual differences within the Kenyan Premier League. This supports the argument that psychological preparedness is as essential as physical and technical training in modern sport (Cowden, 2017; Wood, 2017). Collectively, the results underscore the need for structured mental toughness development programs within Kenyan hockey, as strengthening these psychological attributes may enhance individual consistency, team cohesion, and overall competitive success at both league and national levels.

## **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **Summary**

The study established a significant positive relationship between mental toughness and team performance among hockey players competing in the Kenya Premier League. Players who exhibited higher levels of the four mental toughness components; confidence, control, commitment, and challenge tended to contribute to superior team performance as measured by accumulated ranking points. Although male players recorded marginally higher mean scores across mental toughness components, statistical analysis revealed no significant gender-based differences. Furthermore, gender did not moderate the relationship between mental toughness and performance, indicating that mental toughness functions as an equally important performance-enhancing psychological resource for both male and female hockey players. Overall, the findings demonstrate that mental toughness is a consistent and reliable predictor of competitive success in elite Kenyan hockey.

### **Conclusion**

The findings of this study confirm that mental toughness is a critical psychological determinant of performance in elite field hockey. The ability to regulate emotions, remain committed to performance goals, maintain confidence under pressure, and interpret competitive challenges positively significantly enhances team performance outcomes. The absence of significant gender differences in the mental toughness–performance relationship highlights the universal relevance of mental toughness across player groups within the Kenya Premier League. These results reinforce existing theoretical models of mental toughness and extend their applicability to the Kenyan and broader African sporting context, emphasizing the need to integrate psychological preparedness alongside physical and technical training in elite sport development.

### **Recommendations**

Based on the findings, it is recommended that coaches, sport psychologists, and athletic support personnel within the Kenya Premier League deliberately incorporate structured mental toughness development programs into regular training schedules. Such programs should focus on enhancing emotional control, confidence, commitment, and adaptive coping with competitive challenges for all players regardless of gender. Hockey administrators and policy-makers should prioritize

psychological skills training within athlete development frameworks to improve league competitiveness and national team performance. Additionally, future research should explore longitudinal and intervention-based approaches to mental toughness development, as well as examine its interaction with other psychological variables such as motivation, stress, and leadership in different competitive levels and age groups.

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