Determinants of group cohesiveness in sports:
Individual and group factors

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Abstract

Background: Most research on group cohesion in sports teams is based on the conceptual model proposed by Carron [1982]. Carron identified some individual and group factors that contribute to the development of group cohesion in a sports team. In the context of this model, it is often found in the literature that anxiety and athletes’ self-efficacy are significant individual factors, while communication among athletes and collective efficacy are significant group factors that predict group cohesion. Moreover, research has not shown consistent results in the relationship of the above-mentioned individual or group factors with group cohesion. The goal of this paper was to determine which factors, individual factors (anxiety and athletes’ self-efficacy) or group factors (collective efficacy and communication), can predict group cohesion more accurately.

Methods: The research was conducted on a sample of handball players \(N = 117\) from the clubs in the City of Zagreb, aged between 15 and 30. Group cohesion was measured by the Group Environment Questionnaire.
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(Carron, Widmeyer, & Brawley, 1985), anxiety was measured by the Sports Anxiety Scale-2 (Smith, Smol, Cumming, & Grossbard, 2006), self-efficacy by the General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995), communication by the Scale of Effective Communication in Team Sports–2 (Sullivan & Short, 2011), and collective efficacy by the Collective Efficacy Questionnaire for Sports (Short, Sullivan, & Feltz, 2005).

Results: The results are analyzed using a hierarchical regression analysis and it is shown that collective efficacy and communication are significant group cohesion predictors, whereas higher collective efficacy and frequent forms of acceptance when communicating within the team contribute to stronger team cohesion. Individual factors are not shown to contribute significantly to group cohesion.

Conclusion: This research has implications for practice in the field of sports psychology in terms of increasing the quality of training for coaches and athletes as well as helping them to achieve their goals.

Keywords: group cohesion, self-efficacy, anxiety, collective efficacy, communication

Introduction

The most widely used and accepted definition of group cohesion is Carron’s definition (1982, p. 124), which states that it is a “dynamic process that manifests itself in the tendency of a group to keep together and remain united in achieving its goals”. Nowadays, the majority of authors accept and use this definition in their research (Carron, Bray, & Eys, 2002; Cota, Evans, Dion, Kilik, & Longman, 1995; Ntoumanis & Aggelonidis, 2004; Steca, Pala, Greco, Monzani, & D’addario, 2013). Carron (1982) also created a general conceptual model of group cohesion, in which he structured the factors contributing to group cohesion. The antecedent factors that contribute to group cohesion are divided into four categories and arranged hierarchically so that the category closer to group cohesion is more important, i.e., assuming that it is more important in the prediction of group cohesion (Carron, 1982). Thus, as the most general category, Carron identified environmental factors, followed by individual factors and leadership, and finally, group factors as the most important for group cohesion.

The importance of group cohesion is shared among many contexts, including sport. Although a large number of studies have explored the role of factors that could have an effect on the emergence, maintenance, and level of cohesion in sports groups, research has revealed very little about the way particular factors contribute to cohesion. Martens, Burton, Vealey, Bump, and Smith (1990) suggest that a sports competition is a situation in which individuals can perceive as threatening, which in turn can result in anxiety. Previous research, which was devoted to examining the relationship between group cohesion and
anxiety in athletes, found that higher group cohesion was associated with a lower level of anxiety (Borrego, Cid, & Silva, 2012; Eys, Hardy, Carron, & Beauchamp, 2003; Prapavessis & Carron, 1996). These researchers measured competitive state anxiety, as well as group cohesion on a sample of athletes from a variety of interactive sports (football, basketball, rugby, etc.).

Another individual factor from Carron’s model (1982) that has not yet gained sufficient attention in group cohesion research (Leo, Sanchez, Sanchez, & Garcia Calvo, 2010) is the self-efficacy of athletes. Self-efficacy is closely related to the athletes’ assessment of their own resources in a threatening situation, and this assessment influences the choice of behavior, effort, and persistence in such a situation (Bandura, 1986). The literature review shows that the only study that has explored the relationship between group cohesion and self-efficacy was a study conducted by Leo et al. (2010). In that study, it was shown that there was a significant relationship between stronger group cohesion and higher perceived self-efficacy in a sample of semi-professional football and basketball players. As is the case with anxiety, there is certainly a need for more studies that examine the relationship between group cohesion and perceived self-efficacy.

A great deal of attention has been given to the study of the relationship between group cohesion and various group factors of sports teams, for example, team stability, group norms, group orientations, and collective efficiency. The group factor of collective efficiency has been the primary focus of researchers for some time. Zaccaro, Blair, Peterson, and Zazanis (1995, p. 309) define collective efficiency as a “sense of collective ability shared by individuals in scheduling, aligning and integrating their resources into a successfully coordinated response to specific situational requirements”. It is noted that this group construct is of great importance in interactive sports, such as handball, where players require higher levels of interaction and coordination (Gully, Incalcerrara, Joshi, & Beaubien, 2002). Concerning research on collective efficacy itself, a good part of such research found a correlation between highly perceived collective efficiency and stronger group cohesion (Paskevich, Dorsch, Brawley, & Widmeyer, 1999; Ramzaninezhad, Keshtan, Shahamat, & Kordshooli, 2009; Spink, 1990).

Unlike collective efficiency, the group factor of communication between members of sports teams is rarely examined in relation to group cohesion. Existing studies (Smith, Arthur, Hardy, Callow, & Williams, 2013; Widmeyer & Williams, 1991) show that stronger group cohesion is associated with more effective communication in a sports team. The limited amount of research on this subject is not justified since communication among members of the sports group lies at the core of the behavioral process in the team (Bradley, Baur,
ford, & Postlethwaite, 2013). Communication is the means that players use to coordinate their tasks and goals, as well as their social relationships within the team. Therefore, it is clear that there is a need for further research on the relationship between communication in sports teams and group cohesion.

As already mentioned above, Carron’s model assumes that group factors are closer than individual factors in the hierarchical structure contributing to the explanation of group cohesion. Therefore, according to the model’s assumptions, group factors have a greater predictive value in explaining group cohesion (Carron, 1982). However, the available literature generally lacks research on the comparative analysis of the contribution of these factors to group cohesion. The goal of this paper was to determine which factors – individual factors (anxiety and athletes’ self-efficacy) or group factors (collective efficacy and communication) – can predict group cohesion more precisely. Based on the assumptions of Carron’s model and the results of the previous research, the first hypothesis of this paper was that a lower level of anxiety and more pronounced perceived self-efficacy would predict stronger group cohesion of a sports team. The second hypothesis stated that more pronounced collective efficiency and better communication in a sports team would be significant predictors of stronger group cohesion. In accordance with the assumptions of the Carron’s model (1982), the third hypothesis claimed that collective efficiency and communication among members (group factors) would have a greater contribution to stronger group cohesion than self-efficacy and the anxiety of athletes (individual factors).

**Method**

**Participants**

The research was conducted on a sample of 117 handball players (84 male) from five clubs in the City of Zagreb, aged between 15 and 30 years ($M = 19.23, SD = 3.6$). On average, the participants were in their teams for three years ($M = 3.24; SD = 3.27$). This study was intentionally conducted on a sample of handball players because handball is in the category of interactive sports where good interaction among the athletes as a means of achieving the desired outcome is of utmost importance.

**Measures**

*Group cohesion* was measured using the Group Environment Questionnaire (Carron, Widmeyer, & Brawley, 1985). The questionnaire contains 18
statements in which the participants self-assess the group coherence of the team on a nine-point scale ranging from 1 (I completely disagree) to 9 (I completely agree). The literature shows that the original four-factor structure of this questionnaire is rarely confirmed in research (Glavaš, Držačić, & Barić, 2018; Schutz, Eom, Smoll, & Smith, 1994; Sullivan, Short, & Cramer, 2002). In this study, the exploratory factor analysis using principal component analysis (PCA) did not produce an original factor solution as was proposed by Carron et al. (1985), but rather a one-factor solution, as in other studies (e.g., Glavaš et al., 2018). Therefore, the overall result deriving from the whole questionnaire was used in this paper. It is formed as a simple linear combination of participants’ responses, whereby a higher result indicates stronger group cohesion of the team. Cronbach’s alpha for this questionnaire was satisfactory (α = .82).

Anxiety was measured using the Sport Anxiety Scale-2 (Smith, Smol, Cumming, & Grossbard, 2006), which measures the cognitive and bodily characteristics of anxiety in a sporting situation. The scale contains 15 statements on which participants evaluate their anxiety on a four-point scale (1 – not at all, 4 – very much). The scale consists of three subscales: worry and concentration disruption refer to the cognitive aspect of anxiety, while somatic anxiety refers to the physical aspect of anxiety. According to Smith et al. (2006), this instrument allows the formation of results as a total score on the scale. Thus, the overall result, which will be used in this paper, is formed as a simple linear combination of the participants’ responses to all 15 statements. A higher score indicates a higher level of anxiety experienced by athletes. Since the measure for anxiety has not yet been applied to the Croatian population, the construct validity was investigated using the principal axis factoring method (PAF). Even though a four-factor solution was suggested, factor loadings were unclear. After running the analysis in which a three-factor solution was forced, two items that in the first analysis formed one factor had a projection on the first-factor worry. Therefore, the authors decided that the two mentioned items are going to be excluded (“My muscles feel shaky”; “My muscles feel tight because I am nervous”). Cronbach’s internal consistency coefficient of the whole scale, after the previously mentioned items were deleted, was satisfactory (α = .87).

Collective efficacy was measured by the Collective Efficacy Questionnaire for Sports (Short, Sullivan, & Feltz, 2005), which measures an individual’s belief in his team’s belief in achieving a particular goal. It consists of 20 statements in which participants evaluate their team’s confidence on a 10-point scale (0 – not certain, 9 – very confident). According to the authors, the questionnaire consists of five subscales: ability, work, persistence, preparation, and unity. Short et al. (2005) state that the overall score on the questionnaire can be formed as a simple linear combination of participants’ responses to all the statements in the questionnaire. A higher score indicates a more pronounced
level of the individual’s belief that his team has a stronger conviction about its ability to achieve the desired results. Therefore, the overall result was used in data analysis. This instrument was never applied to the Croatian population and therefore the validity of the measure was examined using the factor analysis (PAF) method. The result of Cattell’s scree test and the characteristic roots indicated a one-factor structure. Two items that showed saturation below 0.3 on this single factor were excluded (“Rate your team confidence, in terms of an upcoming game or competition, that your team has the ability to perform under pressure”; “Rate your team confidence, in terms of an upcoming game or competition, that your team has the ability to persist when obstacles are present”). In the current study, Cronbach’s coefficient was $\alpha = .94$.

*Effective communication* between team members was measured by the Scale of Effective Communication in Team Sports-2 (Sullivan & Short, 2011). This scale consists of 15 statements to which participants indicate their answers on a seven-point scale (1 – *almost never*, 7 – *almost always*). According to the authors, the scale consists of four subscales: acceptance, uniqueness, positive conflict, and negative conflict. However, the results of the factor analysis (PCA) in this study showed three subscales. One of them is originally proposed uniqueness, second one was originally proposed negative conflict, while the third one we called acceptance and positive conflict, since statements that originally came under positive conflict were projected to acceptance. The result of each subscale was formed as a linear combination of the responses to the subscale statements. Cronbach’s coefficients for the acceptance and positive conflict, uniqueness, and negative conflict subscales were satisfactory: $\alpha = .84$, $\alpha = .69$, $\alpha = .74$, respectively.

To measure *general self-efficacy*, the Croatian version (Ivanov & Penezić, 2002) of the General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995) was used. The scale measures a general and stable sense of perceived self-efficacy in coping with various stressful situations. The scale consists of 10 statements to which the participants respond on a 5-point scale (1 – *not at all true*, 5 – *exactly true*). The result is formed as a sum of the responses to all ten statements, whereby a higher result indicates a higher level of self-efficacy. Cronbach’s coefficient indicates that the reliability of the scale was satisfactory ($\alpha = .84$).

In the statistical analysis, three variables were used as control variables: sex of the participant (male/female), age (in years), and the length of time as a member of the team (in years).

*Procedure*

This study was approved by the Ethics Committee of the Catholic University of Croatia. Informed written consent forms were collected from the partici-
pants, as well as informed consent forms signed by parents where applicable. The participants filled in the questionnaires in their respective clubs about 30 minutes before the training, and this took twenty minutes on average.

Results

Descriptive statistics between study variables are presented in Table 1. The participants achieved an average score on group cohesion and self-efficacy, above-average performance on collective performance, as well as in all sub-scales of communication in sports teams: uniqueness, acceptance and positive conflict, and negative conflict. In contrast, the participants reported a below-average level of anxiety.

Inter-correlations between the variables are shown in Table 2. As can be seen, the participants who reported stronger cohesiveness in the team were male and younger members. They also reported how their team had a more pronounced belief in its ability to achieve the desired results. The participants who reported a high level of team cohesion also reported higher levels of the communication of unique identity through nonverbal and verbal communication (uniqueness), as well as a higher level of the communication of appreciation (acceptance and positive conflict). Whenever the participants reported stronger cohesiveness, they also reported a lower level of emotional, personal,
Table 2. Inter-correlations for study variables

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<th>1.</th>
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<th>10.</th>
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<td>-.06</td>
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<td>.52**</td>
<td>.24**</td>
<td>.65**</td>
<td>-.20'</td>
<td>-.18'</td>
<td>-.24**</td>
<td>.02</td>
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<td>2.</td>
<td></td>
<td></td>
<td>-.12</td>
<td>-.14</td>
<td>-.10</td>
<td>-.23**</td>
<td>.04</td>
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<td>3.</td>
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<td>.25**</td>
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<td>4.</td>
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<td>.16'</td>
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<td>-.23**</td>
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<td>-.21'</td>
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<td>6.</td>
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Note. * p < .05  ** p < .01; a – Communication Subscale; b Sex: Men-1, Women-2
and confrontational exchanges occurring during conflict within the team (negative conflict).

In order to respond to the research questions of this paper, a hierarchical regression analysis was carried out in three steps. The order of entering variables was consistent with the assumptions of the Carron’s (1982) general conceptual model, which states that group factors derive from individual factors. For this reason, control variables were introduced in the first step (sex of the participant, age, and the length of time belonging to the team), the second step included two individual factors (anxiety and self-efficacy), and the third included group factors (collective efficiency, three subscales of communication).

After controlling variables in the first step of the analysis, the second step of the analysis did not show significance in predicting group cohesion.

<table>
<thead>
<tr>
<th>Predictors</th>
<th>β</th>
<th>p</th>
<th>$R^2$</th>
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</thead>
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<td><strong>first step: control variables</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Sex</td>
<td>-.16</td>
<td>.11</td>
<td>$R^2 = .054$</td>
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<tr>
<td>Age</td>
<td>-.22*</td>
<td>.02</td>
<td>$F(3, 102) = 3.00$</td>
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<tr>
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<td>.72</td>
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<td><strong>second step: individual factors</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Sex</td>
<td>-.15</td>
<td>.14</td>
<td>$R^2 = .056$</td>
</tr>
<tr>
<td>Age</td>
<td>-.26**</td>
<td>.01</td>
<td>$F(5,100) = 13.83$</td>
</tr>
<tr>
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<td>.05</td>
<td>.60</td>
<td>$\Delta R^2 = .002$</td>
</tr>
<tr>
<td>Anxiety</td>
<td>-.06</td>
<td>.56</td>
<td></td>
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<tr>
<td>Self-efficacy</td>
<td>.13</td>
<td>.20</td>
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<td><strong>third step: group factors</strong></td>
<td></td>
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<tr>
<td>Sex</td>
<td>-.10</td>
<td>.15</td>
<td>$R^2 = .496$</td>
</tr>
<tr>
<td>Age</td>
<td>-.15</td>
<td>.05</td>
<td>$F(9, 96) = 11.07$</td>
</tr>
<tr>
<td>Belonging to the team</td>
<td>-.04</td>
<td>.63</td>
<td>$\Delta R^2 = .440^{**}$</td>
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<tr>
<td>Anxiety</td>
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<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
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<td>.70</td>
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<tr>
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<td>.22*</td>
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<tr>
<td>Uniqueness</td>
<td>.03</td>
<td>.70</td>
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<tr>
<td>Acceptance and Positive Conflict</td>
<td>.51**</td>
<td>.00</td>
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<tr>
<td>Negative Conflict</td>
<td>-.06</td>
<td>.42</td>
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</table>

Note. *p < .05 **p < .01; a Sex: Men-1, Women-2; b – Communication Subscale.
The combination of group factors in the third step of the analysis was significant in the prediction of group cohesion. It was shown that more pronounced collective efficacy (\(\beta = .22, p < .05\)) and only one type of communication [i.e., acceptance and positive conflict; \(\beta = .51, p < .01\)] significantly predicted stronger group cohesion. As can be seen in Table 3, the proportion of the explained group cohesion significantly increased by 44% (\(\Delta R^2 = .44\)) with the introduction of group factors in the third step of the analysis.

**Discussion**

Based on the model proposed by Carron (1982) and the results of previous research [Borrego et al., 2012; Eys et al., 2003; Prapavessis & Carron, 1996], the first hypothesis of this paper was that individual factors, that is, a lower level of anxiety, as well as more pronounced self-efficacy would contribute to stronger group cohesion within the sports team. The results of this research have not shown a significant predictive value of individual factors to group cohesion. Accordingly, the results of this study are not in line with the first hypothesis. This might be the result of the different formulation of results on the instruments used. For instance, the aforementioned authors did not form an overall result of the Group Environment Questionnaire (Carron et al., 1985), as was the case in this research; rather they were investigating the correlation between anxiety and each dimension of that questionnaire. In those studies, a significant correlation was found between cognitive competitive anxiety and task cohesion but not a significant relationship with social cohesion [Eys et al., 2003; Prapavessis & Carron, 1996]. Also, a different formulation of results was used on the instruments that measured anxiety in this study and previous studies. Earlier research used results formed in two dimensions of anxiety – cognitive and somatic anxiety [Eys et al., 2003; Prapavessis & Carron, 1996], while this study used an overall result on the instrument that measured anxiety. This might be the reason why a predictive value of anxiety to group cohesion was not found in this study.

Furthermore, the findings of the insignificant relationship between self-efficacy and group cohesion in this research may be explained by the applied self-efficacy measure. Namely, the measurement of self-efficacy used in this study is an instrument that measures general self-efficacy. Some authors argue that a person can have different levels of self-efficacy in different aspects of tasks and that measures which question more specific behaviors are more likely to predict them [Bandura, 1986; Schwarzer, Bäßler, Kwiatek, Schröder, & Zhang, 1997]. Therefore, when an athlete estimates self-efficacy, it is possible that he
or she is thinking about situations that are not related to the effectiveness of performing sports tasks. It is thus possible that the results would be different from those using an instrument that measures self-efficacy related to tasks within the sports team. Further studies on this topic are needed.

The second hypothesis of this paper stated that a higher level of belief in the team’s ability to achieve the desired result or goal would significantly predict stronger team cohesion. It was also assumed that more effective communication in the team would significantly predict stronger group cohesion. The results of this study were partially consistent with the assumptions of the model (Carron, 1982), as well as previous research that investigated the relationship between group cohesion with collective efficiency (Heuzé, Raimbault, & Fontayne, 2006; Ramzaninezhad et al., 2009) and communication (Sullivan & Feltz, 2003; Widmeyer & Williams, 1991). Namely, the results show that a higher level of collective efficiency significantly predicts stronger group cohesion as shown by the previous research. Placed in the context of sports, collective efficacy is important, especially when it comes to interactive sports, as teams with a higher level of collective efficiency can make more effort and persevere longer in tasks, which could lead to a performance that could achieve the desired goal. Some authors suggest that the predictability of team’s beliefs, the ability to perform a certain sequence of actions is greater in sports in which there is a higher level of tasks in which teammates are interdependent (e.g., handball, volleyball, football, basketball).

Regarding communication, uniqueness and negative conflict were not significant predictors, while only the acceptance and positive conflict subscale (more frequent patterns of acceptance and constructive conflict resolution) proved to be a significant predictor of group cohesion. Sullivan and Feltz (2003) suggest that the explanation of the results lies in the instrumental nature of sports teams, that is, the authors state that communication is dependent on the context in which it is taking place. A sports environment is one of the contexts in which the core of communication is mostly related to tasks. So, in a situation where an athlete “shows a pattern of acceptance, he mostly supports his teammate to achieve success in a particular task” (Sullivan & Feltz, 2003, p. 1711). Also, patterns of unity and positive and negative conflict can be expressed by players as they communicate about the strategy of the game as part of a ritual in the game, as well as while communicating about personal matters (Sullivan & Feltz, 2003).

The literature review reveals a lack of research concerning which factors have a higher predictive value in explaining group cohesion. In accordance with Carron’s model (1982), it was assumed that group factors would contribute more to group cohesion than individual factors. The obtained results are in
line with the third hypothesis, showing that individual factors do not make a significant contribution to group cohesion, whereas group factors have predictive importance in its explanation.

Like any other research, this one is also characterized by some limitations. First of all, there was no control over whether the participants completed the questionnaires before or after a competition, or what the outcome of the competition was. This means it is possible that the participants’ responses were influenced by the competitive situation and that their evaluation at that point did not correspond to the evaluation they would have given had the context been different, that is to say, if they had not filled in the questionnaires before or after a competition. Apart from that, this was a cross-sectional research based on which no conclusions can be drawn on cause-and-effect relationships. In addition, a general self-efficacy measure was used instead of a specific self-efficacy measure for a sports environment, and, unlike in previous studies, general anxiety was measured instead of the specific dimensions of anxiety.

This research is characterized by numerous contributions. Most of the research in this area has been devoted to examining the relationship between only one to two individual (Leo et al., 2010; Prapavessis & Carron, 1996) or group factors (Paskevich et al., 1999; Sullivan et al., 2011) and cohesion. A small number of studies (Leo, Gonzales-Ponce, Sanchez-Miguel, Ivarsson, & Garcia-Calvo, 2015; Onag & Tepeci, 2014; Widmeyer & Williams, 1991) investigated simultaneously the relationship between individual and group factors with group cohesion. Therefore, the contribution of this research is that it is one of the few studies in which the relationship of group cohesion with a greater number of individual and group factors was studied at the same time. It is particularly valuable because it was, to the authors’ knowledge, the first such research conducted in Croatia. A further contribution of this research is that it is the first on group cohesion to be carried out on a sample of handball players. Until now, research on group cohesion in the field of interactive sports has mainly been carried out in volleyball (Paskevich et al., 1999; Ramzaninezhad et al., 2009), basketball (Heuze et al., 2006; Prapavessis & Carron, 1996), football, and hockey players (Eys et al., 2003; Prapavessis & Carron, 1996). Future research will show if there are some differences between different group sports, perhaps a difference between coactive and interactive sports groups.

**Conclusion**

The results of this study have shown that collective efficacy and communication are significant group cohesion predictors, whereby a higher collective efficacy and frequent forms of acceptance when communicating within the team,
contribute to stronger team cohesion. Individual factors are not shown to contribute significantly to group cohesion. This research is a good starting point for further empirical work that will bring us closer to understanding the dynamics of sports groups. We also believe that the research results have implications for practice in the field of sports psychology in terms of increasing the quality of training for coaches and athletes, as well as helping them to achieve their goals.

References


Protection and promotion of the well-being of children, youth, and families

ka psihologijskih skala i upitnika, Svezak 1 [Collection of Psychological Scales and Questionnaires, Vol. 1] (pp. 6-7). Zadar: Filozofski fakultet.


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