

Coach-athlete relationship and collective efficacy in volleyball: is the association explained by athletes' goal orientations

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ORIGINAL ARTICLE

ABSTRACT

The mediating role of goal orientations in the association between coach-athlete relationship (CAR) and collective efficacy (CE) was investigated. Participants were 185 Brazilian young volleyball players participants of a State championship. Data were obtained using the Coach-Athlete Relationship Questionnaire, Task and Ego Orientation in Sport Questionnaire and Collective Efficacy Questionnaire for Sports. Structural Equation Modeling revealed CAR had a moderate effect on task orientation. Task orientation was associated with CE. CAR had a positive effect on ego orientation. Ego orientation was not associated with CE. When the association between CAR and CE was mediated by task orientation, the relationship explained 27% of the CE variance. The results suggest that a good quality CAR allows athletes to be more focused on their goals and individual skill development, and, consequently, this type of focus allows the team to perform more effectively.

Keywords: group environment, social relationship, structural equation modeling.

INTRODUCTION

The Volleyball is one of the most popular team sports in the world and is practiced by millions of people. In high-performance volleyball, coach is a key factor in the process of team leadership, as he is primarily responsible for improving the collective work and the performance of his athletes during training and competitions (Santiago, Pires, Samulski, & Costa, 2016).

The belief of individuals that they can achieve their performance goals as part of a collective is central to the success of teams and thus a significant factor within group dynamics research (Jowett & Felton, 2014). Bandura (1986) proposed the concept of Collective Efficacy (CE) as an extension of self-efficacy theory, in an effort to explain choices, effort, and persistence in groups, defining it as “a group’s shared belief in

their conjoint capabilities to organize and execute courses of action required producing high levels of attainment” (p. 476). CE is affected by sources of such efficacy information as vicarious experiences, verbal persuasion, physiological/emotional states, and past performances (Bandura, 1986). More recently in sport research, it has been found that CE is specifically affected by such sources as performance in training or practice sessions, preparation effort and confident leadership (e.g., Chase, Feltz, & Lirgg, 2003), as well as during competitions through positive supportive communication (Fransen et al., 2012).

Past performance, whether in training or competitions, has been thought to be especially salient in competently and successfully completing a task as a collective (see Bandura,

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1986). In competitive sport, athletes often find themselves in situations where they have to overcome challenges as a collective in order to demonstrate superior team performance. A positive association has been found between CE and performance in various different sport teams (Chou, Yu, & Chi, 2010; Leo, Sánchez-Miguel, Sánchez-Oliva, Amado, & García, 2013; Myers, Feltz, & Short, 2004). Moreover, teams that are collectively efficacious have been found to set more challenging goals (Silver & Bufanio, 1996), exert more effort and persist more in adverse situations and are ultimately more successful (Greenlees, Graydon, & Maynard, 1999). To add to these positive associations, CE has been found to associate with team cohesion in many team sports (see Hampson & Jowett, 2014), including rugby (Kozub & McDonnell, 2000), and volleyball (Ramzaninezhad, Keshtan, Shahamat, & Kordshooli, 2009).

Despite CE being a relatively new construct in sport psychology literature, there is accumulative evidence to support its significant role for the optimal functioning of competitive sport teams. Nonetheless, there is a great deal of scope especially as it pertains to the role of CE within the context of the dyadic coach-athlete relationship. The coach-athlete relationship has been viewed as central in determining CE perceptions and performance accomplishments (Jowett & Shanmugam, 2016). Recent empirical studies have shown that the Coach-Athlete Relationship (CAR) is a determinant of CE (Jowett, Caccoulis, & Shanmugam, 2012; Hampson & Jowett, 2014), which in turn, has been associated with variations in sports performance (Myers, Vargas-Tonsing, & Feltz, 2005; Philippe & Seiler, 2006). However, although CAR has been reported as an important element to CE, there is still uncertainty regarding *how* the quality of the CAR maximizes a team's CE. To the best of our knowledge, no study has investigated the factors that are likely to explain the association between CAR and CE. Previous research findings suggest that CAR's influence on CE is, for example, augmented when associated with coaches' leadership behavior based on reinforcement, social support and training-instruction (Hampson & Jowett, 2014). Other

studies suggest that Goal Orientations (GOs) may play a role (Olympiou, Jowett, & Duda, 2008; Adie & Jowett, 2010). For example, findings seem to suggest that athletes with more task-oriented tendencies and less ego-oriented tendencies favored higher CE (Magyar, Feltz, & Simpson, 2004; Blecharz, Luszczynska, Tenenbaum, Scholz, & Cieslak, 2014). Specifically, Task Orientation (TO; emphasis on developing own skills, learning and improving) seemed to promote the notion of collaboration, which has been thought to be a necessary ingredient for greater CE (Blecharz et al., 2014). In contrast, Ego Orientation (EO; emphasis on winning, rivalry and outperforming others) seemed to diminish the notion of collaboration. Subsequently, an ego-oriented athlete is thought to be more concerned with his/her individual result and performance than with the team's success, affecting CE negatively (Jowett, Caccoulis, & Shanmugam, 2012).

Motivation has the potential to unlock an athlete's potential and a team's capability. The relevant literature in achievement goal theory (AGT; Nicholls, 1990) has identified the following dichotomy: TO versus EO. Correspondingly, AGT suggests that athletes with a TO are more adaptably motivated because they are less susceptible to the negative effects of failure as their ego is not dependent on the success of the task, but more so on improving their performance through improving skills, techniques, and strategies. In contrast, athletes with an EO are more maladapt motivated because their focus is on performing the task to boost their own ego, seeking the praise that completing the task might attract, or completing the task for confirming their own physical self-concept (e.g. competence).

Thus, EO athletes are more worried in the face of failure, because such failure questions their physical self-concept. Adie and Jowett (2010) found that a good quality CAR, as defined by athletes' perceptions of their coaches' closeness, commitment and complementarity relative to them, provided a valuable resource that allowed athletes to fully focus on striving for task mastery and personal improvement. Thus, athletes were equipped with the perception that the coach has

pledged their long-term support (i.e., commitment), appreciation and respect (i.e., closeness), and accessibility and responsiveness (i.e., complementarity) regardless of whether success or failure is experienced. Whereas a poor-quality CAR was found to disrupt athletes' concentration away from competence-based pursuits and to reorient athletes toward the possibility of failure (Adie & Jowett, 2010).

Guided by social learning theory (Bandura, 1986), this study postulated that CE is a behavior or a set of behaviors resulting from interactions between an individual and the social environmental characteristics. In sport, the quality of CAR creates an environment within which coaches and athletes are expected to interact. The dyadic coach-athlete relationship forms a social-relational environment in which coaches and athletes' interpersonal feelings of closeness (e.g., respect, trust, appreciation, liking), thoughts of commitment (e.g., investing, time, energy, effort, sacrificing), and behaviors of complementarity (e.g., being co-operative, receptive, responsive) are interconnected (Jowett & Shanmugam, 2016). Research has shown that this social-relational environment formulated because of the quality of the coach-athlete relationship influences perceptions of athletes' CE (Jowett, Shanmugam, & Caccoulis, 2012; Hampson & Jowett, 2014). However, the reasons for the association between CAR and CE are still unknown.

Thus, the aim of this study was to investigate whether goal orientations can explain the association between the CAR and CE among volleyball athletes. In this research, it was speculated that athletes' TO and EO may be able to explain how the quality of the CAR increases or decreases CE in volleyball. Fransen et al. (2012) described that "volleyball offers an interesting sport context for exploring the sources of CE" (p. 642) because this team sport requires continuous interaction between players and thus individual players' performance depends on the rest of the team. With Fransen and colleagues' rationale in mind, this study was set out to examine the following hypotheses in a sample of Brazilian high performing volleyball players: e (a) CE is associated with both CAR and

GOs (H1); (b) good quality CARs increases CE because good quality CAR are more likely to TO (H2); and (c) poor quality CAR diminishes CE because poor quality CAR are more likely to EO (H3).

METHOD

Participants

Participants consisted of all athletes from the 16 teams' participants of Parana's State Championship Under 18 in 2014, totaling 185 male (n=95) and female (n=90) subjects. Athletes were 17.27 ± 1.25 years old and had 4.0 ± 2.38 years of experience in the sport. This criterion ensured that all participants were high performance athletes and excluded recreational sport participants. The *Bootstrapping* replication technique (MacCallum, Browne, & Sugawara, 1996) was used to verify the sample adequacy for the analysis.

Measures

Goals Orientation (GOs)

GOs were assessed using the Task and Ego Orientation in Sport Questionnaire (TEOSQ), validated to Brazilian context (Goulart, Rose, & Rezende, 2007). It consists of 16 items and assesses two subscales: TO and EO. Answers are given on a five-point Likert type scale (1 = strongly disagree to 5 = strongly agree). Averages of the results for each dimension were added to the analysis as observed variables. Confirmatory factorial analysis (CFA) showed acceptable fit [$X^2(100) = 164.77$; $X^2 / df = 1.65$; CFI = 0.92; GFI = 0.90; RMSEA = 0.05; P (RMSEA < 0.05) = 0.16], attesting TEOSQ's applicability to our sample. Composite Reliability (CR) for internal consistency was satisfactory (Task Orientation = 0.78; Ego Orientation = 0.80).

Collective Efficacy (CE)

To measure the athlete's perception of CE, the Collective Efficacy Questionnaire for Sports (CEQS), Brazilian validated version (Paes, 2014) was employed. It consists of 20 items and assesses five subscales: Skill, Effort, Persistence, Union and Preparation. Answers are given on a nine-point Likert type scale (1 = not confident to 9 = extremely confident). Averages of the results

for each dimension were added to the analysis as observed variables. CFA showed acceptable fit [X^2 (159) = 343.74; X^2 / df = 2.16; CFI = 0.90; GFI = 0.90; RMSEA = 0.08; P (RMSEA <0.05) = 0.07], attesting the scale's applicability to our sample. CR for internal consistency WAS satisfactory (Skill = 0.83; Effort = 0.81; Persistence = 0.80; Unity = 0.77; Preparation = 0.75).

Coach-Athlete Relationship (CAR)

CAR's quality was measured using the Coach-Athlete Relationship Questionnaire (CART-Q) - Athlete Version validated for Brazil by Vieira et al. (2015). It consists of 11 items divided into three subscales: Closeness, Commitment and Complementarity. Answers are given on a seven-point Likert type scale (1 = strongly disagree to 7 = strongly agree). Averages of the results for each dimension were added to the analysis as observed variables. CFA showed acceptable fit [X^2 (36) = 69.93; X^2 / df = 2.18; CFI = 0.94; GFI = 0.93; RMSEA = 0.08], attesting CART-Q's applicability to our sample. CR for internal consistency was satisfactory (Closeness = 0.85; Commitment = 0.72; Complementarity = 0.83).

Procedures

The procedures adopted in this research obeyed the Criteria of Ethics in Research with Human Beings according to Resolution no. 466/12 of the National Health Council. The research is integrated into an institutional project approved by the Ethic Committee in Human Research (Process n° 339.11). Initially, we contacted the Paraná's Federation of Volleyball (PFV) board in order to outline the procedures of this research. After the approval from PFV, teams' managers and head coaches were contacted to schedule dates for data collection during the State level Championship 2014. Questionnaires were answered at the competition venue, after signing an informed consent, with an average duration of 30 minutes.

Statistical analysis

Preliminary data analysis was performed using *Anderson-Darling* normality test and, once normality was violated, descriptive statistics were

presented as median (Md) and interquartile range (Q1-Q3). Spearman correlations were calculated to examine relationships between observed variables. Outliers verification were assessed by Square Mahalanobis Distance (D2), since the absence of such cases is a prerequisite for this analysis. It was also verified multivariate distribution normality (Mardia coefficient for multivariate kurtosis) (Kline, 2012).

Main analysis involved Structural Equation Modeling (SEM), which was used to test the hypotheses (H1, H2 and H3) described by the conceptual model, evaluating the mediating role of GOs on the association between CAR and CE among volleyball players. Thus, according to the literature and preliminary analysis, we proposed a model with two latent factors (CAR and CE), which were adjusted from the dimensions of each questionnaire, considered as observed variables in the model.

SEM was tested following the *jigsaw stepwise technique* (Bollen & Long, 1993). Initially, Exploratory Factor Analyses (EFA) were carried out separately to verify the existence of latent variables for the CAR and CE constructs. EFA was calculated using Unweighted Least Squares (ULS) method of estimation, through an oblique rotation (Oblimin) to predict the correlation between variables. Factor loadings higher than 0.40 were considered acceptable (Hair, Black, Babin, Anderson, & Tatham, 2014). Models developed using EFA were then tested separately with CFA. CFA was estimated by ULS, adopting factor loadings higher than 0.50 as acceptable (Hair et al., 2014). Subsequently, each tested and previously validated sub-model is inserted into the model using the stepwise method, thus building a puzzle (*jigsaw*) (Bollen & Long, 1993). Initially, we tested: (a) a SEM with CAR and CE latent variables, and then we included the variables (b) TO and (c) EO separately and finally the two of them together (d), to assess the mediating effect (Kline, 2012).

Model fit indicators were: Chi-Square; X^2/df (values between 1.0 e 3.0 are satisfactory); RMSEA (values below to 0.08 are considered as adequate fit); GFI/AGFI (values close to .95-.90 are interpreted as acceptable fit); CFI (values close to .95-.90 are accepted as good fit); and

AIC/BIC/MECVI (lower values indicate better model) (Kline, 2012).

The hypothetical model tested the mediating role of GOs (TO and EO) on the association between CAR and CE among volleyball players. Based on Kline's recommendations (2012), path interpretation had as reference: small effect for factor loadings <0.20 ; medium effect for factor loadings up to 0.49 ; and big effect for factor loadings >0.50 ($p < 0.05$). We have also estimated the significance of the mediation effect by performing a Bias Corrected (BC) bootstrap method for establishing confidence intervals (CI 90%). All analyses were performed with R Language for statistical programming v. 3.02.

RESULTS

Descriptive Analysis and Internal Reliability

The three dimensions of the CAR (Closeness, Commitment and Complementarity) related positively with TO ($r = .38$, $r = .40$ and $r = .44$, respectively); complementarity was the only one to correlate with EO ($r = .24$). It was also found that CAR dimensions were significantly correlated to the following subscales of CE: Ability ($r = .41$, $r = .30$; $r = .32$), Effort ($r = .40$, $r = .32$; $r = .37$), Persistence ($r = .26$, $r = .24$; $r = .23$), Union ($r = .28$, $r = .32$; except Commitment) and Preparation ($r = .39$; $r = .37$; $r = .34$). TO correlated significantly to the

following subscales of CE: Ability ($r = .39$), Effort ($r = .37$), Persistence ($r = .33$), Union ($r = .27$) and Preparation ($r = .39$); EO correlated only with the Ability ($r = .17$).

Measurement Model

To define the latent models that would compose the SEM, it was necessary to validate the latent variables CE and CAR (Step 1). For both latent variables, EFA suggested retention of 1 or 2 factors from the correlation matrix analysis (eigenvalues, parallel analysis and scree plot). Kaiser-Meyer-Olkin (KMO) coefficients (.85 and .89, respectively) and Bartlett analysis ($p < .05$) ensured the reliability of exploratory factor models. EFA designs for 1 factor were acceptable for CE (explaining the 60% data variance, with factor loadings ranging from .72 to .82) and CAR (explaining the 75% variance, with factor loadings from .84 to .92). The latent variables CE and CAR were tested by CFA from the exploratory factor model, presenting a satisfactory fit indicators for both models (CFI = .99; TLI = .99; SRMR = .02; RMSEA = .02; and CFI = .95; TLI = .98; RMSEA = .03; SRMR = .04, respectively for CE and CAR) and significant paths ($p < .05$). This evidence allowed the insertion of the latent model CAR and CE in SEM analysis.

Table 1

Median (interquartile range), internal consistency and correlation between Collective Efficacy (1-5), Goals Orientation (6-7) and Coach-Athlete Relationship (8-10)

	Md (Q1;Q3)	Alpha	2	3	4	5	6	7	8	9	10
1.Ability	7.50 (6.50;8.25)	.85	.61**	.59**	.55**	.65**	.17*	.39**	.32**	.41**	.30**
2.Effort	8.00 (7.25;8.50)	.72	-	.66**	.63**	.63**	.05	.37**	.37**	.40**	.32**
3.Persistence	7.75 (7.00;8.25)	.68		-	.65**	.58**	.10	.33**	.23**	.26**	.24**
4.Union	7.50 (6.75;8.25)	.69			-	.54**	-.03	.27**	.23**	.28**	.19**
5.Preparation	7.75 (6.75;8.50)	.69				-	.04	.39**	.34**	.39**	.37**
6. Ego	2.11 (1.67;2.67)	.68					-	.26**	.13	.01	.24**
7.Task	3.89 (3.56;4.11)	.86						-	.44**	.38**	.40**
8.Complement.	6.00 (5.50;6.50)	.72							-	.55**	.57**
9.Closeness	6.67 (6.33;7.00)	.73								-	.53**
10.Commitment	5.67 (4.67;6.33)	.65									-

Note. ** $p < 0.01$

Structural Equation Modeling

Initially, we tested a model without mediation, only with direct paths from CAR toward CE (M1). This model showed adequate fit indicators (RMSEA = .07, GFI = .96, AGFI = .91,

CFI = .98, TLI = .97, AIC = 69.52, BIC = -57.13), explaining the 17.1% variance of CE (Table 2). TO was used in the second model (M2) as the mediator variable of CAR effect on CE (CAR \rightarrow TO and TO \rightarrow CE). The model was fit to the

suitability criteria (RMSEA = .04, GFI = .96, AGFI = .92, CFI = .99, TLI = .98), with significant paths indicating a moderate and positive mediating effect of TO. The use of the mediating variable improved the model, explaining the 25.2% variance of CE, maintaining the positive effect of CAR on CE.

The third model (M3) verified the mediating effect of EO on the explanatory model (CAR path

to EO and EO to CE). The model showed adequate fit indicators (RMSEA = .08, GFI = .94, AGFI = .90, CFI = .96, TLI = .94), but lower than those observed in M2. There was no evidence of EO as a mediating variable between CAR and CE. Furthermore, M3 reduced the capacity of explaining CE variance. All other paths remained significant, with CAR having a positive effect on CE.

Table 2
Comparison of SEM models' fit indicators

Comparison between models	M1	M2	M3	M4*
	No Mediation	TO Mediation	EO Mediation	TO+EO Mediation
X ² /df (P-value)	31.57/17 (.017)	32.79/23 (.084)	50.06/23 (.001)	52.92/29 (.004)
GFI/AGFI	.96/.91	.96/.92	.94/.90	.95/.90
SRMR	.06	.06	0.07	0.06
RMSEA (C.I. 95%)	.07 (.03-.10)	.04 (.00-.08)	.08 (.05-.11)	.07 (.04-.09)
TLI	.97	.98	.94	.95
CFI	.98	.99	.96	.97
AIC/BIC	69.52/-57.13	76.78/-87.16	94.05/-69.89	104.92/-98.31
% CE Var. Explained	17.1	25.2	20.6	27.0

Finally, both GO variables (TO → EO) were used in the fourth tested model (M4) as mediating variables (Figure 1) to obtain the appropriate fit indicators (RMSEA = .07, GFI = .95, AGFI = .90, CFI = .97, TLI = .95). TO behaved the same in M4 as it did M2, when it was the mediator variable, although the fit indicators being slightly lower (Table 2). Similarly, EO did

not appear as a mediating variable in M4, even when used simultaneously with TO. Taking in consideration the good adequacy indicators, the sufficient and significant factor loadings (p < .01), and the capacity of the model to explain the CE variance (27%) when compared to M2, we decided to maintain M4 as the final model.

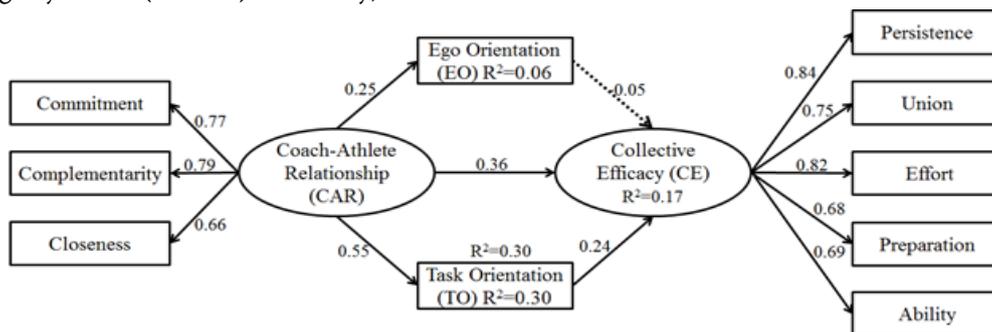


Figure 1. Structural Model of the mediating role of GO on the association between CAR and CE. → = significant; →→ = non-significant

When analyzing the paths coefficients of the explanatory model (Figure 1), the CAR had an average effect (positive) on TO (.55) explaining its 30% variance. TO also showed an average effect (.24) on CE. CAR had a positive effect (.25) on EO, but with a low percentage of prediction (Table 3), explaining its 6% variance. EO, in turn, did not show a significant path towards CE. Thus, CAR mediated by TO explained the 27% variance

of CE. TO mediating role on the association between CAR and CE was observed through the standardized indirect effect (FL = .12), showing that, when mediated by TO, CAR can be considered an important element in improving the athletes' perception of CE, which is confirmed by the confidence intervals (CIs) (Table 3).

Table 3

Direct and indirect standardized effects from the replication analysis with Bootstrapping

Endogenous Variables	Exogenous Variables	Direct	CI 95%	P	Indirect	CI 95%	P
CE	CAR	.36	(.24-.85)	.001	.12	(.04; .21)	.01
	TO	.24	(.18-.86)	.020			
TO	CAR	.55	(.24-.45)	.001			
EO	CAR	.25	(.08-.39)	.014			

DISCUSSION

This study explored the mechanism by which CAR and CE were associated. It was speculated athletes' TO and EO were able to explain how the quality of the CAR increases or decreases CE in a sample of Brazilian volleyball players. CAR was associated with both CE and GOs, supporting the initial hypothesis (H1). These findings indicate that a good quality relationship as defined by interpersonal feelings of respect and trust, thoughts of maintaining a close bond over time, as well as behaviors that are co-operative and collaborative has the capacity to promote athletes' perceptions that the team has the capabilities to produce a high level of performance (Jowett, Shanmugam, & Caccoulis, 2012; Hampson & Jowett, 2014).

Moreover, it was also evidenced that TO was capable to explain the association between CAR and CE supporting the subsequent hypothesis (H2). In fact, this finding indicated that TO improved CAR capacity to explain 27% variability on CE. It is thus possible to suggest that the coach-athlete relationship creates a social-relational environment in which athletes can adopt TOs and thus readily focus on and commit to developing their skills, improving their performance, learning new strategies and techniques (Olympiou, Jowett, & Duda, 2008; Adie & Jowett, 2010). It would seem that this attitude towards mastery growth or task progress along with the quality of the CAR, favor the perception of the group's ability to organize themselves and perform tasks collectively and successfully (Jowett, Shanmugam, & Caccoulis, 2012). This result has practical significance for competitive sport, high performing teams, as well as coaches and athletes because CE is directly linked to sports performance (Heuzé, Raimbault, & Fontayne, 2006). Specifically, in a

sport like volleyball, this finding has practical relevance since the success in a "rally" depends on the efficiency of technical abilities of more than one player (Fransen et al., 2012).

In contrast, EO did not mediate the association of CAR and CE, refuting the last hypothesis (H3). While it was hypothesized that the EO is more than likely to undermine CE, especially if coaches and athletes operated within a social-relational environment characterized by lack of trust, respect, appreciation, strong bonds, commitment and co-operation, this finding may make sense. In this study, we found that the quality of the coach-athlete relationship of the sample we examined was more positive than negative and that these good quality relationships were positively associated with athletes with EOs on the whole, suggesting that according to the athletes' perceptions they are valuable members for their coaches and potentially for their teams. Specifically, EO correlated moderately and significantly with "commitment" of CAR and with "ability" of CE (see Table 1). This indicates that athletes who are EO, although little-oriented towards collective aspects, seem to believe they have a lasting and committed relationship with their coach and that they are able to help their team with the necessary skills to beat the opposing team (see also Jowett, Shanmugam, & Caccoulis, 2012). It makes for an interesting case if the quality of the coach-athlete relationship was characterized by conflict in terms of misunderstandings and disagreements coupled with athletes whose orientation was more ego than task. Future research is warranted.

In the mediational analysis, the association between EO and CE was not upheld. This finding may suggest that overall, athletes with EO did not affect (positively or negatively) the capability

of the team to perform competently. This lack of association has been found in a handful of studies that have investigated the link GO and CE (Magyar, Feltz, & Simpson, 2004; Heuzé, Raimbault, & Fontayne, 2006); none of these studies found significant associations between EO and CE, though significant positive associations have been found between TO and CE. There are a couple of explanations for this finding. First, a *small* number of ego-oriented athletes may not necessarily harm the team – may in fact be valuable as they may enhance the team’s competitive edge or may create a competitive team culture where each and every one has to work hard to continuously improve in order to secure a place in the team. Often, securing a place in the team does mean outperforming others (within the same team) through being concerned with their own individual progress and performance. However, a team comprising a *large* number of ego-oriented athletes may have a negative effect on the collective, as well as on the way these individuals collaborate and cooperate (cf. Magyar, Feltz, & Simpson, 2004). A large number of ego-oriented athletes may also require more time, effort, energy and other resources from coaches in order to effectively manage relationships, training and competition issues among others. If such resources are not in place, then the most likely outcome is collective failure and this has been demonstrated. At the Olympic Games in Athens 2004, US basketball team known as a “dream team” due to its composition (NBA All-Stars) found themselves losing or coming close to losing games from countries one wouldn’t expect them resulting in achieving a mere third place and bronze medal due to no chemistry and very little commitment by the world best players.

Although EO did not explain the association between CAR and CE, its inclusion was relevant in the analysis of the explanatory model, as it increased the ratio of the CAR and CE. When the model only tested TO as a mediator, the influence of CAR explained approximately 25% of CE variance; however, when EO was included in the same model, this variance rose to 27%, although EO did not present a significant mediator path (Figure 2). These findings may

reflect that in the real world, it is very unlikely to have only TO or EO individuals and thus a combination or the mixture of two orientations may be useful in the dynamics of collective teams. Considering our findings and previous studies (eg, Amaral & Cruz, 2013), the way athletes orient their motivation seems to be associated to their emotional regulation. As suggested by some authors (e.g., Magyar et al., 2004; Amado Cordeiro, Martins, & Costa-Lobo, 2017), it was also found in this research both EO and TO may enhance the levels of collective work. However, these evidences are not consistent in the literature, since some studies report that high performance is associated only with TO, especially among high performance athletes (Nicholls, 1984; Amado Cordeiro, Martins, & Costa-Lobo, 2017).

In turn, all the CAR and CE dimensions showed correlations with the variable TO, corroborating our findings (Figure 2) as well as the hypothesis that the team is strengthened by CAR and TO quality (Magyar et al., 2004).

Despite the contributions of the findings of this study to the literature, some limitations need to be addressed. First, the scope of this study was restricted only to the state of Paraná, and may not represent the entire population of Brazilian athletes. However, these teams are the best in the state ranking in the sport of volleyball and participate in several recognized national competitions. In addition, all teams recruited for this study have athletes from different parts of the country, capturing a representative sample within the sport of volleyball. Another limitation is related to the moderate size of our sample. However, replications with bootstrapping through the Monte Carlo method allow us to verify the path significance and stability, as well as the fit model indicators in moderate samples, as is the case of this study (MacCallum, Browne, & Sugawara, 1996). Another limitation is related to the characteristic of cross-sectional studies, which do not allow causal inferences. Perhaps a longitudinal study would help elucidate the causal nature of the association between the dimensions of CAR and CE mediated by GO. Finally, this study only examined the CAR from the athletes’ perception. It would be important if

the variables of this study could also be evaluated from the coaches' viewpoint in an attempt to glean whether athletes and coaches' perceptions are co-orientated or not. Another suggestion would be to approach the association from a team perspective investigating to what extent group specific indicators affect these variables. Consequently, a multi-group, either dyadic or team, research design would further develop our understanding of the current findings. The limitations of this study provide opportunities for further exploration.

While previous findings supported the associations between CAR and CE (Jowett, Shanmugam, & Caccoulis, 2012; Hampson & Jowett, 2014), there had been no research to explain the ways CAR and CE were associated. This study's findings highlighted that, on one hand, TO is more likely to predict CE and, on the other hand, EO is not likely to predict CE. Subsequently, it is possible that a team comprising of athletes who are predominantly TO as opposed to EO will be the difference between team success and team failure. It further highlighted differences in both TO and EO may be a consequence of the social-relational environment developed via the dyadic coach-athlete relationship (cf. Bandura, 1986). From a practical point of view, the findings would seem to suggest that coaches should strive to promote good quality relationships with each one athlete in the team as such relational properties as trust, respect, appreciation, strong bonds, commitment, collaboration and co-operation support athletes toward focusing on and committing to developing their own skills and on continuously striving to personally improve while enjoying the process of learning within the context of competitive team sport.

CONCLUSION

It is concluded that a good quality CAR allows athletes to be more focused on their goals and individual skill development, and, consequently, this type of focus allows the team to perform more effectively. This study has some theoretical and practical implications for coaches and athletes who operate within team sports. A good relationship between a coach and an athlete can

enhance CE, as the relationship formulated seems to create a positive social-relational environment for all the athletes in the team. The practical significance of the dyadic CAR in team sports is in its power to facilitate adjusted and healthy interpersonal behavior from each individual in a team and effective interpersonal exchanges as part of a team where personal improvement and skill development are at its heart. Thus, this study paves the way for the development of interventions that aim to enhance the awareness of coaches and athletes in building good quality relationships and social-relational environments characterized by dependency, loyalty, admiration, responsibility, allegiance, partnership, and teamwork. Especially for all those involved in group dynamics development, these findings bring to light the importance of emphasizing and enhancing coaches and athletes' interpersonal skills as they can be a proxy to performance outcomes.

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Conflict of interests:

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