

Role of psychological factors on the performance of elite soccer players

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Abstract:

The application of psychological strategies to improve performance in sports has developed significantly over the past few decades. Nowadays, coaches are beginning to realize the significance of psychological factors in enhancing player's performance. However, determining the magnitude of the impact of psychological factors in a soccer game may assist in developing player's capacity to perform. This study aims to determine the role of psychological factors on the performance of elite soccer players. We enrolled elite players competing in the Malaysian Super League with a mean age of ± 25 years. Psychological constructs questionnaire proposed by PSIS-R-5 was administered to the players, and the scores of each player were recorded. We analyzed the performances of the players for eight weeks. A standard multiple regression was performed at $p \leq 0.05$ alpha levels with the motivation, confidence, anxiety control, mental preparation, team emphasis, concentration and cognition as (IVs) to predict performance (DV). A Noteworthy regression equation was found ($F(7, 12) = 15.109, P < .001$) with R^2 of .90 indicating that the model has approximately accounted for the total of 90% variability. Although correlations were found .57, .14, .88, .71, .65, .76 and .42 respectively between the (IVs) and the (DV), none of the (IVs) is a predictor of the (DV) ($P > 0.05$). Based on the results of this analysis, it is tempting to conclude that, despite the correlation between psychological factors and performance, psychological factors alone could not determine the performance of elite soccer players.

Key words: - Psychological factors; Elite players; Performance analysis; Soccer

Introduction

Throughout the most recent couple of years, psychology in professional soccer has risen in values. Nowadays, many professional soccer clubs have realized the importance of psychology in the game of soccer to improve performance (Raglin 2001). Mustafa and David (2014) reported that psychological factors such motivation, confidence, anxiety control, mental preparation, team emphasis, concentration, and cognition play a significant role in the improvement of performance of soccer players. Bull and Sham (1996) defined motivation as the external stimulus and internal mechanisms that arouse and direct behavior. The two types of motivation that can affect performance in soccer are extrinsic which comes as a result of rewards such as money, trophies or praise and intrinsic motivation which comes from within a player (Seipp 1991). Among an essential element of a psychological factor that determines performance is confidence. Morris (2010) pointed out that confidence is the trust or level of certainty a player possess the ability to perform well during competition. However, Patrick (2014) describes two types of confidence in soccer players. A reactive confidence player who lacks confidence after a poor performance is affected by a poor warm up, his first few plays dictate his confidence, is affected by a negative feedback, loses confidence rapidly after mistakes, always leaves confidence to chance. A proactive confidence player in the other hand is a player who feels confident going into the game, a relatively consistent performer, maintains stable confidence during the game, focuses on strengths prior to the game, visualizes success, feels confidence despite poor warm up and he is a player who is not intimidated by competitions. Macleod (1990) describes anxiety in soccer as the increased state of readiness of a player in the process of performance. He pointed out that, for a soccer player to perform well, it is important that arousal is maintained at a balanced level. Anxiety is classified as somatic which is seen as how the body responds to sports situation that has some symptoms like increased heart rate, increased breathing rate and feeling sick. Cognitive anxiety is the player's general nervousness that resulted in the reduction of concentration. State anxiety occurs when a player is consistently placed in a changing environment while trait anxiety is the characteristics that players have which make them react to the situation in a specific way. Taylor (1996) describes mental preparation as the readiness or the ability for a player to strive in a big game, stay focus, and take control of the ball as well as performing the higher range of player's talent and skill in respective of competitive circumstances. Team emphasis; soccer is both an individual and team sport, therefore, it is important for a player to realize that just as he has an impact on the team, the team also has an impact on him. The team as a group impacts on performance both in obvious and

subtle ways (Unnithan, White, Georgiou, Iga, & Drust 2012). Concentration according to Ptacek, (1995) is the ability of a player to ignore external factors that would otherwise distract him from performing at his best. Nideffer and Sagal (1993) describes cognition as the relationship between the thoughts of a player and his performance. They stated further that, the way the player thinks directly affects his behavior and performance. Developing positive cognitive strategies can help limit distraction and boost the performance of a player.

Elite professional soccer is a complex sport and performance depends on a number of factors such as physical, physiological and psychological. Throughout the most recent couple of years, the part of psychology in professional soccer clubs has been fully recognized. Professional soccer clubs such as Derby County in English premier league and Ajax football club in Holland have not only opened doors for psychological assessment in their team but have shown how it can help improve player performance (Vestberg, Gustafson, Maurex, Ingvar & Petrovic 2012). However, previous studies have focused on the effects of psychological factors on performance and emphasized that application of sports psychology plays a significant role in influencing performance in soccer (MacNamara, Button & Collins 2010; Helsen, Hodges, Winckel, & Starkes 2000).

Although, various studies conducted have shown that psychological factors influence performance positively in a soccer game, little has been done to focus on the degree to which psychological factors can improve the performance of players in soccer. The aim of this study is to evaluate the roles of psychological factors in the performance of elite soccer players.

Material & methods

Participants

The research participants consist of one of the soccer club competing in the Malaysian Super League (t.team). A total of 26 elite players were recruited with the mean age of ± 25 years old. Eleven performance analysts and a control person (C.P) were responsible for analyzing the player's performance. This study took place in Malaysia during 2014-2015 Malaysian Super League Season.

Instruments

A questionnaire developed by Mahoney, Gabriel & Perkins (1987) that is Psychological Skills Inventory for Sport or PSIS-R-5 containing 63 items on psychological factors which include motivation, confidence, anxiety control, mental preparation, team emphasis, concentration, and cognition was used. Statwatch application was installed on a tablet phone and used as a device for the collection of the players' performance based on the main performance indicators relevant to the demand for the game

Procedure

The questionnaire was distributed to the players before the beginning of the competition, and the scores of each player were recorded. Eleven analysts were recruited to help in the collection of the players' performance in such a way that each performance analyst covers a particular player during the analysis. Operational definition was given to each performance indicators in such that the coach, the controller of the analysis and the performance analysts were using the term unanimously. The players' performances were assessed based on clearing, crossing, dribble, heading, chasing the loose ball, shooting, foul and through pass coded either success (s) or fail (f). The information collected was analyzed by the controller of the analysis before being transferred to the coach at half time interval of the match. Performances of the club for eight weeks were evaluated. The performance indicators were approved by the chief coach of the club.

Statistical analysis A standard multiple regression was performed at $p \leq 0.05$ alpha level with the motivation, confidence, anxiety control, mental preparation, team emphasis, concentration and cognition as (IVs) to predict performance (DV).

Results

Table 1. Descriptive Statistics of the Variables

Variables	Mean	Std. Deviation	N
Performance	19.60	8.88	20
Motivation	4.48	0.02	20
Confidence	3.30	0.40	20
Anxiety control	3.12	0.09	20
Mental preparation	4.00	0.05	20
Concentration	3.18	0.07	20
Cognition	3.30	0.08	20

Table 1 indicates the descriptive statistics of the variables. The Mean, Standard deviation, as well as the number of the participants, is shown. Performance as the dependent variable has the highest number of mean and standard deviation while the mean variances of the psychological factors are closely associated with one another which indicated that they contribute to the prediction of performance in a relatively similar pattern.

Table 2. Standard Regression Analysis of Performance predicting Psychological Variables

Variable	<i>B</i>	β	<i>SE</i>	<i>t</i>	<i>p</i>
Performance	555.03	-	541.76	1.02	0.326
Motivation	196.30	0.36	94.18	2.08	0.059
Confidence	84.70	0.40	43.63	1.94	0.076
Anxiety Control	47.88	0.47	26.36	1.82	0.094
Mental Preparation	51.16	0.32	24.25	2.11	0.057
Team Emphasis	35.29	0.19	39.00	0.91	0.383
Concentration	25.52	0.19	31.05	0.82	0.427
Cognition	33.00	0.30	23.24	1.42	0.181

Note: $R = .948$, $R^2 = .898$, Adjusted $R^2 = .839$, $F / (df) = 15.11(7)$, $p > 0.05$

Table 2 shows the Standard Regression analysis of the model, it indicated that a significant regression equation was found for the model $R^2 = .898$ which explained that the model has approximately accounted for the total of 90% variability. All the psychological constructs (IVS) do not predict the performance (DV) $P > 0.05$. The Standardized beta coefficient revealed a positive effect on the contribution of each of the psychological of constructs to the explanation of the performance.

Table 3. Correlation among the Variables.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
performance	1.00	0.57*	0.14*	0.89*	0.71*	0.65*	0.77*	0.42*
motivation	0.57*	1.00	0.26	0.51	0.36	0.18	0.40	0.00
confidence	0.14*	0.26	1.00	0.15	0.31	0.47	0.16	0.72
anxiety control	0.89*	0.51	0.15	1.00	0.58	0.72	0.83	0.44
mental preparation	0.71*	0.36	0.31	0.58	1.00	0.61	0.73	0.45
team emphasis	0.65*	0.18	0.47	0.72	0.61	1.00	0.76	0.65
concentration	0.77*	0.40	0.16	0.83	0.73	0.76	1.00	0.35
cognition	0.42*	0.00	0.72	0.44	0.45	0.65	0.35	1.00

Note: * Significant $p < 0.05$

Table 3 shows the correlation coefficients between the performance and the psychological factors. It indicates that a positive significant correlation exists between the performance and the psychological factors.

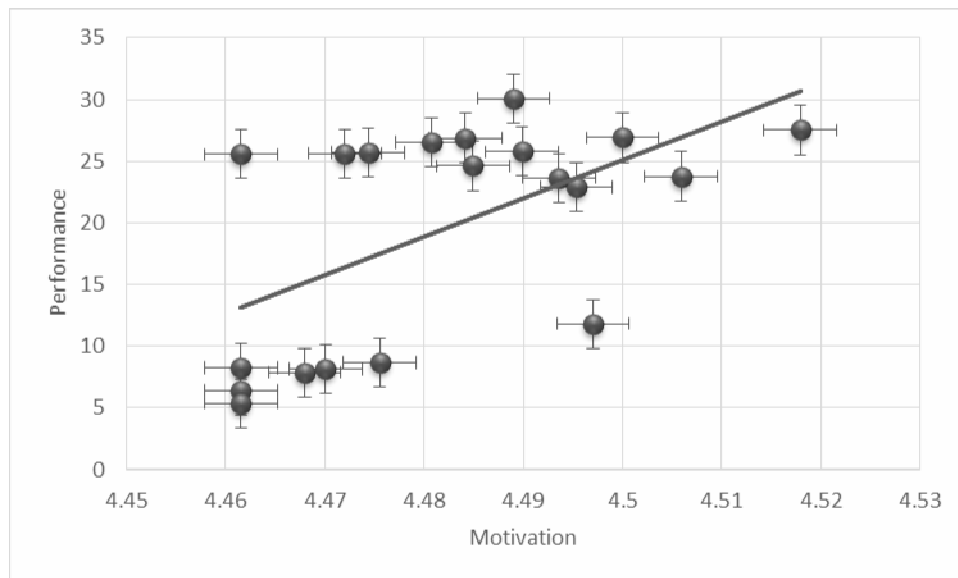


Fig.1. Relationship between performance and motivation.

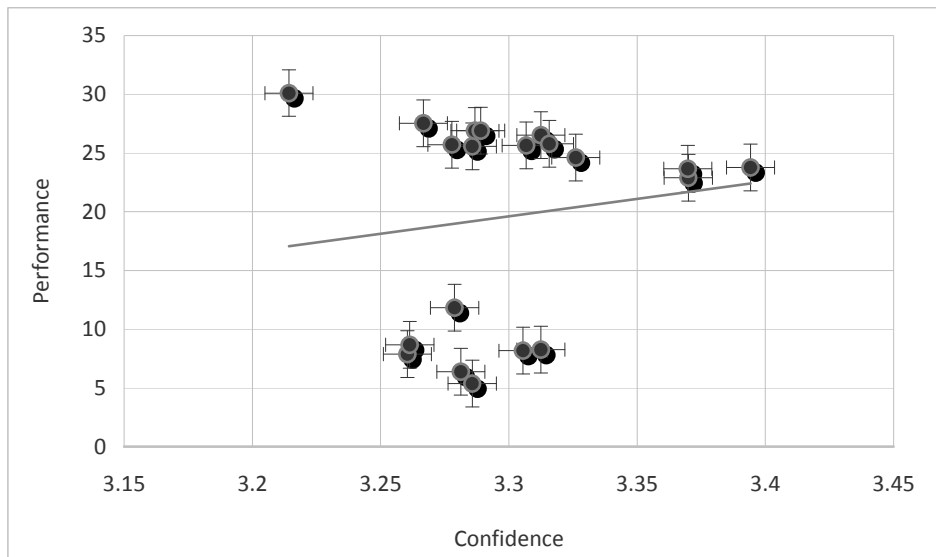


Fig. 2. Relationship between performance and confidence.

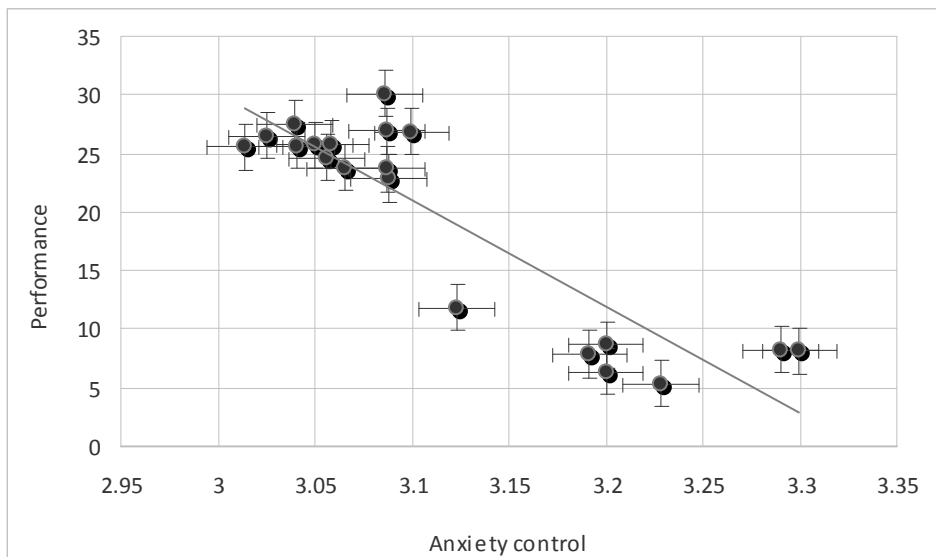


Fig. 3. Relationship between performance and Anxiety control.

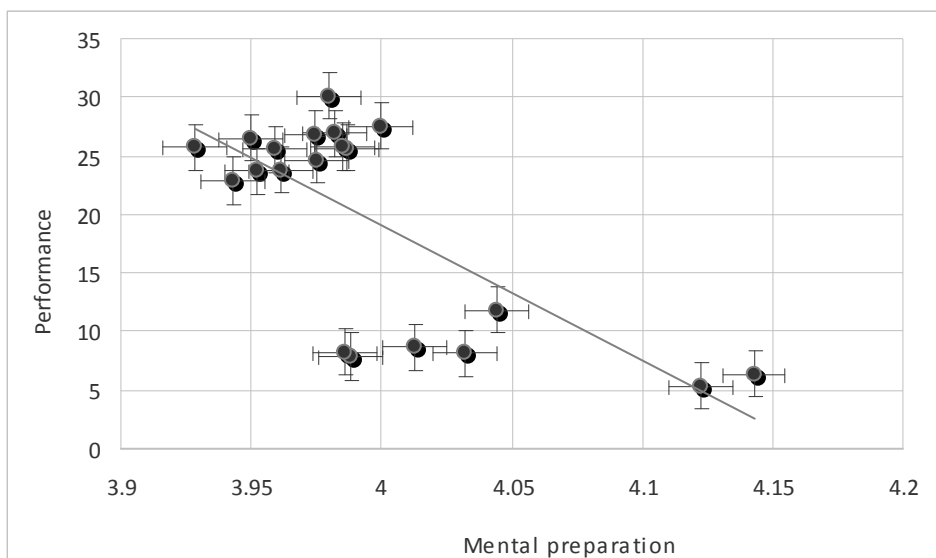


Fig. 4. Relationship between performance and mental preparation.

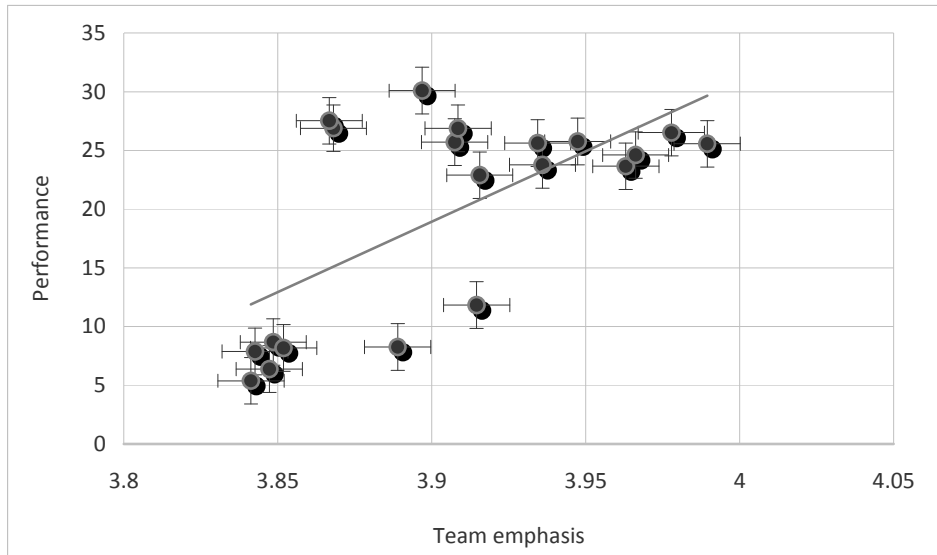


Fig. 5. Relationship between performance and team emphasis.

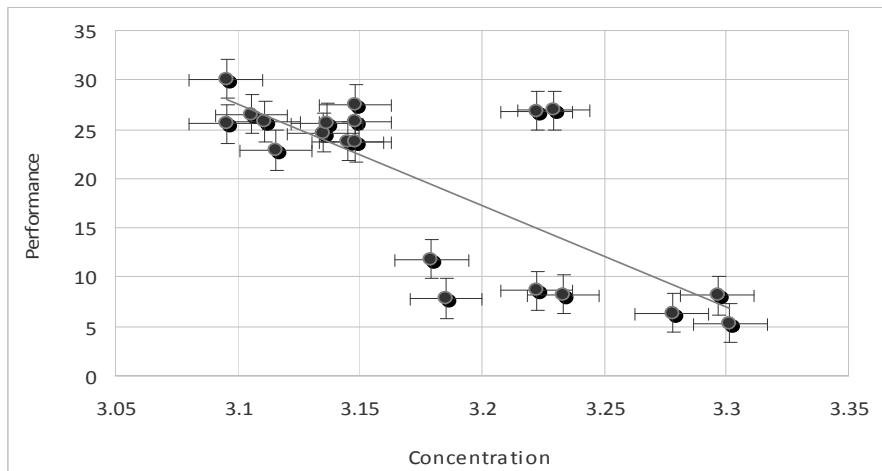


Fig. 6. Relationship between performance and concentration.

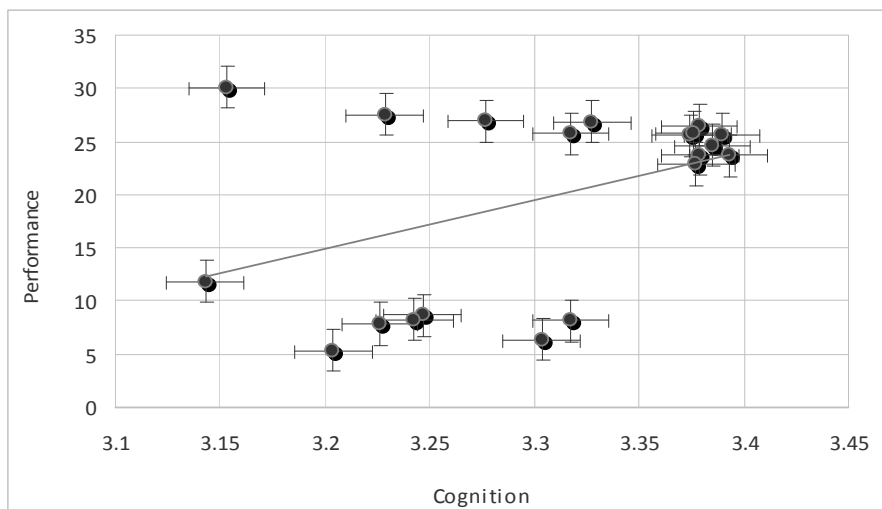


Fig. 7. Relationship between performance and cognition.

Figure 1 to 7 shows the error bars for the relationship between each of the psychological constructs and the performance. The figures indicate that each of the psychological factors has a positive linear relationship with the performance.

Discussion

The present study investigates the roles of psychological factors on the performance of elite's soccer players. Psychological Skills Inventory for Sport or PSIS-R-5 questionnaire containing 7 psychological constructs namely motivation, confidence, anxiety control, mental preparation, team emphasis, concentration,

and cognition was administered to the players of one of the club competing in the Malaysian Super league prior to their matches, and the scores of each player were recorded. The performance of each player was analyzed based on parameters relevant to the demand for the game for the period of eight weeks using Statwatch application. Multiple Regression analysis was conducted to find out the association between the variables as suggested by Aiken and West (1991) as the appropriate Statistical technique when trying to measure the association between variables in naturalistic studies. We assess the predicting ability of performance to the psychological factors through entering method with performance as a dependent variable to predict psychological factors as independent variables.

Identifying the role of psychological factors in the performance of elite soccer players will go a long way to helping the coach to strategically know and apply the appropriate psychological needs to a particular player to enable him to achieve his top performance. Nieuwenhuis et al. (2002) reported that psychological factors play an increasing role in the contemporary game of soccer by influencing the level of performance. He further stated that coaches through the knowledge of the contribution of psychological constructs in the game of soccer can identify the weaknesses in the psychological build-up of a player which can help him provide the basic counseling necessary for the player to achieve his maximum performance. However, previous studies sought to project psychological factors in conjunction with the optimum level of athletic success were carried out in the 1950s and substantial research on the personality features of soccer players was reported from the 1950s to 1970s (Swann, Moran & Piggott 2015). Nonetheless, this available body of knowledge is not said to be conclusive as it does not take into account the actual role plays by the psychological variables in the performance of soccer players.

A study conducted by deFreites and Fonseca (2013) revealed that psychological factors such as confidence, anxiety control, mental preparation and cognition among others are related to the performance success of elite soccer players. Similarly, Baker and Abernethy (2003) reported that soccer players despite their differences in personality traits could maintain stable performance when psychological factors that influence their performances are identified and subsequently applied, for example, Alan Shearer and Paul Gascoigne are totally two different individuals, but both were remarkably successful players. Moreover, a number of research have indicated that performance of elite soccer players depends on many factors such as physical fitness, anthropometric and psychological factors among others (Nazarudin, et al. 2014) while physical fitness is the necessary aid to the metabolic demand in performance to provide the essential energy to perform, anthropometric is the physique an individual player possesses which makes him able to adapt well to his playing position. Psychological skills, on the other hand, tend to help player retain expertise and focus on the maintenance of the possessed expertise, psychological factors moderate the ability of a player to regularly showcase world-class performance (Kreiner, Philips and Orlick, 1992; Jackson, Mayocchi and Dover 1998).

The main finding of this study shows that psychological factors play a role in improving the level of performance of elite soccer players. However, despite the significant role of psychological factors in the successful performance of soccer game, psychological factors alone cannot determine performance in the game. Rosch, Hodson, & Peterson (2000), reported that through the years soccer has formed into a more complex game in which ideal performance relies on upon the cooperation of five factors: specifically technical skills, tactical strategies, physiological component, psychological factors and team factors (e.g., group elements and cohesion). Numerous coaches, on the other hand, concentrate only on the initial three measurements of the game said above. This reduces the influence of the evidence and the literature accounts indicating the significance of psychological factors in achieving successful performance in a soccer game. Nevertheless, many coaches and athletes most a times blame the unsuccessful performance on psychological factors with explanations, such as, "I wasn't sufficiently hungry" (accomplishment inspiration); "She didn't center" (focus); "They gagged under pressure" (enactment control). The findings of the current study have in indicated the relationship of psychological factors to the successful performance of soccer game.

Junge and Dvorak (2000) stressed that mapping out definite psychological factors that affect soccer performance provides a vital information concerning proper preparation for training and competition. Scientists have offered consideration regarding the psychological features of extraordinary athletes and tremendous progress in the comprehension of this field. Krane and Williams (2006) inferred that various psychological and behavioral abilities such as goal setting, vision, anxiety control and mental preparation are related to successful performance. They further proposed that athletes can ace these skills and systems through psychological abilities, training, and steady practice. As psychological abilities are formed and sustained by practice, the reward for such practice accumulates throughout the years.

Conclusions

The applications of psychological strategies to improve the performance of elite soccer players have long been recognized. Soccer coaches around the globe have been in one way or another using psychological strategies to improve the performance of their players both during matches and training. The major finding of this study reveals that there is a strong relationship between psychological factors and performance of elite soccer players, although, the study also discovers that psychological factors alone could not determine performance in a soccer game, we did not close door for academic debate in this vast area, it is our

recommendation that further research should be carried out to investigate the effects of psychological factors with particular reference to level of participation and gender differences in the game of soccer.

Conflicts of interest - the authors have no conflicts of interests to declare.

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