

Research article

## Team Cohesion Profiles: Influence on the Development of Mental Skills and Stress Management

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### Abstract

High-level sports competitions involve facing highly challenging situations. Athletes must maintain strong team cohesion with peers, have specific mental abilities, and high-stress control to overcome adversity and report high sports performance. This research aimed to identify team cohesion profiles and examine whether participants differed significantly in their mental abilities and stress management. The sample consisted of 146 promising and talented athletes from the Sports Talent Development of the Provincial Council of Guipúzcoa (Spain) ( $Mage = 20.08$ ;  $SD = 4.68$ ), who completed the questionnaire on Psychological Characteristics Related to Sports Performance (CPRD). Cluster analyzes revealed three profiles; (a) profile with low team cohesion; (b) profile with average team cohesion; (c) profile with high team cohesion. Results showed significant differences in mental abilities (i.e., positive self-talk), and marginally significant differences in self-confidence, between the profiles. The best scores were reported in profile (b). In conclusion, the combination of low individualism, high social cohesion, and medium team spirit seems to be the most recommendable for promoting mental abilities and self-confidence in athletes' samples. As practical implications, the programs that train the mental abilities of athletes and control management should consider the importance of team cohesion to obtain improvements in the results of the competitions.

**Key words:** Mental ability, group analysis, sport, team.

### Introduction

The fundamental objective of competitive sports is that athletes perform to the maximum of their possibilities to achieve outstanding success when competing with other athletes or sports teams (Fernando and Pérez-Llantada, 2007). However, the stressful situations that must be faced during sports competitions can imply an alteration in the psychological functioning of athletes, which hinders their probability of success. As a result, athletes may experience a loss of attentional focus, and increased stress, among others (Brown and Fletcher, 2016; Guerrero et al., 2017). Regarding these problems, teams with high team cohesion, manage to respond as a closed unit to the adversities of competition, which is why they usually obtain favorable sporting results (Palmi, 1994). In addition to team cohesion, other variables facilitate sporting success: mental abilities and stress management (Meyers et al., 1979). Considering the aforementioned implications of team cohesion, mental abilities, and stress management on success in competitive sports, it is interesting to investigate these variables to maximize athletes' achievements simultaneously.

Previous literature has examined team cohesion within sports field (Iturbide et al., 2010; Pescosolido and Saavedra, 2012; Sezer and Kocaeksi, 2018). Team cohesion is the tendency of a group not to separate and to remain together in pursuit of goals and objectives and in satisfying the affective needs of its members (Carron et al., 1998). According to Gimeno et al. (2001) team cohesion is divided into: individualism vs collectivism, social cohesion and team spirit. To assess team cohesion, most sport-related literature in the Spanish language has adopted Gimeno et al.'s measure (2001). Individualism implies that the person prefers to work individually, and he/she believes that the team success depends exclusively on its performance (Hofstede, 1980). Thus, those high in individualism can be highly motivated by competition, individual rewards, and recognition (Hadjiyankova and Iancheva, 2021). Moreover, individualistic athletes often work and invest efforts to achieve individual goals. Oppositely, athletes who tend to be collectivist prefer working in a group (Tan et al., 1998), and present goals aligned with teammates (Triandis and Gelfand, 1998; Yamaguchi 1994). Social cohesion refers to the extent that the team is consolidated in social life (Eys and Brawley, 2018). In the same way, Richardson (2013) added that social cohesion is the degree to which team members create a conciliatory environment to interact, and perceive liking towards their teammates. Therefore, teams with social cohesion will improve together regardless of sporting results (Erikstad et al., 2018; Silveira and Oliveira, 2017). Finally, team spirit is the feeling of respect and shared responsibility for the successes and failures of the team, and the belief in the group's ideology (Salas et al., 2015).

Previous studies examined the relationship between team cohesion and mental abilities (Gu and Xue, 2022; Villegas, 2019). Within the sports field, Loehr (1986) described mental abilities as psychological skills that allow staying focused on tasks and maintaining confidence to face challenges. Mental abilities are proposed to include: practice in imagination, goal setting, positive self-talk, objective analysis of own performance and tension control (Gimeno et al., 2001; Heydari et al., 2018; Jeon et al., 2021; Lago, 2008; Riera et al., 2017). Practice in imagination involves predicting what will happen in the competition and mentally rehearsing what to do to correct mistakes (Martin, 1999; Riera et al., 2017). Goal setting directs people to focus their efforts on actions related to their goals and ignore irrelevant activities (Jeon et al., 2021). In addition, goal setting energizes people toward the most difficult and effort-

intensive goals. Positive self-talk is the internal conversation that a person can do aloud or silently (before, during, or after the competition) and through which the person strengthens him/herself (Calvete and Cardeñoso, 2002). The objective analysis of own performance means that each person must identify strengths and weaknesses that may affect performance in competition (Lago, 2008). Tension control means that an athlete perceives that he/she is ready or able to face a competition (Lawther, 1998).

Although there seems not to be much sports literature that relates each dimension of team cohesion with mental abilities, in the work of Fitzgerald (2019), it is stated that cohesive teams are constantly looking for a competitive advantage. As such, it implies the display of mental abilities to achieve success, such as the practice of imagination. On the other hand, team cohesion encourages athletes to fight for common goals (Miçoogullari, 2013), which could be related to goal setting, and favor positive self-talk (Cardeñoso et al., 2007; Villa, 2005). More specifically, referring to the sub-dimensions that constitute team cohesion, it is known that the objective analysis of own performance allows each person to reflect to identify strengths that can be maximized, and weaknesses that can be improved. Individualistic athletes believe the team's success depends exclusively on its performance (Hofstede, 1980). Thus, they could spend more time reflecting on their performance in the competition (against collectivists who believe in the importance of the group). Regarding tension control, it is known that individualism is less effective than collectivism in regulating this variable within the competitive field (Csikszentmihalyi et al., 1993). On the other hand, social cohesion and team spirit positively help to tension control (Csikszentmihalyi et al., 1993).

Previous works revealed a connection between team cohesion and stress (Driskell et al., 2015), self-confidence (Chicau et al., 2012; Prapavessis and Carron, 1996), and attention (Salas et al., 2015); variables influencing athletes' stress management abilities. Stress can be described as a state of physical and psychological activation in response to external demands that exceed one's ability to cope and requires a person to adapt or change behavior (Dos Santos et al., 2020). Self-confidence is the belief that athletes have about their ability to be successful in sport (Vealey, 1986; Vealey and Chase, 2008). Attention refers to an individual's effort to mentally focus on a stimulus and eliminate distracting sources (Hill et al., 2019). Some studies have identified some beneficial outcomes for athlete stress on sport physical achievement (Galli and Reel, 2012; Howells et al., 2015). This happens because every athlete has a certain stress level that is needed to optimize his or her game (Bali, 2015), and because stress prepares the body with greater motivation and enthusiasm to face the sporting demands (Ferreira et al., 2002). However, other research has shown negative consequences of stress on performance (Olmedilla et al., 2021). Regarding self-confidence, some studies reveal significant benefits of this variable in the sports performance of athletes (Draper et al., 2011; Hassmén et al., 2004; Terry and Slade, 1995) and others do not indicate any benefit (Bejek and Hagtvet, 1996; McAuley, 1985; Jerome and Williams, 2000). Finally, attention allows changing the attentional focus to the

different tasks that must be carried out during the competitions (García et al., 2011). Because of this, attention is often associated with high athletic performance.

Regarding the action of team cohesion on stress, self-confidence, and attention, it is known that individuals does not offer the possibility of cooperating to face tasks where low efficacy and stress are perceived. Collectivist athletes cooperate and merge with the group during competitions (Hadjiyankova and Iancheva, 2021). Therefore, they will be able to overcome situations perceived as stressful to a better extent than individualistic athletes. On the other hand, subjects with low social cohesion tend to perceive unpleasantness when being with other people (Richardson, 2013) and are related to low self-confidence. Finally, some researchers consider that sharing the group's team spirit improves the psychological state of athletes and decreases their perceptions of stress (Prapavessis and Carron, 1996).

The aim of this study is to assess the reported mental abilities and stress management (stress, self-confidence and attention) across different team cohesion profiles. The findings of which may influence training programs that focus on the team cohesion of athletes. In relation to previous studies that found differences in team cohesion and mental abilities (Cardeñoso et al., 2007; Csikszentmihalyi et al., 1993; Villa, 2005) and skills that influence stress management (Prapavessis and Carron, 1996), the established hypotheses were: (a) Participants who perceive high team cohesion will report higher scores in mental abilities and stress management; (b) Participants who perceived low team cohesion will report lower scores in the mental abilities and stress management.

## Methods

### Design

The study followed a cross-sectional non-probabilistic design in which researchers tried to collect participants that trained in the "Development for talent in sports program of the Provincial Council of Guipúzcoa" in the season 2017/2018. The inclusion criteria of the sample were: be a promising athlete and meet the criteria specified in the call. These inclusion criteria were added to ensure that athletes that participated in the study were competitors and they were training in groups.

### Participants

The sample was made up of 146 promising and talented athletes from the Development for talent in sports program of the Provincial Council of Guipúzcoa ( $Mage = 20.08$ ;  $SD = 4.68$ ). Particularly, 71 were women ( $Mage = 21.09$ ;  $SD = 4.70$ ), 48.6% and 76 were men ( $Mage = 21.02$ ;  $SD = 4.73$ ), 51.4%, aged between 12 and 20 years old. From the total sample, 124 were designated promising athletes, and 22 talented athletes. The modalities included in the sample were: athletics (16.9%), canoeing (10.1%), cycling (10.1%), rowing (8.8%), hockey (5.4%), handball (5.4%), climbing (4.7%), surfing (2.7%), badminton (2.7%), table tennis (2%), others (33.9%). Among women, the sport most practiced was athletics (11.26%), canoeing (9.85%) and rowing (9.85%). Among men, the most practiced

sports were canoeing (10.52%), rowing (6.57%) and athletics (6.57%).

### Instruments

To examine the psychological characteristics related to performance in sport, the "Psychological Characteristics Related to Sports Performance" (CPRD) questionnaire in the Spanish version was used (Gimeno et al., 2001). This questionnaire assesses the psychological aptitudes for sports performance and this is the most widely used instrument in Spain for assessing the psychological abilities related to performance. The questionnaire is made up of 55 items in a Likert-type response format with five points. The CPRD is made up of five scales: a) Stress management (CE), which covers the characteristics of the athlete's response concerning the demands of training and competition (e.g., concentration) and potentially stressful situations that can cause stress and where the presence of control is necessary; b) Influence of Performance Evaluation (IER), which covers the characteristics of the athlete's response to situations in which he or others evaluate his/her performance (e.g., losing concentration); c) Motivation (M), which refers to the motivation to improve day by day, the establishment of goals and the importance of sport about other activities; d) Mental Skill (HM), which includes psychological skills that favor sports performance (e.g., goal setting); and e) Team Cohesion (CEQ), which considers the integration of the athlete in his/her team or sports group. The CPRD has reported good psychometric properties of reliability and validity in several studies, as shown by the compilation of Gimeno and Pérez-Llantada (2010) and other specific reviews (Gimeno and Pérez-Llantada, 2010; López-López et al., 2013). Regarding the reliability of the subscales used in this study, the following Cronbach alphas and the Joreskog  $\rho$  coefficient were reported: team cohesion ( $\alpha = 0.72$ ;  $\omega = 0.76$ ), mental abilities ( $\alpha = 0.70$ ;  $\omega = 0.89$ ), and stress management ( $\alpha = 0.91$ ;  $\omega = 0.90$ ). Moreover, the CPRD factors may be divided into little subfactors to provide further knowledge of each variable (Gimeno and Pérez-Llantada, 2010; López-López et al., 2013). In this study, team cohesion was subdivided into: Individualism vs collectivism (2 items;  $r = 0.27$ ), social cohesion (2 items;  $r = 0.36$ ) and team spirit (2 items;  $r = 0.73$ ). Mental abilities were subdivided into: practice in imagination (4 items;  $r = 0.26$ ), goal setting (3 items;  $r = 0.24$ ), positive self-talk (1 item), objective analysis of own performance (1 item), skill deficit (1 item;  $r = 0.29$ ), tension control (1 item) and others (4 items;  $r = 0.30$ ). In addition, stress (5 items;  $\alpha = 0.71$ ), attention (5 items;  $\alpha = 0.77$ ) and self-confidence (10 items;  $\alpha = 0.90$ ) were assessed. As Cronbach alpha increases with the number of items of the scale (Clark and Watson, 1995), the average inter-item correlation was taken in the subscales in which there were factors with few items. Particularly, some scholars have shown the reliability of the average mean inter-item correlation as an internal consistency marker (Clark and Watson, 1995). Finally, all Cronbach alphas and the Joreskog  $\rho$  coefficient were suitable and the as they ranged higher than 0.70 as well as the inter-item correlation as they ranged higher than 0.15.

### Procedure

The study complied with the ethical guidelines established

by the American Association of Psychology in its seventh edition (APA 7) (American Psychological Association, 2020), the anonymity was preserved, and the research followed the principles of the Declaration of Helsinki 2013. The research was carried out and approved by the Development for talent in the sports program of the Provincial Council of Guipúzcoa. As a participation requirement, the government should consider athletes as promising or sports talent. This criterion was required to ensure the participants had a certain degree of performance to meet the study purposes. First, psychology practitioners contacted the parents of the athletes. Then, the parents of the interested participants completed informed consent and voluntarily agreed to participate in this program. In the consent, it was stated the type of questionnaires, conditions, information and purposes of the study. This resulted in a total of 124 promising athletes and 22 sports talents. Once the appointment was concluded, the CPRD questionnaire was carried out online through Google forms platform by the practitioners of the Development for talent in the sports program. The approximate time to carry out the questionnaire was 15 minutes, all the questions were mandatory and for this purpose, some keys and a web page were enabled for the athletes to complete the survey. There was no IP control in fulfilling the questionnaire and there were no funds for completing the survey.

### Data analysis

The analyses were performed using SPSS version 20 software. First, the data were filtered for multivariate outliers, data screening and multicollinearity of scales. Second, to increase confidence in the stability of the cluster solution, a two-step approach was performed that included both hierarchical and non-hierarchical cluster analyzes using standardized CPRD scores (Gimeno et al., 2001). In particular, hierarchical group analysis was performed to identify the number of groups (team cohesion) (Ward's method of linking with the squared Euclidean distance). Then, a group analysis of k means was performed, using the most appropriate group solution identified in step one. Third, group analysis was performed on this variable to examine the differences between the groups in team cohesion. A multivariate analysis of variance (MANOVA) was carried out with the outcome variables of the team cohesion profiles entered as dependent variables. The partial eta squared ( $\eta^2$ ) was evaluated to provide an effect size index. Finally, a MANOVA was performed with quantitative demographic variables to explore the possible confusion of demographic groups. In addition, a series of chi-square tests were carried out with demographic variables such as gender and age.

### Results

#### Team cohesion perceived by athletes

A MANOVA analysis was performed to detect significant multivariate effects between the groups in the dimensions of team cohesion perceived by the athletes (Wilk's Lambda = 0.18,  $F(6) = 63.76$ ,  $p < 0.001$ ,  $\eta^2 = 0.57$ ). Subsequently, the ANOVAs indicated significant differences ( $p < 0.001$ ) in all dimensions of perceived team cohesion, which provides evidence of the sustainability of the cluster solution (Table 1).

**Table 1.** Perceived team cohesion scores among athletes.

|                                      | Participants with low team cohesion (n = 5) | Participants with average team cohesion (n = 26) | Participants with high team cohesion (n = 115) | F      | P     | Eta <sup>2</sup> |
|--------------------------------------|---|--|--|--------|-------|------------------|
|                                      | M (SD)                                      | M (SD)   | M (SD)   |        |       |                  |
| <b>Individualism vs collectivism</b> | 3.20 (2.16)                                 | 1.08 (1.29)                                      | 5.33 (1.70)                                    | 71.55  | 0.00* | 0.70             |
| <b>Social cohesion</b>               | 1.60 (2.19)                                 | 6.58 (1.72)                                      | 7.59 (.84)                                     | 75.23  | 0.00* | 0.71             |
| <b>Team spirit</b>                   | 3.00 (3.31)                                 | 3.69 (2.65)                                      | 7.65 (.70)                                     | 105.52 | 0.00* | 0.72             |

\* p < .001

The different scores in individualism vs collectivism, social cohesion and team spirit are detailed in Figure 1. The descriptive labels for these groups are: (a) low team cohesion; which includes athletes with average scores in individualism vs collectivism, low scores in social cohesion, and average scores in team spirit; (b) average team cohesion; which includes athletes with low scores in individualism vs collectivism, high scores in social cohesion, and average scores in team spirit; (c) high team cohesion; which includes athletes with high scores in individualism vs collectivism, social cohesion, and team spirit.

**Differences between cluster groups in perceived team cohesion and mental abilities**

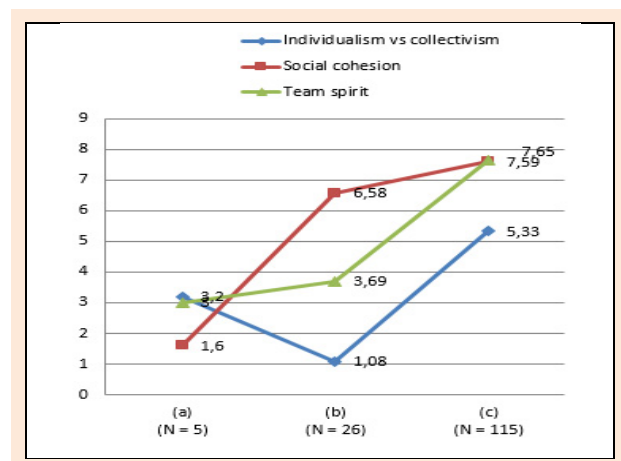
The differences between the cluster groups in team cohesion and mental abilities (Wilk's Lambda = 0.87, F (14) = 1.30, p < 0.001, η<sup>2</sup> = .20) revealed that there are significant differences (p < 0.05) between the groups in the results of this variables. In Table 2, the ANOVA results show that the participants of profile (b) reported higher scores in positive self-talk than those of the profiles (a) and (c).

**Differences between cluster groups in team cohesion and stress management**

The differences between the cluster groups in team cohesion and stress management (Wilk's Lambda = 0.78, F (6) = 1.82, p < 0.001, η<sup>2</sup> = 0.93) revealed that there are marginal differences (p < .07) between the groups in the results of this variables. In Table 3, the ANOVA results show that the participants of profile (b) reported higher scores in stress control than those of the profiles (a) and (c).

**Covariation between cluster groups and sociodemographic variables**

The results of the chi-square tests did not show significant differences (p > 0.05) between gender (χ<sup>2</sup> (2) = 3.58). In particular, the highest number of women was included in profile (c) high team cohesion. On the other hand, men mostly belonged to profile (c) high team cohesion. Furthermore, no significant differences were found in the age of the participants (p > 0.05; χ<sup>2</sup> (16) = 21.12). In particular, the participants with the best scores in team cohesion and team spirit were associated with the profile (c) high team cohesion and with a mean age of 26 years old. However, the worst scores in team cohesion and team spirit were associated with the participants of the profile (a) low team cohesion, with a mean age of 23 years old.



**Figure 1.** Clusters team cohesion scores.

**Table 2.** Scores of mental abilities developed by athletes.

|  | Participants with low team cohesion (n = 5) | Participants with average team cohesion (n = 26) | Participants with high scores in team cohesion (n = 115) | F    | P            | Eta <sup>2</sup> |
|--|---|--|--|------|--------------|------------------|
|  | M (SD)                                      | M (SD)   | M (SD)   |      |              |                  |
| <b>Practice in imagination</b>               | 10.00 (0.70)                                | 11.54 (2.19)                                     | 10.81 (2.16)   | 1.69 | 0.18         | 0.15             |
| <b>Goal setting</b>                          | 9.20 (2.95)                                 | 8.38 (1.92)                                      | 8.67 (1.90)  | .44  | 0.64         | 0.07             |
| <b>Positive self-talk</b>                    | 2.20 (1.64)                                 | 3.42 (0.85)                                      | 3.27 (0.94)  | 3.48 | <b>0.03*</b> | 0.21             |
| <b>Objective analysis of own performance</b> | 3.00 (0.70)                                 | 2.96 (0.99)                                      | 3.03 (1.00)  | .04  | 0.95         | 0.02             |
| <b>Skill deficit</b>                         | 7.00 (1.73)                                 | 8.58 (2.30)                                      | 8.24 (2.46)  | .90  | 0.40         | 0.11             |
| <b>Tension control</b>                       | 1.80 (0.83)                                 | 2.77 (0.86)                                      | 2.74 (0.99)  | 2.34 | 0.10         | 0.17             |
| <b>Others</b>                                | 10.40 (2.30)                                | 11.96 (2.01)                                     | 11.96 (2.68)   | .88  | 0.41         | 0.11             |

**Table 3.** Stress scores experienced by athletes.

|                        | Participants with low team cohesion (n = 5) | Participants with average team cohesion (n = 26) | Participants with high team cohesion (n = 115) | F    | P            | Eta <sup>2</sup> |
|------------------------|---|--|--|------|--------------|------------------|
|                        | M (SD)                                      | M (SD)   | M (SD)   |      |              |                  |
| <b>Stress</b>          | 11.00 (.70)                                 | 13.92 (3.50)                                     | 13.43 (3.60)                                   | 1.43 | 0.24         | 0.39             |
| <b>Self-confidence</b> | 20.60 (8.20)                                | 29.62 (6.94)                                     | 27.28 (8.35)                                   | 2.70 | <b>0.07+</b> | 0.19             |
| <b>Attention</b>       | 12.80 (4.43)                                | 14.69 (3.23)                                     | 25.50 (3.55)                                   | 1.82 | 0.16         | 0.15             |

+ p < 0.07 (marginally significant)



## Discussion

This research aimed to identify team cohesion profiles and examine whether participants differed significantly in their mental abilities and stress management. The results of the study have managed to increase the knowledge available in the scientific literature on the subject of team cohesion and their action on mental abilities and stress management but through the methodology of profiles. Within the sample of this project, three team cohesion profiles were identified: (a) characterized by low scores in team cohesion; which includes athletes with average scores in individualism vs collectivism, low scores in social cohesion, and average scores in team spirit; (b) average team cohesion; which includes athletes with low scores in individualism vs collectivism, high scores in social cohesion, and average scores in team spirit; (c) high team cohesion; which includes athletes with high scores in individualism vs collectivism, social cohesion, and team spirit.

Firstly, participants from profile (a) [low scores in team cohesion] are defined by athletes who have an intermediate interest in cooperating with other group members (Hofstede, 1980), and their goals partially coincide with those of their peers. On the other hand, these athletes do not perceive liking towards their teammates (Richardson, 2013), and partially share the group ideology and their responsibilities within the team (Filho et al., 2014). Regarding participants from profile (b) [average team cohesion], this profile is defined by athletes who prefer to work in a group (Tan et al., 1998) and share goals with team members (Triandis and Gelfand, 1998). These participants perceive a conciliatory environment with their peers and enjoy sharing time with them (Richardson, 2013). However, these athletes do not fully share the ideology of their competition group (Richardson, 2013). Finally, the athletes of the profile (c) [high team cohesion] are defined by participants who prefer to work individually, understand successes as a result of their individual performance (Hofstede, 1980) and do not share goals with their peers (Stone-Romero and Stone, 2002; Yamaguchi 1994). However, these participants perceive enjoyment in sharing experiences with their peers (Triandis and Gelfand, 1998) and they fully agree with the group's philosophy (Richardson, 2013).

Secondly, results revealed that athletes from profile (b) reported higher positive self-talk than profiles (a) and (c). It is widely recognized that people need to perceive affiliation need satisfaction (McClelland, 1987), a requirement that seems to be satisfied in the profile (b) participants with average team cohesion (given his/her low individualism vs collectivism and its high social cohesion). People who do not satisfy this affiliation often present depression and sadness (Baumeister and Leary, 1995). Moreover, these people often use self-talk due to the lack of social relationships (Jonanson et al., 2008), but the self-talk is usually negative (Brinthaup and Dove, 2012). This would explain why, in the profile (b), participants with average team cohesion revealed higher levels of self-talk. However, due to a scarcity of previous research that has unravelled this relationship, it seems that maybe there is another variable that may influence this results (Santos-Rosa et al., 2022).

Perhaps, there is another contextual, personal or situational variable that may modify the self-talk of this group and which is not been measured. As such, it would be interesting to further explain this connection in future research, and to examine if profiles behave in the same way of the current study. Nevertheless, the results indicate that the profile with average scores in team cohesion maybe more adapted in terms of creating positive self-talk in athletes which may advert to comprehend team cohesion from a multivariate approach rather than from a bivariate one. This means that the combination of profiles is precise in detecting those dysfunctional variables.

On the other hand, in this research found marginally significant differences in self-confidence across profiles. Particularly, participants in profile (b) reported the highest scores in this variable (these athletes strongly believe in their chances of sporting success) (Vealey, 1986; Vealey and Chase, 2008). The aforementioned profile (b) is defined by participants with a quite high social cohesion. Previously, it was found that athletes with low social cohesion tend to perceive unpleasantness when being with other people (Richardson, 2013). Furthermore, in the research of Chicau et al. (2012) group cohesion was related to good self-confidence scores. However, this would lead to think that those in profile (c) should have more self-confidence than those in profile (b), because profile (c) reported higher levels of social cohesion. Despite this, it cannot be ignored that those in profile (c) recorded the highest scores in individualism (athletes are highly motivated by competition, individual rewards, and recognition) (Hadjiyankova and Iancheva, 2021). Therefore, athletes do not believe in the support of the group to achieve certain objectives, which could lead them to sporting failures and loss of confidence in themselves.

A limitation of the cluster analysis methodology is that it is based on data collected from self-report measures. In addition, in this research only the point of view of the athletes has been considered. On the other hand, the few sample obtained in this study was due to the difficulty to find athletes in training settings because of their strict routines of training and competition. Therefore, it is suggested that future research attempts to replicate the current study with other objective points of view that could incorporate information from parents of athletes or coaches. In addition, it would be advisable to include athletes from other cultures to check if the results are generalizable to them. Moreover, it was a limitation to do not measure the influence of peer or other contextual variables in mental skills which maybe influencing in the development of athletes' mental skills. Despite the detailed limitations, this work has proposed an approach focused on the perception of athletes that can be useful to examine the dimensions that influence the team cohesion. In addition, this work allows to know how the combination of team cohesion variables could be related to mental abilities and stress management, which is essential to maximize the performance of athletes.

As future lines of research, the study could include the variables of satisfaction of basic psychological needs and mental toughness perceived by Spanish athletes. A priori, the satisfaction of basic psychological needs should

have a positive impact on team cohesion, as found in Brazilian culture (Andrade et al., 2019). Also, strong team cohesion should have a positive effect on the mental toughness of athletes, as found by Gu and Xue (2022) in Chinese culture.

As practical implications, this work has made it possible to verify the coexistence of different variables of the team cohesion construct in Spanish athletes and see how they are related with reported mental abilities and self-confidence during competitions. Therefore, these athletes will be able to find an explanation for the psychological perceptions they experience during sports-competitive practice and be aware of the importance of team cohesion. Taking into account that team cohesion is modifiable, programs that train sports competences to achieve high performance in competitions must pay attention to individualism/collectivism, social cohesion, and team spirit to enhance the mental abilities and confidence in athletes, that are associated with increased chances of success. This will be achieved as long as athletes are helped to replace their preferences for individual work with the collective, bonds between teammates are strengthened, and athletes are fought to believe firmly in a spirit of group.

## Conclusion

In conclusion, the optimal perception of team cohesion could be related with the development of mental abilities such as positive self-talk, and also with self-confidence. The profile of athletes where perceptions of team cohesion based on low scores in individualism, high social cohesion, and average team spirit are combined seems to be the most functional for the development of psychological abilities that favor sports performance. Athletes who perceive low team cohesion should attend programs where competences are trained that allow their participants to learn to enjoy working in groups, understand the importance of peer bonds and fight for a shared vision. Thanks to this, more opportunities will open up for athletes to grow professionally, achieve success and maintain their performance in the long term.

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### Key points

- High-level sports competitions involve facing challenging situations in which it is essential for athletes to feel cohesion with other team members to maintain high performance.
- Identifying functional and dysfunctional profiles of team cohesion can help athletes find an explanation for their mental abilities during competitions.
- Programs that train athletes must strive to ensure that athletes maintain a good group spirit, are not individualistic, and maintain strong bonds with their teammates since their ability to control stress in the face of adversity depends on it.

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