ANALYSIS OF THE GROUP PROCESS AND THE PERFORMANCE IN SEMIPROFESSIONAL SOCCER

ANÁLISIS DE LOS PROCESOS GRUPALES Y EL RENDIMIENTO EN FÚTBOL SEMIPROFESIONAL

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ABSTRACT

The main aim of the study was to test a theoretical model examining two of the antecedents of the collective efficacy, motivational climate and group cohesion, as well as performance as their principal consequence. Participants were 203 footballers who played in the XIV group of National League in Third Division and filled several instruments to assess motivational climate, cohesion and collective efficacy. The theoretical model showed that mastery climate predicted group cohesion. Furthermore, task cohesion emerged as the strongest predictor of collective efficacy, and this variable predicted performance. The main conclusion is that to optimize perception of collective efficacy and so, increase performance, it seems important that coaches promote strategies to enhance task related motivational climate and group cohesion in players.

KEYWORDS: Motivational climate, cohesion, collective efficacy, performance, soccer.
RESUMEN

El principal objetivo del estudio es aplicar un modelo teórico analizando dos de los antecedentes de la eficacia colectiva, el clima motivacional y la cohesión grupal, y su principal consecuencia como es el rendimiento. Los participantes fueron 203 futbolistas que participaban en el grupo XIV de la Liga Nacional de Tercera División, que rellenaron diversos instrumentos para valorar el clima motivacional, la cohesión y la eficacia colectiva. Los resultados obtenidos señalan que el modelo teórico que se aplica confirma que el clima que implica a la tarea predice la cohesión grupal. Además, la cohesión tarea se manifiesta como el principal predictor de la eficacia colectiva, y ésta a su vez del rendimiento. La principal conclusión es que para optimizar la percepción de eficacia colectiva y con ello, la mejora del rendimiento, parece fundamental que los entrenadores planteen estrategias para fomentar los aspectos tarea del clima motivacional y la cohesión grupal en los jugadores.

PALABRAS CLAVE: Clima motivacional, cohesión, eficacia colectiva, rendimiento, fútbol.

INTRODUCTION

The main aim of the high performance sport is to achieve the optimization of athletes and teams’ resources to reach the best performance. In the last years, several studies have researched about the factors that lead to achieve that excellence in the sport. Thus, most of the sports have focused the attention on different fields such as physiology, biomechanics, and psychology... with the only purpose to improve performance.

Within the field of the social psychology, studies that have attempted to examine the dynamics within a structure of a sport group have increased. Hence, up to now, researches have focused on variables such as motivation, cohesion or efficacy, due to their narrow relationship with performance (Carron, Colman, Wheeler, and Stevens, 2002; Carron, Brawley, and Widmeyer, 1998; Heuzé, Sarrazin, Masiero, Raimbault, and Thomas, 2006; Myers, Feltz et al., 2004).

According to the investigations related with those topics, it is affirmed that collective efficacy is the construct with the greatest incidence on group performance (Heuzé, Raimbault, and Fontaine, 2006; Myers, Feltz et al., 2004; Myers, Payment, and Feltz, 2004; Watson, Chemers, and Preiser, 2001). In this regard, Bandura (1997) indicated that collective efficacy, defined as "group’s shared beliefs in its capacities to organize and execute actions to produce a desired goal" (p. 476), which is influenced by certain antecedents that make influence relevant in the perception of players. These factors are group size...
(Watson and Chemers, 1998; Watson et al., 2001; Zaccaro, Blair, Peterson, and Zazanis, 1995), leadership (Chen and Bliese, 2002; Jung and Sosik, 2002), previous experiences or group past performance (Lindsley, Brass, and Thomas, 1995), motivational climate (Heuzé, Sarrazin et al., 2006; Leo, Sánchez-Miguel, Sánchez-Oliva; Amado, and García-Calvo, 2012; Magyar, Feltz, and Simpson, 2004) or group cohesion (Spink, 1990; Heuzé, Raimbault et al., 2006; Heuzé, Bosseult, and Thomas, 2007; Paskevich, Brawley, Dorsch, and Widmeyer, 1999). Moreover, these antecedents will create a specific perception of collective efficacy in the team, which will lead to certain cognitive, affective and behavioural consequences, such as the sport performance (Bandura, 1997; Beauchamp, 2007; Feltz and Chase, 1998).

Taking into account that collective efficacy implies the assignation and coordination of the group resources in high integrated tasks that includes the team in itself, a positive motivational climate and a high union level between teammates might possibly be as importance antecedents to reach a high perception of collective efficacy (Heuzé, Sarrazin et al., 2006; Heuzé et al., 2007; Magyar et al., 2004; Spink, 1990).

According to this, group cohesion comes from the first indications by Festinger, Schacter, and Back (1950) who defined cohesion as “the total field of forces which act on members to remain in the group”. Later, Carron et al. (1998) clarified such definition and made a deeper aproachment through their conceptual model. This cohesion model defines the psychological construct as “a dynamic process that is reflected in part by the tendency of a group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of member affective needs” (Carron et al., 1998, p. 214), and they suggested that athletes create a perception of the team unity according several antecedents that influence on the development of the cohesion in the sport domain (environmental, personal, leadership and team factors), and promote certain consequences at individual and collective level such as the increasing of efficacy and performance (Carron et al., 2002; Heuzé, Raimbault et al., 2006).

In addition, this perception of cohesion distinguishes two dimensions that act on group members: task cohesion, which reflects the degree to which group members work together to achieve common goals, and social cohesion, which reflects the degree to which team members empathize with each other and enjoy the companionship of the group (Carron, Widmeyer and Brawley, 1985; Carron et al., 1998). Furthermore, Carron (1982) suggested the idea that each teammate develops a perception about how the team satisfies its needs and personal goals, that is to say, the attraction to the group and another perception related with the team as a unity, that is to say, integration to the group. Therefore, thanks to the perception generated in players, four different manifestations emerge: group integration task, group integration social, individual attraction to the group - task and individual attraction to the group - social.
The most important researches regarding cohesion and collective efficacy have pointed out that players who perceived greater cohesiveness levels within their teams showed higher scores in collective efficacy of the group (Heuzé, Raimbault et al., 2006; Heuzé, Sarrazin et al., 2006). Nevertheless, there is a controversy between those investigators who affirmed that task dimension is the most associated with collective efficacy (Kozub y McDonnell, 2000; Paskevich et al., 1999) and those researches who did not find any distinction between both dimensions (Heuzé, Raimbault et al., 2006; Leo, García-Calvo, Parejo, Sánchez-Miguel, and Sánchez-Oliva, 2010; Spink, 1990).

Despite this fact, there is a great controversy about the directionality in the predictive capacity between both variables. Most of the authors have showed that cohesion is an antecedent of collective efficacy (Kozub and McDonnell, 2000; Leo, Sánchez-Miguel, Sánchez-Oliva, Amado, and García Calvo, 2011; Leo et al., 2010; Paskevich et al., 1999; Spink, 1990), nevertheless, others authors have suggested that cohesion might be an antecedent and consequence of collective efficacy, that is to say, that there are a reciprocal relationship, where individual attraction to the group would be an antecedent of collective efficacy, whereas group integration would be a consequence of collective efficacy (Zaccaro et al., 1995; Heuzé et al., 2007).

Taking into account motivational aspects, it is important to note that type of motivational climate perceived by athletes of their coach is important in the creation of an adequate climate in the group (Jowett and Chaundy, 2004; Weiss and Fretwell, 2005), which might promote the creation of union bonds between teammates and improve perception of collective efficacy within the team (Magyar et al., 2004; Heuzé, Sarrazin et al., 2006). Grounded in Goal Achievement Theory (Nicholls, 1989), the climate players perceive during the sport practice develops situations related with the goal, where the conducts can be valued in terms of improvement and progress through individual goals, defined as task-involving climate, or evaluated regarding criteria normative, referred as ego-involving climate (Duda and Hall, 2001; Roberts, 2001).

In this sense, respecting the works that have researched motivational climate, cohesion and collective efficacy, most of them have showed the existence of a narrow relationship between coach task-involving climate and team cohesion (Chi and Lu, 1995; Heuzé, Sarrazin et al., 2006) and collective efficacy (Heuzé, Sarrazin et al., 2006; Leo et al., 2012; Magyar et al., 2004;). Even more important is the negative association between ego-involving climate respecting both variables (Chi and Lu, 1995; Leo et al., 2011; Leo et al., 2012). Moreover, several studies have shown in their predictive analysis that athletes who perceived a coach task-involving climate showed higher cohesion levels (Balaguer, Duda, and Castillo, 2003; Balaguer, Castillo, Moreno, Garrigues, and Soriano, 2004; Leo et al., 2011) and collective efficacy (Heuzé, Sarrazin et al., 2006; Leo et al., 2012; Magyar et al., 2004;)

Therefore, to maximize efficacy and performance, team internal dynamic can be represented by different theoretical constructs and the way to interrelate them
might mean an approachment to the aim indicated. Thus, the main aim of the
study is to apply a theoretical model analyzing two of the antecedents of the
collective efficacy, motivational climate and cohesion, and its principal
consequence such as performance. In this regard, the hypothesis which leads
this study indicates that the theoretical model will help an approachment about
how group cohesion and motivational climate perform as antecedents of
collective efficacy, and how this variable might predict performance.

METHOD

Participants

Participants were 203 male soccer players ranging in age from 18 to 37 years
(M = 24.71; SD = 3.68). They belonged to semiprofessional teams playing in the
group XIV of the National League of Third Division, having each participant a
federative card with their personal and sports data.

To select participants the intentional selection sampling was used. The delete
sampling percentage was not higher than 6%, with participation rate of 93.5%,
with just 14 invalidate questionnaires over a total amount of 217 questionnaires
collected. All players who were part of study sample completed the
questionnaires at the middle and at the end of the season.

Instruments

Coach Motivational Climate. The Spanish version of Perceived Motivational
Climate in Sport Questionnaire (PMSCQ–2: Newton y Duda, 1993) developed
by Balaguer, Guivernau, Duda, and Crespo (1997) was used to assess coach
motivational climate. We used two higher order dimensions, ego-involving
climate (6 items, ej.: The coach encourages players when they play better than
their peers) and task-involving climate (6 items, ej.: The coach encourages
players to cooperate in training and matches). Players respond to all items on a
five-point scale ranging from strongly disagree (1), to strongly agree (5). In this
study, we analyzed internal consistency through Cronbach’s alpha coefficient,
obtaining values of .84 for task-involving climate and .85 for ego-involving
climate.

Cohesion. To assess cohesion we used the Spanish version of the Group
Environment Questionnaire (GEQ: Carron et al., 1985), carried out by García-
Calvo (2006). This instrument has 12 items grouped into four factors, , Group
Integration-Task (GI-T, 5 items, i.e. Team members are united in their efforts to
reach their performance goals in training sessions and matches), Group
Integration-Social (GI-S, 5 items i.e., “Team members would like to spend time
together in situations other than training and games”), Individual Attraction to
the Group-Task (ATG-T, 4 items, i.e., “On this team, I can do my best”), and
Individual Attraction to the Group-Social (ATG-5, 3 items, i.e., “The team is one
of the most important social groups I belong to”). Responses were rated on a 5-point likert scale ranging strongly disagree (1) to strongly agree (5). Scale showed internal consistency scores of .74 for GI-T, .77 for GI-S, .58 for ATG-T and .76 for ATG-S. As can be see, GI-S had low internal consistency, but this factor with low number of items might be accepted with scores under .70 (Lowenthal, 2001).

Collective Efficacy. To assess collective efficacy, we used the instrument developed by Leo et al. (2011), following Heuzé, Sarrazin et al.’s (2006) suggestions. The instrument starts with a stem phrase (i.e., “Our team’s confidence in our capability to…”) and has a total of 26 items that refer to some offensive (13 items, i.e., keeping ball possession in the face of rival pressure) and defensive soccer situations (13 items, i.e., “…to defend set piece ball situations”). Responses were rated on a 5-point likert scale ranging bad (1) to excellent (5). Internal consistency values of collective efficacy were .92.

Performance. To assess team performance, we used the average between final position in the classification table and season satisfaction perceived by the players. That is, a variable was created with the average found between the final position in the classification to which he belonged team each player and his assessment of the season with this position, in order to approach to the real performance.

Procedure

The study was carried out using a correlational methodology, with a longitudinal design of evolutionary analysis which consisted of two measurements at two different points in time, analyzing a subpopulation or specific group across the time interval. The measurements were carried out at the middle of the season (Measurement 1) and at the end of the season (Measurement 2) with approximately 20-22 weeks between them.

To collect the data, we developed a protocol to ensure that data obtention would be similar in the two measurements and in all the participants involved in the investigation. First, the main investigator of the study contacted each one of the coaches of the teams that could participate in the investigation to request the inclusion of their teams in the study. Also, players were informed that their participation was voluntary and that their responses would be confidential. The participants completed the questionnaires in the changing room, without the presence of the coach, individually, in an appropriate climate that allowed the players to concentrate without any kind of distractions. Completing the questionnaires took approximately 20 minutes; the main investigator was present at all times and emphasized that the players could ask for clarification of any doubts that might arise during the process.
Data Analysis

Data was analyzed using the SPSS 18.0 software for diverse types of analyses as factor analysis, reliability analysis, descriptive analysis and correlational analysis. We also used AMOS 18.0 software through maximum likelihood method with the aim to develop a structural equation model. To assess model fit tested, we used the following fit indexes: $X^2$ (Chi-Square and his significance), $X^2/gl$ (Chi-Square / degrees of freedom), CFI (Comparative Fit Index), TLI (Tucker-Lewis Index), RMSEA (Root Mean Square Error of Approximation) y SRMR (Standardized Root Mean Square Residual).

RESULTS

Descriptive Statistics

Table 1 shows the descriptive statistics of each variable of the study. Firstly, data normality was tested, obtaining in the Skewness index values ranged from -.7 and .9 and scores in the Kurtosis index from -.8 to .7.

Respecting the obtained means, players showed greater values in the task-involving climate with regard to ego-involving climate. With respect to cohesion, the average of its components had higher scores, both task and social factors. Regarding collective efficacy, slightly high means appeared.

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<th>Table 1. Descriptive Analysis</th>
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<td>Measurement 1</td>
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Correlation Analysis

Bivariate correlations analysis with the aim to assess the relationships among the different factors that composed the research, were conducted. As can be seen in Table 2, respecting the possible associations between motivational climate and team cohesion, it is important to note that task-involving climate was significant and positive related with all cohesion factors, obtaining greater
values in the correlations with the two task factors, integration to the group-task and individual attraction to the group-task. On the contrary, coach ego-involving climate showed a negative correlation with all cohesion factors, with the exception of individual attraction to the group-task, which did not show any significant values.

The same line of results emerged after observed the relationship between coach motivational climate with collective efficacy and performance. Task-involving climate had a positive association with collective efficacy and ego-involving climate showed a negative correlation with collective efficacy and final performance.

With respect to the relationship between cohesion and collective efficacy, it is important to note the significant and positive correlation among all cohesion factors with collective efficacy, showing greater values with respect to the two task factors, integration to the group-task and individual attraction to the group-task. In this sense, only attraction to the group-task showed a significant and positive relationship with performance. Moreover, it is important to note that integration to the social group was negative related with performance, which was unexpected a priori. Nevertheless, collective efficacy was positive correlated with performance at the end of the season.

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<th>Tabla 2. Bivariate Correlations</th>
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<td>5. Attraction Group-Social</td>
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<td>7. Collective efficacy</td>
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<td>8. Performance</td>
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*p < .05; **p < .01

Structural equation modeling

With the aim to test the prediction levels showed by the different variables included in the study, a structural equation modeling was conducted. Through this technique, relationships of directionality with prediction levels in the different variables was attempted to set up. Maximum likelihood estimate method and bootstrapping method were used, because Mardia’s coefficient was 102.05, which indicated that estimations results were robust, and therefore, they did not affect by the lack of multivariate normality (Byrne, 2001).

To develop the structural equation modeling, motivational climate variables have attempted to be integrated, team cohesion and collective efficacy with
performance, according to Bandura’s (1997) postulates, where indentified motivational climate and team cohesion as two of the principal antecedents of collective efficacy. Furthermore, this author suggested sport performance as one of the main consequences of collective efficacy.

Thus, coach motivational climate was included as predictor variable in the measurement 1, divided in two latent variables that composed the two factors, ego-involving climate and task-involving climate, which were formed by items belonged to each factor. Continuously, with the aim to examine the predictive capacity of motivational climate on cohesion, this last variable was included in the measurement 1, divided in two latent variables, task cohesion (integration to the group-task and individual attraction to the task-group) and social cohesion (integration to the group-social and individual attraction to the group-social), both composed of factors belonged to the main variable. As can be seen in Figure 1, task-involving climate positive predicted social and task cohesion, being this last factor higher weight of regression. Moreover, ego-involving climate positive predicted both social and task cohesion but weight of regression were not significant.

Following, with the purpose to analyze the prediction of cohesion n collective efficacy at the end of the season, this last facto was included in the model. This variable turned out as an only latent variable formed by group of items from that variable evaluated at the end of the season. AS can be seen in Figure 1, task cohesion positive and with a high weight of regression predicted collective efficacy. Nevertheless, social cohesion showed a negative prediction on collective efficacy, although it is important to note that the levels of the explained variance were low.

Finally, performance was included in the structural equation modeling, with the aim to test whether collective efficacy was related with any of its main consequences. To achieve this purpose, performance appeared as a latent variable formed by two variables such as classification and satisfaction with season, which was assessed at the end of the season during measurement 2. As can be seen, collective efficacy positive predicted performance with a high weight of regression.

Regarding the structural equation modeling, it is important to note that the values of the adjusted index from the model were adequate ($\chi^2 = 36.53; p = .00; gl = 118; \chi^2 /gl =2.62; CFI = .91; TLI = .90; RMSEA = .09; SRMR = .04$), because they are between the scores considered appropriate to determine the goodness index of the structural equation modeling.
Figure 1. Structural Equation Modeling about the relationships between coach motivational climate and cohesion factors (measurement 1) with respect to collective efficacy and performance (measurement 2).

**DISCUSSION**

The main aim of the study was to apply a theoretical model examining two of the antecedents of the collective efficacy, motivational climate and group cohesion, and its principal consequence such as performance. In this regard, results will be discussed with respect to the hypothesis suggested in the study, which postulated that the theoretical model will help an approachment about how group cohesion and motivational climate perform as antecedents of collective efficacy, and how this variable might predict performance.

After analyzes the obtained results in the structural equation modeling, it is affirmed that task-involving climate significant and positive predict social and task cohesion, (Chi and Lu, 1995; Pardo and Mayo, 1999), showing this last factor higher regression weights (Heuzé et al., 2006). Similar results were found by Balaguer and colleagues (Balaguer et al., 2003; Balaguer et al., 2004), who corroborated that task-involving climate emerged as the strongest predictor both social and task cohesion, that is to say, the higher is the perception of a coach
task-involving climate by players, the greater is the team cohesion showed by athletes.

Contrarily, coach ego-involving climate also indicated a positive prediction on task cohesion, but its predictive capacity was low and, nevertheless, it did not show any interaction with social cohesion. These outcomes are contradictory with those found by Balaguer et al. (2003) and Balaguer et al. (2004), who suggested the existence of a negative relationship between ego-involving climate and team cohesion, and Leo et al. (2011) who did not found any association between those variables. Despite these different results, it is showed the fact that participants belonged to the Balaguer and colleagues’ studies were in teaching stage (infantile and cadet), where children are more influenced by the coach. On the other hand, the current work and Leo and colleagues study were conducted with semiprofessional players, where promotion of a coach ego-involving climate might not damage players’ cohesion, because their profession is to compete with their own team players to play the more minutes in the game.

Following with the results’ discussion, social and task cohesion made different incidence on perception of collective efficacy. Whereas task cohesion positive predicted collective efficacy, social cohesion negative predicted, although it is important to note that regression weight is low. In this regard, previous studies have found that players perceived greater task cohesion in their teams showed more confidence in the group possibility (Kozub and McDonnell, 2000; Leo et al., 2011; Leo et al., 2010; Paskevich et al., 1999), but they did not find any result were social cohesion showed by players negative influenced on collective efficacy, but both dimensions predicted collective efficacy (Heuzé, Raimbault et al., 2006; Spink, 1990). This might be due that players in semiprofessional teams showed greater importance to cooperate in issues related with the game, because their works depends on that aspect, and not on personal issues, because as was previously indicated they have to compete among them to participate in the team. However, some studies with professional rugby players (Kozub and McDonnell, 2000) and volleyball universit players (Paskevich et al., 1999) revealed tht task cohesion dimension, integration to group – task and individual attraction to the group – task, emerged as the strongest predictors of collective efficacy rather than social dimensions.

Finally, it is pointed out that as has been demonstrated in numerous studies, collective efficacy emerged as a strong predictor of performance (Heuzé, Raimbault et al., 2006; Myers, Feltz et al., 2004; Myers, Payment et al., 2004; Watson et al., 2001). Therefore, it is assumed that the second hypothesis is confirmed, because the theoretical model explains how motivational climate and cohesion emerged as antecedents of collective efficacy and how performance appeared as a consequence of cohesion.

Some of the limitations of the study were that assessments of the different variables were conducted by perception of athletes, which can be distorted respecting the truth. Furthermore, as was indicated in previous studies, the
measurement of performance is based on issues such as classification, which might not reflect the real performance of the team. An interesting prospective to follow in future studies would be to carry out experimental works based on the improvements of group processes (motivational climate and cohesion) to demonstrate the improvement of collective efficacy and team performance.

The main conclusion reached in this study is that to optimize perception of collective efficacy in teams and therefore, the improvement of performance, it might fundamental that coaches set up strategies to promote a task-involving climate and task cohesion in players. Some guidelines were previously suggested by other authors, both motivational climate (García Calvo, 2006) and team cohesion (Leo, García Calvo, Parejo, Sánchez, and García-Más (2009), where different tools, strategies and trainings activities were planned to improve both aspects within the team.
REFERENCES


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