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Mental Toughness Among Basketball and Volleyball Athletes in Egypt and Iraq. A comparative Study

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Abstract:

The purpose of this study was to investigate the mental toughness determinants that differentiate basketball and volleyball players in Egypt and Iraq. Fifty-five male players participated in this study from national teams in Egypt and Iraq. Thirty basketball players (Egypt (15) + Iraq (15). Twenty-five volleyball players (Egypt (14) + Iraq (11). The age range between 19 and 25 years old, and the training experience range between 9 and 11 years. The results revealed that:

- Egyptian basketball players exhibited significantly higher levels of mental toughness determinants (constancy, and overall SMTQ) compared to their Iraqi counterparts. Similar levels of mental toughness determinants (confidence, and control) found in Egyptian and Iraqi basketball players.
- Iraqi volleyball players exhibited significantly higher levels of mental toughness determinants (confidence, control, and overall SMTQ) compared to their Egyptian counterparts. Similar levels of mental toughness determinant (constancy) found in Egyptian and Iraqi volleyball players.

– Basketball players exhibited significantly higher levels of mental toughness determinants (confidence, and overall SMTQ) compared to their volleyball counterparts. Volleyball players exhibited significantly higher levels of mental toughness determinant (constancy) compared to their basketball counterparts. Similar levels of mental toughness determinant (control) found in basketball and volleyball players
– In conclusion, in our study, we found that mental toughness varies depending on the type of event. These results are important for instructors to consider when trying to understand and apply these concepts to improve the technical aspects of training.

Keywords: mental toughness, basketball, volleyball

Introduction

In recent years, the methods of physical, skill and tactical preparation have become much closer, and there is a need for more attention to the psychological aspect. Therefore, sports psychology has developed significantly in Egypt and Iraq, sport is currently requiring trained player who can implement coping strategies, mental training to achieve goals and the reinforcement of specific skills in sport that help increase performance in competitions (Nicholls et al., 2009).

Team sports require specific mental skills that not all athletes have; among these skills, mental toughness is an indispensable variable that needs to be worked on and explored thoroughly so that the athlete can live a high-level experience and keep his thoughts focused on his set goals.

In a study conducted by Luszki (1982) found that successful performance is reliant on four key elements: physical well-being, skill, experience, and mental toughness. These elements are interlinked and work together during performance. Loehr, (1995) highlighted that coaches and athletes stress the significance of psychological skills, which embody mental toughness, in contributing at least 50% towards achieving athletic success. Gould et al., (2002) confirmed that mental toughness stands as the foremost factor in reaching peak athletic performance. Additionally, Cox (2012) indicated that elite athletes considered mental toughness to be the crucial element for achieving athletic success.

The concept of mental toughness had several definitions because it has been viewed from different theories. Although the conceptual framework of mental toughness is still

being debated in current literature, research in sports psychology is progressing rapidly, uncovering various structures. Jones (2002) identified two distinct aspects of mental toughness through a qualitative approach. Mental toughness is a valuable trait that applies to various aspects such as competition and training in general. While special mental toughness involves sharper focus on opponents, trust, and self-control in high-pressure situations. It is a psychological skill that can be naturally possessed and honed through intentional development.

Numerous authors have defined mental toughness as the ability of an individual to effectively adapt to adversity, trauma, or stress, particularly in the context of sports. These authors also propose that having supportive family networks in sports can play a significant role in enhancing mental toughness. (Golshani et al., 2021, Elijah et al., 2022).

Zeiger & Zeiger (2018) proposed that mental toughness can reduce the likelihood of athletes perceiving their coping resources as insufficient for the challenges they face. They argued that mental toughness extends beyond sports and influences various personal aspects of athletes, such as enhancing sleep quality (Guozhuang et al., 2024), self-control (Christiana et al., 2020), self-confidence (González et al., 2015), and overall interpersonal relationships (Cowden et al., 2016). Amr et al., (2017) found that mental toughness was strongly related to resilience and that it would be negatively related to stress. It was also found that resilience and mental toughness could be predictors of stress; the importance of mental toughness in situations of stress and anxiety in competition is highlighted.

In Addition, there is a strong analogy with pain tolerance and injury rehabilitation, this due to the provision of control at an emotional level and a high capacity to focus on a new goal derived from the changes that must be faced due to the injury, in addition to the influence that the athlete now has on the perception of effort, which increases the levels of motivation and perseverance. (Crust et al., 2014; Gucciardi et al., 2017; Halper and Vancouver, 2016).

According to the above, mental toughness is defined as the resilience of an individual and the internal ability that he develops towards success, especially when faced with challenging circumstances, in which the athlete may have high levels of stress, which can be a threat to the individual's well-being.

Anand and Rahul's study (2018) found that basketball players showed significantly higher levels of mental toughness compared to volleyball players. The same study indicated

that mental toughness is an obligatory skill required in volleyball; However, little is known about mental toughness in basketball.

The idea for the study stemmed from observing significant performance disparities between global and Arab levels in international tournaments, despite similarities in style and techniques. This raised questions regarding the factors contributing to this gap. It is speculated that a lack of mental toughness among national team players could be a key influence, as professional players tend to exhibit stability and resilience under competitive pressures. Therefore, the study aims to identify the mental toughness determinants that differentiate basketball and volleyball players in Egypt and Iraq.

Samples:

Fifty-five male players participated in this study from national teams in Egypt and Iraq. Thirty basketball players (Egypt (15) + Iraq (15). Twenty-five volleyball players (Egypt (14) + Iraq (11). The age range between 19 and 25 years old, and the training experience range between 9 and 11 years. The survey was conducted before the athletes' training sessions, with the participation of their coaches. The research ensured the confidentiality and anonymity of the gathered data, and the survey questionnaires did not ask for any personal information that could identify the participants. The study was approved by the Social Research Ethics Committee at Almaaqal University. In addition, permissions were obtained from the sports federations' governing bodies in Egypt and Iraq. The survey included information about the research, a statement requesting personal consent to participate, demographic questions (related to the participants' ages and training experience), and a verified tool in Arabic to evaluate.

Instrument:

The Sport Mental Toughness Questionnaire (SMTQ), created by Sheard et al., (2009) is designed to evaluate the mental toughness levels of athletes. This questionnaire consists of three subscales with a total of 14 items: 6 items measuring confidence ($\alpha = .80$), 4 items assessing constancy ($\alpha = .74$), and 4 items related to control ($\alpha = .71$). Participants are instructed to answer the items on a 4-point Likert scale, where 1 indicates "not at all true" and 4 signifies "very true." The scores from the SMTQ can range from 14 to 56. Completing the SMTQ takes a maximum of 15 minutes, after which the researchers gather the responses. Additionally, the instrument has been adapted into the Arabic language, achieving a validity score of 0.709 and a reliability score of 0.883.

Statistical Analysis:

The independent samples t-test was conducted to determine the significant differences between basketball and volleyball players. A significance level of 0.05 was used to test the hypotheses.

Results:

Table 1. Age, and training experience in the groups (mean ± SD)

Group		N	Age (years)	Training experience (years)	Significance
Egypt	Basketball	15	22.11 ± 3.13	7.43 ± 2.9	No Sign
	Volleyball	14	21.87 ± 2.46	7.84 ± 3.5	No Sign
Iraq	Basketball	15	22.89 ± 3.34	7.00 ± 3.3	No Sign
	Volleyball	11	21.57 ± 2.95	7.72 ± 2.8	No Sign

Table 1 shows the age, and training experience characteristics of the subjects. Significant differences were not observed in age, anthropometric characteristics, and training experience between the two groups.

Table 2. Mean ± SD, and "t" significant between Egyptian and Iraqi basketball players in SMTQ

Variables	Basketball		Significance
	Egypt	Iraq	
Confidence	**21.35 ± 1.51**	**20.74 ± 2.03**	**NS**
Constancy	**14.11 ± 1.29**	**12.25 ± 1.11**	**S**
Control	**14.50 ± 1.13**	**14.00 ± 1.87**	**NS**
Total SMTQ	**49.96± 1.31**	**46.99± 1.67**	**S**

Table 2. presented that:

- Egyptian basketball players exhibited significantly higher levels of mental toughness determinants (constancy, and overall SMTQ) compared to their Iraqi counterparts.
- Similar levels of mental toughness determinants (confidence, and control) found in Egyptian and Iraqi basketball players.

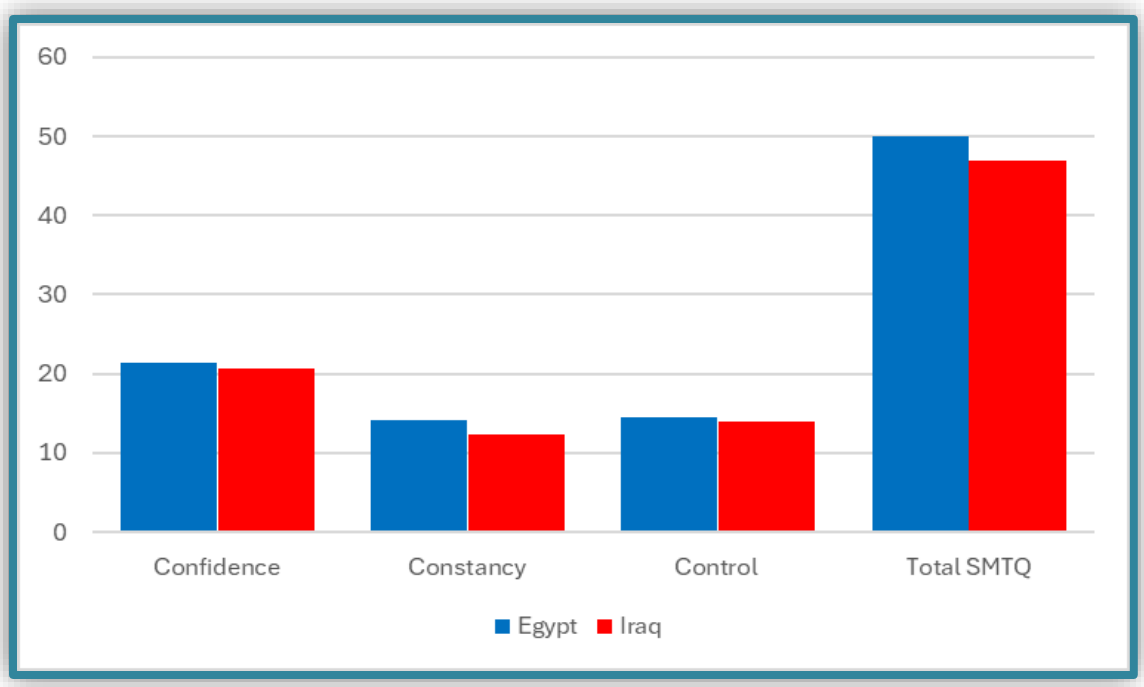

Fig.1 shows the differences between Egyptian and Iraqi basketball players in SMTQ

Table 3. Mean ± SD, and "t" significant between Egyptian and Iraqi volleyball players in SMTQ

Variables	Volleyball		Significance
	Egypt	Iraq	
Confidence	**15.63 ± 1.38**	**17.37 ± 1.51**	**S**
Constancy	**14.22 ± 1.27**	**14.23 ± 1.19**	**NS**
Control	**12.30 ± 1.50**	**14.68 ± 1.02**	**S**
Total SMTQ	**42.15± 1.38**	**46.28± 1.24**	**S**

Table 3. presented that:

- Iraqi volleyball players exhibited significantly higher levels of mental toughness determinants (confidence, control, and overall SMTQ) compared to their Egyptian counterparts.
- Similar levels of mental toughness determinant (constancy) found in Egyptian and Iraqi volleyball players.

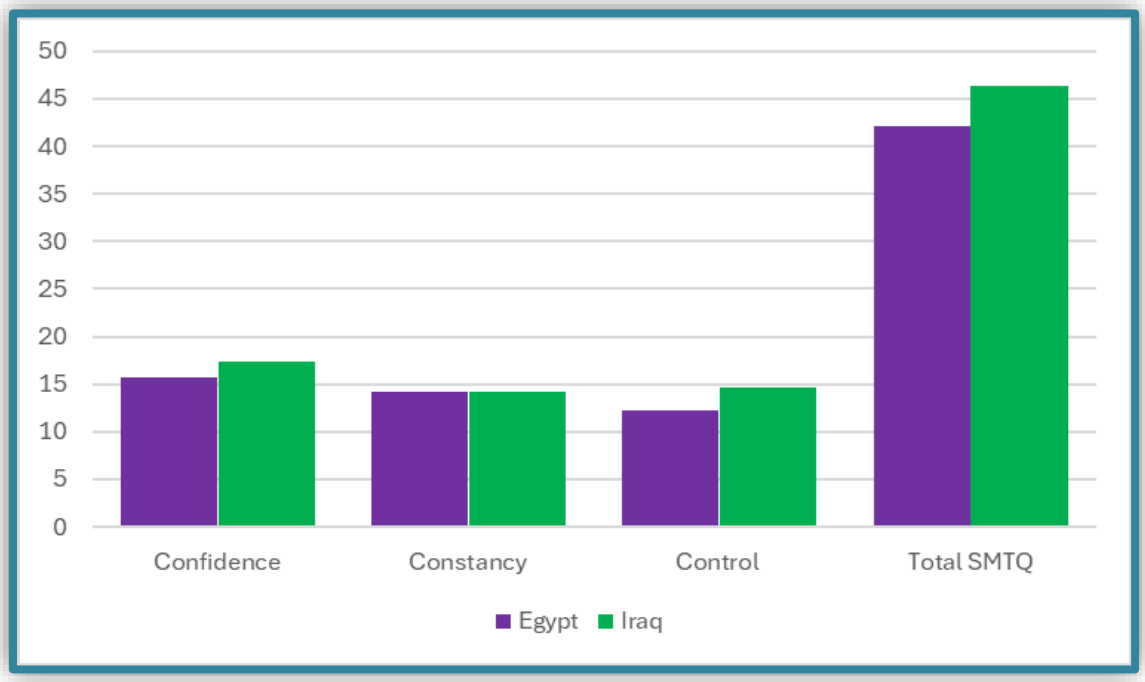

Fig.2 shows the differences between Egyptian and Iraqi volleyball players in SMTQ

Table 4. Mean ± SD, and "t" significant between basketball and volleyball players in SMTQ

Variables	Basketball	Volleyball	Significance
Confidence	21.05 ± 1.77	16.50 ± 1.45	S
Constancy	13.18 ± 1.20	14.23 ± 1.23	S
Control	14.25 ± 1.50	13.49 ± 1.26	NS
Total SMTQ	48.48± 1.49	44.22± 1.31	S

Table 4. presented that:

- Basketball players exhibited significantly higher levels of mental toughness determinants (confidence, and overall SMTQ) compared to their volleyball counterparts.
- Volleyball players exhibited significantly higher levels of mental toughness determinant (constancy) compared to their basketball counterparts.
- Similar levels of mental toughness determinant (control) found in basketball and volleyball players.

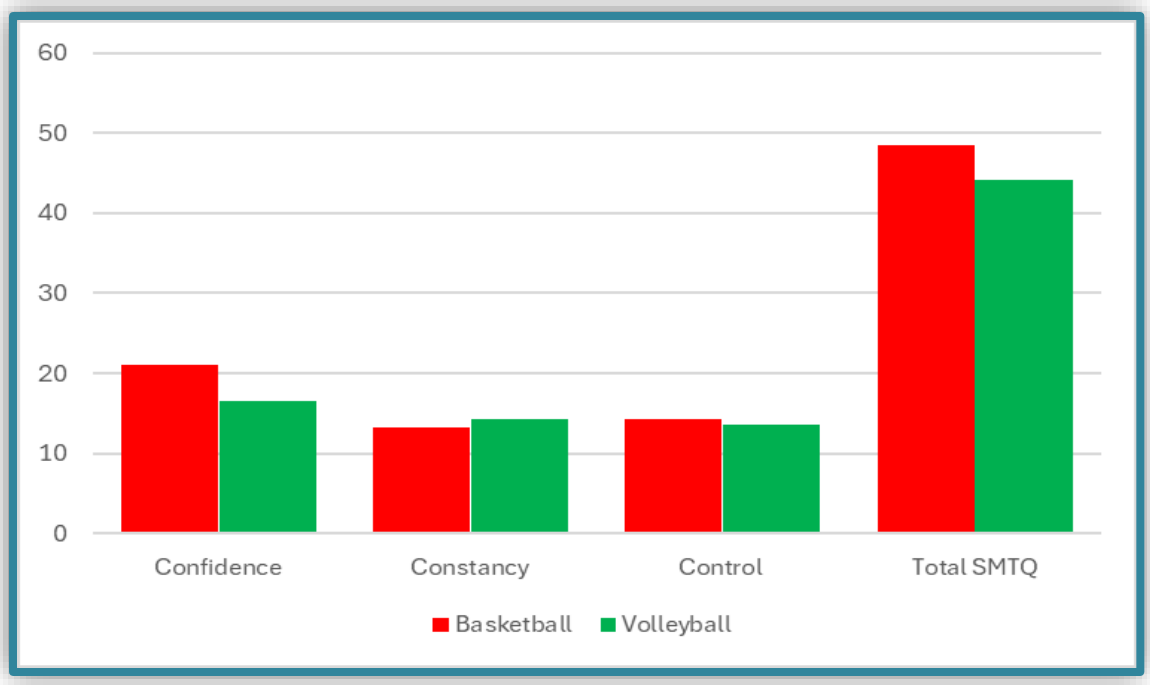

Fig.3 shows the differences between basketball and volleyball players in SMTQ

Discussion:

- The purpose of this study is to compare the mental toughness of basketball and volleyball players in Iraq and Egypt. In comparison to their volleyball counterparts, basketball players demonstrated noticeably higher levels of mental toughness determinants (confidence and overall SMTQ), according to a recent study. The competitive nature of basketball as opposed to volleyball may be the cause of this discrepancy. Whereas volleyball requires agility, fast reflexes, and less physical contact, basketball involves running, jumping, and physical contact. These results, however, do not apply to volleyball players, who in this study demonstrated lower mental toughness scores than basketball players, even though volleyball is an extremely demanding sport. It's probable that in volleyball, elements like practice, visualization skills, and strong concentration power play a more significant role in the success of volleyball athletes during competition. (Zarife, 2021)

- The results of the current study are consistent with previous studies (Jalili et al., 2011; Pintoa, 2015). However, these findings contradict some earlier results (Nicholls et al., 2009) which utilized a 48-item Mental Hardiness Questionnaire (MHQ48) to examine

differences across various sports, concluding that there was no significant disparity in mental hardiness between athletes engaged in team contact sports and those in non-contact sports. The discrepancies in findings may stem from the differing questionnaires employed; while Nicholls utilized a 48-item instrument, the present study relied on the 14-item SMTQ. Furthermore, Nicholls and colleagues posited that mental hardiness is a stable personality characteristic, suggesting it remains unaffected by varying situations and conditions (Nicholls et al., 2009).

- Additionally, this study revealed that volleyball athletes exhibited significant differences in mental toughness scores when compared to basketball players. The personal construct theory posits that individuals interpret and perceive reality through their unique mental frameworks, which are shaped by personal experiences and observations (Ashton & Lee, 2001).

- Slack et al., (2015) identifies several key traits of mentally resilient individuals, including self-confidence, motivation, the ability to manage pressure and anxiety, focus on tasks and lifestyle, regaining psychological control, and coping with physical discomfort. Furthermore, an analysis of the mental toughness subscales—confidence, constancy, and control—across various sports revealed notable differences among these categories. Significant disparities were found in the confidence subscale between volleyball and basketball players. () indicated that basketball confidence is an essential attribute for basketball players, as it plays a critical role in their ability to perform at their best on the court. Because basketball is a game that requires players to take calculated risks, such as taking a difficult shot or attempting a steal. When a player is confident in their abilities, they are more likely to take these risks and make bold moves on the court.

- In general, the higher levels of mental toughness observed in team sport athletes, as opposed to those in individual sports, can be attributed to the supportive nature of team dynamics, where players benefit from the encouragement of their teammates (Pintoa, 2015). Zeng et al., (2003) found that team athletes exhibited significantly greater confidence than their individual counterparts, suggesting that mental toughness is likely to be elevated among team participants (Zeng, 2003). This phenomenon may stem from the inherently competitive, aggressive, and prideful nature of team athletes, which is often fostered by the collaborative environment that necessitates enhanced mental resilience. Additionally, the concept of "team resilience" plays a significant role, as team

members collectively leverage their resources to effectively navigate challenges and adversities (Wright & Masten, 2015). Previous study has also indicated that team athletes tend to be more competitive than those who compete individually. Moreover, motivation is a critical factor in sports performance, particularly evident in the outcomes of team athletes (Jalili et al., 2011).

- There are no notable differences in mental toughness, specifically regarding confidence and control, between basketball players from Egypt and Iraq. All participants in this research are affiliated with their respective national teams, which contributes to their elevated mental toughness scores. Yazıcı et al., (2021) identified that the mental toughness levels among professional basketball players significantly differed based on the league in which they competed. Similarly, a study conducted on elite female football players (Danielsen et al., 2017) revealed that those in the 1st League exhibited considerably higher mental toughness scores compared to their counterparts in the 2nd and 3rd Leagues. These findings are consistent with our own results. In contrast, Yıldız (2017) reported no significant differences in the mental toughness levels of professional football players across various league levels. This lack of variation was also supported by Bair (2011), who found no significant differences in mental toughness scores based on competition or league level.

Conclusion:

- In our study, we found that mental toughness varies depending on the type of event. These results are important for instructors to consider when trying to understand and apply these concepts to improve the technical aspects of training

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