

Collective Cohesion and Team Efficacy in the Preparation Period and Team Performance

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Summary

The aim of the study was to verify to what extent the effectiveness of sports teams throughout the season is conditioned by group processes, especially group cohesion and a sense of team efficacy. Measurements of the analysed group processes were performed before the beginning of the main season, which allowed to obtain an answer to the question as to whether the level of group cohesion and the sense of team efficacy developed before the start of league games is significantly correlated with the team's successes throughout the season proper. The study comprised 28 teams from 2 disciplines: basketball and volleyball. Both women and men participated in the study. Group cohesion was evaluated with the Polish version of the Group Environment Questionnaire (Polish adaptation according to Krawczyński, 1995), and the sense of team efficacy was assessed with the Team Effectiveness Questionnaire (Polish version by Wałach-Biśta, 2015). The obtained results of simple regression analysis showed that the sense of team efficacy is a significant, strong and positive predictor of effectiveness on the pitch, both in women's and men's teams. Further analyses have indicated that the gender of athletes is a significant moderator of the relationship between group cohesion in the GIS dimension (group social integration) and team performance. Hierarchical regression analysis demonstrated that gender, GIS, and gender interaction with GIS explain 20.2% of the variance regarding the dependent variable: efficiency; and the overall model is statistically significant ($F(3, 24) = 3.28$; $p < 0.05$). On the other hand, correlation analyses showed that in the men's teams, along with the increase in social group integration, group effectiveness also significantly increased ($r = 0.436$; $p < 0.05$). In the women's teams, the correlation turned out to be significant at the level of the statistical tendency, and the relationship between group effectiveness and the level of group social integration turned out to be negative and moderately strong ($r = -0.432$; $p < 0.07$).

Keywords: group cohesion, sense of team effectiveness, efficiency, data aggregation, group processes

Introduction

In team sports, many factors can affect the results of sports teams. The coaches themselves have long postulated that the most effective sports teams do not necessarily consist of the most talented players with the highest sports skills (Martens & Peterson, 1971). This prompted researchers to look for other factors affecting the performance of sports teams. For example, Carron's theoretical model for studying sports teams emphasizes that group effects, i.e. team efficacy, are related to both individual and environmental factors as well as processes within social groups, including group cohesion and a sense of collective effectiveness (Carron and et al., 2005).

Research on the effectiveness of sports teams in combination with group cohesion has a long tradition in the psychology of sport, as it has been conducted since the 1960s. Group cohesion is most often defined in sport as a dynamic process that is reflected in the tendency of group members to 'stick' together and stay united to achieve common goals and/or to satisfy the emotional needs of group members (Carron,

Brawley & Widmeyer, 1998). Each team member has a certain belief about his/her team as a whole, and how the group meets those personal needs and goals. The strength of these beliefs explains a group's cohesiveness (Beauchamp & Eys, 2008). In the conceptual model of group cohesion in sport, 4 dimensions of cohesion have been distinguished: individual vs. group and social vs. task (Carron et al., 1985). Group integration reflects the teammates' perception of their reunification. The individual attractiveness of a group indicates to what extent the group is attractive to its individual members. On the other hand, the task and social dimensions reflect general orientation and motivation either towards achieving the team's goals, or towards developing and maintaining social relationships within the group (Beauchamp, Eys, 2008).

The relationship between group cohesion and efficiency has been considered in theoretical models, among others, in Carron's conceptual model of group cohesion (Carron et al., 2005). Furthermore, coaches (Eys et al., 2015) and players emphasize the importance of this relationship (Pain & Harwood, 2008). In the vast majori-

ty of studies on the relationship between group cohesion and effectiveness, their authors indicate the existence of a significant, positive relationship between these variables at different league levels, as well as in various sports (i.e. Carron, Bray, Eys, 2002), including those that do not require direct cooperation of players with each other, such as golf, swimming or sprinting (i.e. Hoigaard, Tofteland, Ommundsen, 2006). The higher efficiency of cohesive teams results, *inter alia*, from the fact that group cohesion reduces social idleness (Hoigaard, Tofteland & Ommundsen, 2006). Additionally, in the meta-analysis conducted by Carron, Colman, Wheeler and Stevens (2002), it has been confirmed that a relationship between the analysed variables does exist. The results indicate that the relationship between group cohesion and achieved sports results is significant and, depending on the measurement tools used, either moderate or strong. In a more recent meta-analysis, taking into account research conducted in the years 2000-2010, the existence of a positive moderate relationship between group cohesion and sports results achieved by teams has also been confirmed (Filho, Dobersek, Gershoren, Becker and Tenenbaum, 2014). However, in this case, the obtained results suggest that task cohesion is a much better predictor of effectiveness than the social dimension of cohesion. In a meta-analysis by Filho et al. (2014), the authors also confirm that, as in the previous analysis (Carron et al., 2002), gender is a moderator of the relationship between the analysed variables.

In addition to group cohesion, a sense of collective effectiveness is considered a key factor in the performance of sports teams. According to the conceptual model of researching sports teams, the group's sense of the effectiveness of its own team has been recognised as one of the most important processes related to motivation, perseverance and achieved results, as well as satisfaction and attachment of members to their team (Carron et al., 2005). A sense of team effectiveness is "the belief expressed by a group in their joint, combined ability to organise and perform specific actions necessary to achieve a certain level of results" (Bandura, 1997, p. 477). The interaction, coordination of group members and the integration of their resources, as well as synergistic dynamics in specific situations, are of particular importance (Bandura, 2000; Zaccaro et al., 1995).

A team's confidence in its capability to succeed is another variable in team performance. The sense of collective effectiveness can predict team effectiveness to a greater extent than the individual self-efficacy of particular players (Feltz & Lirgg, 1998). Teams that are convinced of their success are likely to put in more effort and persistence when facing demanding challenges than teams unsure of their abilities (Feltz & Lirgg, 2001). In experimental studies, it has been confirmed that groups in which a sense of team effectiveness was evoked: a) in the face of failure, showed greater persistence, and during the next attempt, they improved their results (Bray, 2004), b) showed greater effort (Greenlees,

Graydon and Maynard, 1999; Greenlees, Graydon and Maynard, 2000), c) set higher goals or those at a similar level of difficulty for themselves (Bray, 2004; Greenlees, Graydon & Maynard, 2000). Moreover, the awakened sense of group effectiveness was positively related to the effectiveness of the created teams, also because the tendency of team members to socialise was reduced. This shows that the sense of collective effectiveness is significantly related to the implemented effort (Lichacz, Partington, 1996). In other studies on professional sports teams participating in league competitions, it has been shown that the sense of team effectiveness measured immediately before a match is a positive predictor of effectiveness for the entire sports team (i.e. Feltz and Lirgg, 1998; Filho, Tenenbaum, Yang, 2015; Myers, Payment and Feltz, 2004, 2007). Additionally, Myers et al. (2007) suggest that while a sense of collective effectiveness fluctuates during the game, it can only change in a relatively narrow area from the starting point. This means that pre-performance assessments can remain relatively immune to the ups and downs of team performance throughout the game.

Although in a number of studies a positive relationship is demonstrated between group cohesion, a sense of team effectiveness and team effectiveness, the topic still seems to be interesting and worth further exploration. In the majority of studies to date, the group effect has been neglected, while the results have been analysed at an individual level. In such analyses, the team performance index was repeatedly duplicated and correlated with the individual group cohesion indicators of individual players. In addition, group processes were analysed at various stages of the group's development, which does not allow for unification of the results obtained so far or for construing practical tips for optimising the preparation of sports teams in league games. From a practical perspective, it seems particularly important to evaluate to what extent group cohesion and sense of team effectiveness developed in the preparatory period are related to the effectiveness of the teams throughout the whole season. Such insight could allow for better matching of team building strategies and mental training in working with sports teams, which could lead to optimisation of the team training process in the preparatory period.

Therefore, in the presented study, an attempt was made to verify the relationship between group cohesion and the sense of team effectiveness with the results achieved by sports teams throughout the season. Both group cohesion and sense of effectiveness were tested in the preparatory period, before the official initiation of league games. Therefore, the current level of achieved social and task integration was verified, as well as the players' beliefs about their effectiveness throughout the season. The aim of the study was also to verify whether any of the analysed group processes are significantly more closely related to the effectiveness of teams, and whether the gender of athletes is a moderator of the relationship between these processes and the effectiveness of sports teams.

Methods

Research procedures and the study group

The study included female and male sports teams participating in league games at the 1st and 2nd league levels. Teams in which the vast majority of members were fluent in Polish were selected for research. It was crucial for researchers to collect data from at least 80% of the team members studied so that the results obtained represent the opinion of the majority of the team. In the first stage, selected clubs were contacted and, after obtaining the preliminary consent of the club's authorities and team coaches to conduct the trial, the coaches were made an appointed for a convenient date (before or after training), so that the entire team could take part in the study at the same time. During the meeting, the subjects were informed about the purpose of the research, the confidentiality of collecting and processing the results and about voluntary participation in the study. Then, the players completed the prepared set of questionnaires and returned it directly to the researchers.

Ultimately, 30 sports teams participated in the study, however, 2 teams were excluded from further analysis due to the fact that less than 80% of team members completed the questionnaires. Most of the surveyed teams ($n = 20$) participated in league games at the level 2 league. It was decided to include only 2 disciplines in the team study: basketball and volleyball. According to Pescosolido and Saavedra (2012), group consistency is a function of this group's tasks and its working context, in particular, the group's working system. Some tasks require complex interdependence involving a certain degree of consistency in order to communicate and coordinate effectively. According to their characteristics, both basketball and volleyball are highly complex sports in which high group cohesion should be particularly profitable.

Both male ($n = 15$) and female ($n = 13$) teams participated in the study. More than 57% of the surveyed teams comprised volleyball teams, and the remainder were basketball teams. In total, 352 athletes participated in the study, including 161 women and 191 men. The mean age of the respondents was above 22 years ($M = 22.67$; $SD = 4.92$; $min = 16$; $max = 41$), while for women, this value was 20.61 years, and for men, 24.38 years. On average, the participants practiced the selected sport discipline for over 10 years ($M = 10.32$; $SD = 4.60$; $min = 3$; $max = 29$).

Research tools

To measure group cohesion, the Group Environment Questionnaire (Carron, Widmeyer & Brawley, 1985; Polish version: Krawczyński, 1995) was used, which takes 4 subscales into account: a) Individual Attraction to the Group-Task (ATGT); b) Individual Attractions to the Group-Social (ATGS); c) Group Integration-Task (GIT); d) Group Integration-Social (GIS). In the conducted study, the reliability indicators were: 0.66 for the

ATGT subscale; 0.62 for the ATGS subscale; 0.64 for the GIT subscale and 0.71 for the GIS subscale, and were comparable with the reliability results obtained in the Polish version (Krawczyński, 1995b).

The sense of team effectiveness was measured using the Team Effectiveness Sense Questionnaire (Polish version: Wałach-Biśta, 2015), which is modelled on the basis of the American Collective Efficacy Questionnaire for Sports (Short, Sullivan, and Feltz, 2005). The Polish Sense of Team Effectiveness Questionnaire consists of 21 items that are divided into 4 dimensions: effort, perseverance, preparation and efficiency. It is also possible, after totalling the individual subscales, to calculate the global score for the team's sense of effectiveness. The respondents answer the questions on an 11-point scale, where 0 means that the subject is not sure at all, while 10 means extremely sure. In the above study, Cronbach's alpha reliability indicators for this questionnaire regarding the subscales were: persistence – 0.88, efficiency – 0.91, effort – 0.88, preparation – 0.85, and for the entire scale – 0.96.

The team effectiveness verified at the end of the season proper on the basis of their place in the table, the ratio of matches won to those played, and the ratio of scored points. These statistics were used to determine the overall performance of the teams throughout the season.

Results

In order to determine the predictors of the sports teams' effectiveness, statistical analysis was carried out at a group level. The data were aggregated to the arithmetic mean of the group members' scores as the overall team score. Data aggregation from the individual to group level was eligible for the calculated indices of agreement and intra-class correlation coefficients (ICC). The analyses included results that reflected at least small degrees of aggregation in the perception of coherence, i.e. for ATGT and ATGS: $min. 0.40$, and for GIT and GIS: $min. 0.50$ (Carron et al., 2003). It was decided to take this step because in the research by Carron et al. (2004), it was shown that the exclusion of teams not meeting the consensus criteria leads to changes in the size of the cohesion-team effectiveness relationship. In relation to the sense of team effectiveness, an exclusion index of 0.50 of the calculated compliance index was used.

Group cohesion and team sense of efficacy versus effectiveness

In Table 1, results are presented regarding correlation analyses between the subscales of group cohesion and the sense of team effectiveness and the effectiveness of teams, determined on the basis of the results achieved throughout the season.

The obtained results turned out to be surprising compared to the results of previous studies. There were

no statistically significant relationships between the analysed results in the subscales of group cohesion with effectiveness. The obtained results allow to suggest that the relationship between group cohesion and effectiveness may take the opposite direction to that assumed. The results show that at the level of the statistical tendency, the relationship between individual group social attractiveness and task effectiveness may turn out to be significant ($r = -0.28$; $p < 0.1$).

However, contrary to expectations, this correlation turned out to be negative. Moreover, further analysis on the effect size for the above correlation showed that the relationship between ATGS and group effectiveness can be described as moderately strong.

The obtained data show that with the sports successes achieved by the surveyed teams, only the sense of team effectiveness is significantly correlated, but only in one aspect - efficacy ($r = 0.39$; $p < 0.05$). The more convinced the teams are at the beginning of the season that they will be able to win and achieve good sports results, the higher their performance throughout the season.

This effect may be considered large. At the level of the statistical tendency, the relationship between general sense of team effectiveness and performance effectiveness ($r = 0.27$; $p < 0.1$) turned out to be significant.

Simple regression analyses, in which the sense of team effectiveness in the efficacy dimension were tested as a predictor of effectiveness, showed that the model is statistically significant ($F(1,26) = 4.64$; $p < 0.05$), and explains 15.1% of the variance of the team effectiveness

variable. The correlation between sense of team efficiency in the dimension of efficacy and effectiveness turned out to be strong and positive ($\beta = 0.39$). The results are presented in Table 2.

Gender as a moderator of the relationship between group processes and team effectiveness

Earlier analyses did not show any significant relationships between group consistency and effectiveness, therefore, a series of hierarchical regression analyses for the group effectiveness variable were carried out, during which, in the first step, biological sex was introduced, in the second, one of the dimensions of group consistency (ATGT, ATGS, GIT or GIS), while the third step concerned the interaction of variables. The regression model for group effectiveness was statistically significant in the third step only after introducing the interaction of biological sex and the GIS dimension (Table 3). Thus, only the results obtained for this model are presented below.

The conducted analysis allows to indicate that gender, GIS and the interaction of gender with GIS explain 20.2% of the variance regarding the dependent variable if effectiveness, and the entire model is statistically significant ($F(3, 24) = 3.28$; $p < 0.05$). Both gender and the interaction of biological sex with GIS turned out to be significant predictors of the studied teams' efficacy.

Correlation analyses showed that in the men's teams, with an increase in social group integration, group effectiveness also significantly increased ($r = 0.436$; $p < 0.05$). In the women's teams, the correlation turned out to be significant at the level of the statistical tenden-

Table 1. Group processes and task efficiency of sports teams

	r	95% CI	p	d
Group cohesion – before the season				
Individual group task attractiveness	-0.030	[-0.40; 0.36]	0.561	-0.06
Group task integration	0.037	[-0.34; 0.40]	0.426	0.07
Individual group social attractiveness	-0.278	[-0.59; 0.11]	0.924	-0.58
Group social integration	-0.096	[-0.45; 0.29]	0.686	-0.19
Sense of team effectiveness				
Perseverance	0.230	[-0.16; 0.56]	0.120	0.48
Efficacy	0.389	[0.02; 0.67]	0.020	0.84
Effort	0.219	[-0.17; 0.55]	0.132	0.45
Preparation	0.172	[-0.21; 0.51]	0.191	0.35
Total score	0.271	[-0.11; 0.58]	0.082	0.56

Note: p value for one-way test

Table 2. Simple regression results for task effectiveness (predictor: team efficiency in the efficacy dimension)

Statistical model	F(1,26)	R ²	β	p
	4.64*	0.151		
Efficacy			0.389	0.041*

† $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 3. Hierarchical regression analysis for task group effectiveness (predictor: gender, group social integration measured before the season, and interaction of gender and social group integration)

	Step 1		Step 2		Step 3	
	$\Delta R^2 = 0.15^*$	β	$\Delta R^2 = 0.01$	β	$\Delta R^2 = 0.14^*$	β
Gender		-0.38*		-0.38†		-0.37*
Group social integration				-0.05		-0.09
Group social integration x gender						-0.38*
Statistical model	F(1, 26) = 4.41; p < 0.05; adj. R ² = 0.112		F(2, 25) = 2.17; p < 0.2; adj. R ² = 0.080		F(3, 24) = 3.28; p < 0.05; adj. R ² = 0.202	

† $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; gender coding: -1 - male, 1 - female

cy, and the relationship between group effectiveness and the level of group social integration turned out to be negative and moderately strong ($r = -0.432$; $p < 0.07$). In order to verify whether the relationship between GIS and effectiveness is equally strong for both men and women, significance of differences regarding correlation coefficients was tested.

The obtained results ($z = 2.17$; $p < 0.05$) allow to conclude that the strength of the correlation between group social integration and the effectiveness of teams differs significantly depending on the sex of the subjects.

Once more, a series of hierarchical regression analyses were performed to verify whether biological gender is a significant moderator of the relationship between sense of team efficacy and team effectiveness. None of the analysed models (separately for each sub-dimension of team effectiveness) turned out to be statistically significant. Biological sex did not significantly differentiate the strength of the correlation between the sense of team effectiveness and pitch-performance of sports.

Discussion

Both Carron's sports team research model (Carron et al., 2005) and Vealey's model of mental strategies (2007) emphasize the importance of group processes in building an effective sports team. The variables that seem particularly significant in this process are group cohesion and a sense of team effectiveness. In research conducted to date, it is indicated that the feeling that we are able to win as a team, achieve goals, is significantly related to sports successes achieved by teams, among others, because teams with a high sense of collective effectiveness do not give up in the face of defeat (Hodges, Carron, 1992), put in more effort (Greenlees et al., 1999) and persevere in carrying out equally demanding tasks (Greenlees et al., 2000), which is crucial in sport.

The obtained results confirm earlier the reports by Paskevich (1995), who suggested that the sense of team effectiveness is not only related to the effectiveness of teams during a short period of time, but also predicts them in a much longer perspective. Team members' high confidence in the pre-season that as a group they

will be able to win and achieve high results. does indeed predict end-season performance of teams. More importantly, the sense of collective effectiveness has the same influence on effectiveness in both women's and men's sports teams (including Myers et al., 2004, 2007).

It is commonly accepted that group cohesion, in addition to a sense of collective effectiveness, is connected with the effectiveness of sports teams. In some studies to date. these socially replicated beliefs have been confirmed (i.e. Carron et al., 2002). In the presented study, the obtained results do not allow for drawing similar conclusions. Group cohesion did not turn out to be significantly related to sports results achieved by the surveyed teams throughout the season. It was only possible to notice an inverse relationship at the trend level, indicating that the higher the group attractiveness assessed in the preparatory period, the lower the effectiveness of the teams. The obtained results do not allow for the conclusion that social cohesion has negative impact on the effectiveness of teams, but they highlight the potential negative consequences of highly developed group cohesion in sports teams.

There are several reasons why group cohesion may be associated with a reduction in execution quality. Carron and Chelladurai (1981) emphasized that individuals enter teams and teams with various needs, including the need for belonging and affiliation, which can be effectively satisfied by being part of a group. However, those social forces that keep the group together are also associated with development in subgroups – social cliques, which, according to Carron and Chelladurai (1981), may disturb the coordination of the entire team and, as a result, limit the possibilities of achieving sports success.

Most players also see potential disadvantages resulting from highly developed group social cohesion (Hardy, Eys, & Carron, 2005). Wasting time on jokes, less interest in sports goals and less involvement in their implementation, problems with communication and, above all, with criticism, shifting attention to social relations instead of sports tasks. are the potential group problems that, according to athletes, must be faced by teams that characterise high group social cohesion, which may explain the results obtained in the above study. Prapavessis and Carron (1996) pointed out that perceiving the psy-

chological costs of high group cohesion, such as increasing pressure not to disappoint teammates, fear of not meeting the expectations of colleagues or the feeling of having to play very well, increases the likelihood of increased pressure. On the other hand, increasing pressure is tantamount to increasing anxiety, which may effectively reduce the effectiveness and efficiency of players (i.e. Pijpers et al., 2003). The analysed study involved players from lower leagues of sports competitions, which may be associated with a lower level of their sports training. With increased anxiety and agitation, differences in the presented sports skills compared to elite players can significantly affect the effectiveness of teams and explain the reason for the results obtained in the above study.

The gender of the players turned out to be an important moderator of the relationship group-social integration and task effectiveness. In women's teams, a high level of social cohesion already at the beginning of the season was a factor increasing the risk of lower athletic performance during the season, which confirmed the earlier findings of Gioldasis et al. (2016). Moreover, the vast majority negative consequences reported by Hardy et al. (2005) regarding the high level of social cohesion in the teams were noticed by the players. This gives grounds to suppose that in women's teams, high group cohesion before the beginning of league games may actually be related to the effectiveness of teams.

In male teams, an inverse relationship was observed, indicating a positive correlation between social cohesion and effectiveness. A high level of group social integration may increase the chances of achieving high sports results, which, in turn, increases the attractiveness of the team itself from a social point of view and strengthens relations between players (i.e. Carron et al., 2002).

The obtained results have not allowed to confirm previous findings, indicating a positive relationship between task coherence and effectiveness (i.e. Carron et al., 2002; Filho et al., 2014; Martinez-Santos, Ciruelos, 2013). Therefore, the results of the presented study may be considered quite compared to the findings presented in previous works. However, it should be taken into account that group cohesion was measured before the start of sports games, and the team's successes were analysed throughout the season, which has so far been rarely practiced in conducted research. Data have been aggregated to the group level, which was also done in only a few studies (Carron et al., 2002). Additionally, the study was conducted among teams from the 1st and 2nd Polish leagues, which may also have had significant impact on the obtained results. Teams at this level of league games are rarely characterised by a fully professional approach or preparation, and players are only occasionally able to make a living from the wages received at sports clubs, which rather indicates their semi-amateur nature. Most of the world-wide research conducted to date has been on players at elite levels, and also at the level of university leagues, where the level of preparation and training facilities is much higher, which, in turn, may translate into differences regarding the obtained correlations between

group cohesion and team effectiveness. Additionally, in the study, we did not take into account other key factors such as the sports potential of players, the level and duration of the teams' sports preparation in the period preceding the start of the tournament, which in the case of lower-level teams, may play a more important role.

Therefore, the results obtained in the above study should be treated with some caution. Nonetheless, further research on the analysed variables (considering measurement of the analysed variables at different stages of the season) is certainly necessary to better and more accurately understand how group cohesion and sense of team effectiveness are related to the results of teams, both those comprising male and female athletes.

Practical implications

The obtained results allow for a better understanding of the functioning of women's and men's sports teams. By broadening knowledge on group processes, it is possible to better organise the activities of training staff in order to increase team effectiveness throughout the season. It has been demonstrated in research that empowering players in the preparatory period to believe that, as a team, they are able to demonstrate the skills and abilities that will allow them to successfully perform their tasks during matches, can be an effective technique influencing the actual successes of teams during the season proper. Moreover, the obtained results show that group processes taking place among sports teams, depending on the gender of members, are to a different extent related to the effectiveness of the teams. This indicates that the preparation of coaches for cooperation with sports teams should differ depending on whether they are training women or men. This means that simply transferring the methods used by the coaches in men's teams to women's can sometimes be counterproductive. The knowledge resulting from the above research can therefore be used in the process of educating coaches and preparing them to run sports teams.

References:

- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman & Company.
- Bandura, A. (2000). Exercise of human agency through collective efficacy. *Current Directions in Psychological Science*, 9, pp. 75-79.
- Beauchamp, M.R., Eys, M.A. (2008). *Group dynamics in exercise and sport psychology: Contemporary themes*. London/New York: Routledge Taylor & Francis Group.
- Bray, S.R. (2004). Collective efficacy, group goals, and group performance of a muscular endurance task. *Small Group Research*, 35, pp. 230-238.
- Carron, A.V., Brawley, L.R., Widmeyer, W. (1998). *The measurement of cohesiveness in sport groups*. In: J.L. Duda (ed.), *Advancements in sport and exercise psychology measurement*. Morgantown, WV: Fitness Information Technology, pp. 213-226

- Carron, A.V., Bray, S.R., Eys, M.A. (2002). Team cohesion and team success in sport. *Journal of Sports Sciences*, 20, pp. 119-126.
- Carron, A.V., Brawley, L.R., Eys, M.A., Bray, S. R., Colman, M.M., Dorsch, K. et al. (2003). Do individual perceptions of group cohesion reflect shared beliefs? An empirical analysis. *Small Group Research*, 34, pp. 468-496.
- Carron, A.V., Chelladurai, P. (1981). Cohesiveness as a factor in sport performance. *International Review of Sport Sociology*, 2 (16), pp. 21-43.
- Carron, A.V. et al. (2004). Using consensus as a criterion for groupness implications for the cohesion-group success relationship. *Small Group Research*, 35 (4), pp. 466-491. DOI: 10.1177/1046496404263923.
- Carron, A.V., Hausenblas, H.A., Eys, M.A. (2005). *Group dynamics in sport* (3rd ed.). Morgantown, WV: Fitness Information Technology.
- Carron, A.V., Widmeyer, W., Brawley, L.R. (1985). The development of an instrument to assess cohesion in sport teams: The group environment questionnaire. *Journal of Sport Psychology*, 7, pp. 244-266.
- Carron, A.V., Colman, M.M., Wheeler, J., Stevens, D. (2002). Cohesion and performance in sport: A meta analysis. *Journal of Sport & Exercise Psychology*, 24 (2), pp. 168-188, DOI: 10.1123/jsep.24.2.168
- Chelladurai, P. (1987). Multidimensionality and multiple perspectives of organizational effectiveness. *Journal of Sport Management*, 1, pp. 37-47.
- Eys, M., Ohlert, J., Evans, M.B., Wolf, S.A., Martin, L.J., Van Buussel, M., Steins, Ch. (2015). Cohesion and performance for female and male sport teams. *The Sport Psychologist*, 29, pp. 97-109.
- Feltz, D.L., Lirgg, C.D. (1998). Perceived team and player efficacy in hockey. *Journal of Applied Psychology*, 83, pp. 557-564.
- Feltz, D.L., Lirgg, C.D. (2001). *Self-efficacy beliefs of athletes, teams, and coaches*. In: R.N. Singer, H.A. Hausenblas, C. Janelle (eds.), *Handbook of sport psychology* (2nd edition). New York: Wiley, pp. 340-361.
- Filho, E., Dobersek, U., Gershgoren, L., Becker, B., Tenenbaum, G. (2014). The cohesion-performance relationship in sport: a 10-year retrospective meta-analysis. *Sport Sciences for Health*, 10, pp. 165-177.
- Filho, E., Tenenbaum, G., Yang, Y. (2015). Cohesion, team mental models, and collective efficacy: towards an integrated framework of team dynamics in sport. *Journal of Sports Sciences*, 33 (6), pp. 641-653.
- Gioldasis, A., Stavrou, N., Mitrotasios, M., Psychountaki, M. (2016). Cohesion and performance in soccer: A causal model. *Sport Science Review*, XXV (1-2), pp. 97-112.
- Greenlees, I.A., Graydon, J.K., Maynard, I.W. (1999). The impact of collective efficacy beliefs on effort and persistence in a group task. *Journal of Sports Sciences*, 17, pp. 151-158.
- Greenlees, I.A., Graydon, J.K., Maynard, I.W. (2000). The impact of individual efficacy beliefs on group goal selection and group goal commitment. *Journal of Sports Sciences*, 18, pp. 451-459.
- Hardy, J., Eys, M.A., Carron, A.V. (2005). Exploring the potential disadvantages of high cohesion in sports teams. *Small Group Research*, 36 (2), pp. 166-187.
- Hodges, L., Carron, A. (1992). Collective-efficacy and group performance. *International Journal of Sport Psychology*, 23, pp. 48-59.
- Hoigaard, R., Tofteland, I., Ommundsen, Y. (2006). The effect of team cohesion on social loafing in relay teams. *International Journal of Applied Sports Sciences*, 18 (1), pp. 59-73.
- Krawczyński, M. (1995). *Spójność grupowa a dojrzałość społeczna*. *Studia z psychologii sportu*. Gdańsk: Wydawnictwo Uczelniane AWF.
- Lichacz, F.M., Partington, J.T. (1996). Collective-efficacy and true performance. *International Journal of Sport Psychology*, 27, pp. 146-158.
- Martens, R., Peterson, J. (1971). Group cohesiveness as a determinant of success and member satisfaction in team performance. *International Review of Sport Sociology*, 6, pp. 49-71.
- Martinez-Santos, R., Ciruelos, O., (2013). Collective efficacy, cohesion and performance in Spanish amateur female basketball. *Revista de Psicología del Deporte*, 22 (1), pp. 235-238.
- Myers, N.D., Payment, C.A., Feltz, D.L. (2004). Reciprocal relationships between collective efficacy and team performance in women's ice hockey. *Group Dynamics: Theory, Research, and Practice*, 8 (3), pp. 182-195.
- Myers, N.D., Payment, C.A., Feltz, D.L. (2007). Regressing Team Performance on Collective Efficacy: Considerations of Temporal Proximity and Concordance. *Measurement in Physical Education and Exercise Science*, 11 (1), pp. 1-24.
- Pain, M.A., Harwood, C.G. (2008). The performance environment of the England youth soccer teams: A quantitative investigation. *Journal of Sports Sciences*, 26, pp. 1157-1169.
- Paskevich, D.M. (1995). *Conceptual and measurement factors of collective efficacy in its relationship to cohesion and performance outcome*. Unpublished doctoral dissertation, University of Waterloo, Waterloo, Canada.
- Pescosolido, A.T., Saavedra, R. (2012). Cohesion and sports teams: a review. *Small Group Research*, 43 (6), pp. 744-758, DOI: 10.1177/1046496412465020.
- Pijpers, J.R., Oudejans, R.R.D., Holsheimer, F., Bakker, F.C. (2003). Anxiety-performance relationships in climbing: A process-oriented approach. *Psychology of Sport and Exercise*, 4, pp. 283-304.
- Prapavessis, H., Carron, A.V. (1996). The effect of group cohesion on competitive state anxiety. *Journal of Sport and Exercise Psychology*, 18, pp. 64-74.
- Short, S.E., Sullivan, P., Feltz, D.L. (2005). Development and preliminary validation of the Collective Efficacy Questionnaire for Sport. *Measurement in Physical Education and Exercise Science*, 9, pp. 181-202.
- Walach-Biśta, Z. (2015). The construction and empirical verification of the Sense of Team Efficacy Questionnaire (Kwestionariusz Poczucia Drużynowej Skuteczności). *Baltic Journal of Health and Physical Activity*, 7 (1), pp. 14-28.
- Vealey, R.S. (2007). Mental skills training in sport. In: G. Tenenbaum, R.E. Eklund (eds.), *Handbook of sports psychology* (3rd ed). Hoboken, NJ: Wiley-Blackwell, pp. 278-309.
- Zaccaro, S. J., Blair, V., Peterson, C., Zazanis, M. (1995). *Collective-efficacy*. In: Maddux, J. E., (ed.), *Self-efficacy, adaptation and adjustment: Theory, research and application*. New York: Plenum, pp. 308-330.

