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REVISION

Authentic leadership and task cohesion: The mediating role of trust and team sacrifice

Comille Bandura, Maria Kavussanu, & Chin W. Ong

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Abstract

Objective: A large body of literature has examined the consequences of various leadership styles. However, the concept of authentic leadership has received little attention. In this study, we investigated whether authentic leadership predicted task cohesion and whether trust and team sacrifice mediated this relationship.

Method: A total of 338 (M_{age} =19.96, SD = 2.14) team sport athletes completed questionnaires assessing the aforementioned variables.

Results: Multilevel Structural Equation Modeling (MSEM) indicated that authentic leadership positively predicted task cohesion and this relationship was mediated by both trust and team sacrifice.

Conclusions: Our findings draw attention to the importance of authentic leadership and highlight the role of trust and team sacrifice on the identified relationships.

Keywords: cohesion, authenticity, integrity, teambuilding, group dynamics

Highlights and Implications

- Athletes who perceived their coach to be an authentic leader indicated high levels of task cohesion.
- Trust and team sacrifice may explain the relationship between athletes' perceptions of authentic leadership and task cohesion.
- Coaches are encouraged to be authentic leaders as this style of leadership could influence task cohesion within the team.

Authentic leadership and task cohesion: The mediating role of trust and team sacrifice

Due to the importance of leader behaviour in the success of organizations, a lot of interest focusing on positive approaches to leadership has been evident in recent years, as reflected in the large number of proposed leadership models (see Hoch, Bommer, Dulebohn & Wu, 2018 for a review). In the organizational context of sport, in particular, there has been a resurgence in leadership research over the past decade (Morton, 2016). This is in response to the need to understand the interactions between coaches and their athletes and how these influence group processes which underpin optimal performance in teams (Morton, 2016). In this study, we examined whether a relatively new model of leadership, namely authentic leadership (Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008) is related to task cohesion in team sport and the processes through which authentic leadership may influence task cohesion.

Authentic leadership has been defined as a ‘‘pattern of leader behavior that draws upon and promotes both positive psychological capabilities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers; fostering positive self-development’’ (Walumbwa et al., 2008, p. 94). Walumbwa and colleagues (2008) posit that authentic leadership comprises four related dimensions: self-awareness, internalized moral perspective, relational transparency, and balanced processing.

Self-awareness refers to the extent to which a leader possesses accurate self-knowledge and uses that knowledge to demonstrate he or she is cognizant of his or her impact on others. Internalized moral perspective pertains to the extent to which leaders’ behaviors are directed by, and are congruent with, their personal values and moral standards. It represents a form of self-regulation which allows leaders to engage in ethical conduct even against external pressures (e.g., group, organizational, societal pressures). Relational

transparency is a leader's presentation of their true thoughts and emotions in an open and transparent manner versus being fake or manipulative, while balanced processing is evident when a leader who objectively considers and analyses all relevant information before making decisions (see Walumbwa et al., 2008).

Demonstrating behavior that shows consistency between words and actions is a key feature of authentic leaders' ability to develop positive environments (Rego, Sousa, Marques, & Cunha, 2014). Such positive environments give direction to followers about how to remain engaged emotionally, physically and cognitively (Avolio & Gardner, 2005; Braun & Nierberle, 2017; Gardner, Cogliser, Davis, & Dickens, 2011). Another defining trait of authentic leaders is their ability to foster development and excellence among followers (Leroy et al., 2015). Thus, authentic leadership represents a process of influence through leader behavior aimed at positive follower development (Leroy, Anseel, Gardner, & Sels, 2015; Sagnak & Kuruoz, 2016).

Empirical evidence from a range of samples, sectors, and countries provides support for the idea that leaders who are seen to be authentic (in ways consistent with the above definition) are also effective in the sense that they can mobilize followers' energies to enhance group and organizational success. For instance, research has shown that followers' perceptions of authentic leadership are positively related to organizational performance, job satisfaction, satisfaction with leader, trust, work engagement, commitment, psychological capital, team climate, team performance, and team reflexivity (e.g., Avolio & Walumbwa, 2014; Lyubovnikova, Legood, Turner, & Mamakouka, 2017; Walumbwa et al., 2008).

Although many studies (see Gardner, Cogliser, Davis, & Dickens 2011 for a review) have examined authentic leadership in business and other organizational settings, very little research has been conducted in sport. This research shows that athletes' perceptions of their coaches' authentic leadership were positively related to trust in coach, commitment, enjoy-

ment and autonomy (Bandura & Kavussanu, 2018). These findings demonstrate that authentic leadership is relevant in the context of sport and therefore warrants further research.

Authentic leadership could influence task cohesion, which involves team cooperation toward achieving performance goals within practice and competition environments (Eys, Loughead, Bray, & Carron, 2009a, 2009b). Authentic leaders accommodate individual differences, which can blend talents of individuals into a high-task cohesive team (Gardner et al., 2011). Peus and colleagues (2012) showed that promoting diverse behaviors related to the bond among group members and was a major factor in developing task cohesion in followers. Authentic leadership is characterized with an alignment between leader-follower goals and self-development (Walumbwa et al., 2008). Therefore, if teammates accept team goals and are encouraged to work together, it is likely that task cohesion will increase as athletes strive toward achieving these common goals.[1] Indeed, one study found that authentic leadership was positively associated with task cohesion in sport teams (Houchin, 2011). However, the process through which authentic leadership may influence task cohesion has not been examined.

This may occur in part via trust, which has been defined as athletes' perceptions of the integrity, credibility, and benevolence of a coach (Dirks, 2000). Authentic behavior creates transparent two-way relationships through positive social exchanges (Walumbwa et al., 2008). It is reasonable to expect that athletes would trust their coach if he/she manifests positive values, shows integrity consistently, is transparent, and accountable. Previous research found an indirect relationship between authentic leadership and athletes' commitment and satisfaction via trust (Bandura & Kavussanu, 2018). Given that authentic leadership is characterized by behaviors related to creating high-quality relationships that bond groups, it is reasonable to expect that if a coach is perceived to be authentic, athletes are more likely to trust the coach and this may enhance the task cohesion within the team.

Therefore, we expected that trust would mediate the relationship between authentic leadership and task cohesion.

In their model, Walumbwa and colleagues (2008) propose that authentic leadership would lead to team sacrifice, defined as "group members voluntarily initiating an action or giving up prerogative or privilege for the sake of another person or persons" (Prapavessis & Carron, 1997, p. 231). Prapavessis and Carron (1997) conceptualized sacrifice behaviors as involving social sacrifice (i.e., sacrifices athletes make in their social lives), outside sacrifice (i.e., sacrifices athletes make in their personal lives), and inside sacrifice (i.e., sacrifices athletes make in practice and competition). In addition, they proposed that inside sacrifice involves both personal (e.g., sacrifices I make) and team (e.g., sacrifices my teammates make) sacrifice. In this study we focus on team sacrifice given that authentic leaders encourage their followers to sacrifice their own interests to satisfy the collective (Valsania, Leon, Alonso, & Cantisano, 2012).

Although no study has examined authentic leadership and team sacrifice in sport, some research in organizational psychology provides evidence for the link between the two variables. Organizational citizenship behaviors are similar to team sacrifice as they both involve engaging in behaviors that go unrewarded but promote the functioning of the group. Two studies reported a positive relationship between authentic leadership and organizational citizenship behaviors (Valsania et al., 2012; Walumbwa et al., 2008). This research suggests that if a coach treats each athlete as an individual and supports his or her personal development, this could motivate the athlete to make sacrifices for the team (Walumbwa et al., 2008). It is reasonable to expect that if a team has a shared identity with goals and values because a coach is transparent, consistent and involves athletes in decision making, athletes are more likely to make sacrifices. Authentic leadership is also characterized by positive role modeling via self-awareness and internalized moral perspective (e.g., commitment to

followers) (Emuwa, 2013), which could serve as a model for the sacrifices expected of athletes.

Drawing on Prapavessis, Carron, and Spink's (1997) conceptual model of team building, authentic leadership could also be linked with task cohesion through sacrifice. It is reasonable to suggest that since authentic leaders create bonds among group members, if "a participant is asked to give up something of value for his/her group becomes, because of this sacrifice, more attracted to that body" (Zander, 1985, p. 7). Given that task cohesion also involves an athlete's attraction to his or her team (Widmeyer, Brawley, & Carron, 1985), athletes making sacrifices for their team could experience higher task cohesion within that team. Team sacrifice is related to helping behavior, loyalty, and virtue (Valsania et al., 2012). In sport research, sacrifices have been positively related to task cohesion (Cronin, Arthur, Hardy, & Callow, 2015; Prapavessis & Carron, 1997). Both team sacrifice, and task cohesion have salience to the specific context of practice and competition in sport (Cronin et al., 2015). Therefore, we expect team sacrifice to mediate the relationship between authentic leadership and task cohesion.

The purpose of this study was to examine whether authentic leadership in sport teams is related to task cohesion indirectly through trust in the coach and team sacrifice. We hypothesized that coach authentic leadership would (a) positively predict task cohesion via trust (e.g., Bandura & Kavussanu, 2018; Houchin, 2011) and (b) positively predict task cohesion via team sacrifice (Walumbwa et al., 2008). We also examined whether the relationship between authentic leadership and task cohesion via trust and team sacrifice would be different in male and female athletes. Previous research suggests potential gender differences in these relationships. For example, in one study, although both male and female followers perceived authentic leaders as contributing to a positive work climate, the contribution was perceived as greater by male followers (Braun & Nieberle, 2017).

Method

Participants

Participants were 338 athletes who competed in the British Universities and Colleges Sport (BUCS) league at the time of data collection. Athletes competed for the same University in a variety of team sports (netball *n* = 55, hockey *n* = 51, rugby union *n* =31, rugby league *n* = 26, cricket n = 26, American football n = 25, football *n* = 22, Gaelic football *n* = 19, waterpolo *n* = 18, dodgeball *n* = 15, korfball *n* = 15, basketball *n* = 13, ice hockey *n* = 12, volleyball *n* = 10). Two athletes' responses (Gaelic football and American football) were removed as they were the only ones in their team who rated their coach. Consequently, the final sample consisted of 336 athletes aged between 18-44 years (M_{age} = 19.96, *SD* = 2.14) who rated coaches (29 % female) from 25 teams ($M_{team\ size}$ = 13.4 athletes). The sample included both female (*n* = 172) and male (*n* = 164) athletes. Two hundred and forty athletes had a male coach and 96 athletes had a female coach, played for their current team for a mean of 1.66 years (*SD* = .92) and played for their current coach for 1.61 seasons (*SD* = .95). BUCS consists of two regional leagues and each sport can have up to four teams according to athletic ability from the same university or college competing. Data were collected across a five-month (October to February) period when teams where actively involved in training and competition.

Measures

Authentic leadership. Authentic leadership in sport was measured using an adapted version of the 16-item Authentic Leadership Questionnaire that assesses the four dimensions (Walumbwa et al., 2008). The stem "My coach…." was used before each statement. Example items included "encourages everyone to speak their mind" (relational transparency, five items), "demonstrates beliefs that are consistent with actions" and "makes decisions based on high standards of ethical conduct" (internalized moral perspective, four items), "seeks

feedback to improve interactions with players" (balanced processing, three items), and "shows he or she understands how specific actions impact others" (self-awareness, four items). Participants were asked to respond to each statement regarding their coach's leadership style on a scale ranging from 1 (*not at all*) to 5 (*frequently, if not always*). McDowell and colleagues (2018) have provided evidence of the internal consistency of the scale, α = .92.

Trust. The Trust in Leader questionnaire developed by McAllister (1995) and adapted to sports settings by Dirks (2000) was utilized to measure perceptions of athletes' trust in their coach. The scale consists of nine items, and example items are: "I trust and respect my coach" and "Other players consider my coach to be trustworthy". Participants were asked to think about their experiences with their coach, and to indicate their level of agreement with each statement on a Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The scale demonstrated adequate internal consistency for the trust questionnaire (α =.83; McAllister, 1995) and the adapted version for sport (α = .92; Dirks, 2000).

Team sacrifice. Athletes' perceptions of sacrifice were measured using the 8 -item subscale of the Group Sacrifice Scale (GSS; Prapavessis & Carron, 1997). Examples included "My teammates are willing to put aside their own personal goals if they conflict with the team's goal" and "My teammates are willing to adopt a style of play not suited to their talents for the good of the team." Participants were asked to indicate the degree to which they agreed with each statement on a scale ranging from 1 (*strongly disagree*) to 9 (*strongly agree*). Cronin et al. (2015) have provided evidence of the internal reliability for teammate sacrifice, α = .90.

Task cohesion. Task cohesion was measured using the 9-item Group Environment Questionnaire (Eys, Carron, Bray, & Brawley, 2007). Task cohesion is typically assessed

across two dimensions with perceptions of attractions to task aspects of the group (ATG-T) and group's integration regarding task objectives (GI-T). Example items include "I like the style of play of this team" and "We all take responsibility for any loss or poor performance by our team." Participants were asked to assess their perceptions of their current team. Each item was scored on a scale ranging from 1 (*strongly disagree*) to 9 (*strongly agree*). The psychometric properties of task cohesion as a subscale of the Group Environment Questionnaire have repeatedly been verified (see Eys & Evans, 2018). The reliability of task cohesion has been shown to be acceptable, $\alpha = .84$ (McLaren & Spink, 2018).

Procedure

Ethical approval to conduct this study was granted by the investigators' University School ethics committee. Head coaches were initially contacted by phone, email, or post with a brief description of the study purpose and permission to approach their athletes. Coaches then received a follow-up letter via post or email reiterating the purpose of the study, procedures for confidentiality, and example items to be used in the questionnaire pack. Upon receiving permission from the coach, athletes were approached by the primary investigator prior to, or after a training session at their practice location (e.g., swimming pool, sports hall, field). Prior to completing the questionnaires, the athletes provided written consent. Athletes were instructed not to reveal any personal information (e.g., name) to ensure anonymity. The researcher was present while athletes completed the questionnaire pack, which took approximately 15 minutes to complete, without the coach being present. The athletes were asked to respond to the questionnaire as honestly as possible when thinking about their experiences with their current coach and without interacting with each other. Upon completion, athletes were instructed to return their questionnaire pack to the researcher.

Data Analysis

Taking into account the nested nature of the data of athletes within teams, multilevel modeling was used to test the hypotheses that trust, and team sacrifice independently mediated the relationship between authentic leadership and task cohesion. Indeed, the intraclass correlation coefficients in this sample for authentic leadership (.17), team sacrifice (.24), trust (.15) and task cohesion (.11) indicated that a meaningful proportion of variance was explained at the team level for each of the variables, and multilevel modeling was appropriate. A 1-1-1 multilevel structural equation model (MSEM) for mediation with athletes at Level 1 and teams at Level 2 was specified and analyzed using Mplus (V.7; Muthén & Muthén, 2012). A 1-1-1 model was specified because the dependent, mediator and independent variables were all observed at the athlete level (i.e., Level 1). The MSEM approach was utilized due to its superior ability to deal with the conflation of Within (athlete) and Between (team) components of effects that are evident in mediation models that involve linkages between Level 1 variables (e.g., the M → Y effect in a 2-1-1 mediation model; Preacher, Zyphur, & Zhang, 2010). Essentially, MSEM enables the examination of indirect effects at both the athlete and team levels independently of each other. The independent examination of effects allows for the analysis of unbiased within (athlete) level effects.

The indirect effects of the *a* (authentic leadership predicting trust or team sacrifice) and *b* (trust or team sacrifice predicting task cohesion) paths (cf. Bauer, Preacher, & Gil, 2006) were tested with the Monte Carlo Method for Assessing Mediation (MCMAM; Bauer et al., 2006; MacKinnon, Lockwood, & Williams, 2004) via a calculator developed by Selig and Preacher (2008). MCMAM was used to test the indirect effects of a multilevel mediation model because it has demonstrated unbiased indirect effects under most conditions and returns robust confidence interval coverage (Bauer et al., 2006). The MCMAM calculator was specified at the 95% confidence interval and 20,000 repetitions of simulated indirect effects. In coherence with previous leadership research (e.g., Cronin et al., 2015), we also explored

potential gender effects on the independent indirect effects of trust and team sacrifice on the relationship between authentic leadership and task cohesion by specifying separate MSEM mediation models for male and female athletes.

Results

Descriptive Statistics, Alpha Coefficients, and Zero-Order Correlations

Descriptive statistics, Cronbach's alpha coefficients, and zero-order correlations for all variables are presented in Table 1. On average, participants perceived their coach to display authentic leadership behavior 'sometimes' to 'fairly often'. They also reported 'high' trust and task cohesion and perceived their teammates to make sacrifices 'moderately' to 'highly'. All scale scores showed good to excellent internal consistency (alpha range = .77 – .94; Kline, 2016), and all variables had medium-to-large correlations with each other (see Cohen, 1992).

Multilevel Mediation Analysis

Both MSEM models of trust mediating the relationship between authentic leadership and task cohesion, and team sacrifice mediating the relationship between authentic leadership and task cohesion were modeled with fixed Level 2 effects, where the explanatory coefficients are not allowed to vary across teams. Models with fixed Level 2 effects were retained since models with random Level 2 effects (where explanatory coefficients were allowed to vary across teams) did not significantly improve model fit and yielded non-significant between-group variances across all main effects of the models. As recommended by Bauer et al. (2006), the indirect effects of the MSEM mediation models with fixed Level 2 effects were quantified with the product term *a* x *b*. For the hypothesis that trust would mediate the relationship between authentic leadership and task cohesion, multilevel mediation analysis revealed a significant indirect effect (β_a = .66, SE = .05, p = .00; β_b = .22, SE = .08, p = .01; $\beta_{\text{Indirect Effect}}$ = .14, SE = .06, p = .01, 95% CI [.03, .26]) (see Figure 1). Multilevel mediation

analysis also revealed a significant indirect effect of authentic leadership on task cohesion through team sacrifice (β_a = .28, SE = .06, *p* = .00; β_b = .31, SE = .04, *p* = .00; $\beta_{\text{Indirect Effect}}$ = .09, SE = .03, *p* = .00, 95% CI [.04, .15]) (see Figure 2). The effects for the *a* and *b* paths were positive and significant across both mediation models.

Although athlete gender did not significantly correlate with any of the variables specified in the mediation model, we tested the effects of athlete gender on the independent mediating effects of trust and team sacrifice on the relationship between authentic leadership and task cohesion. To this end, separate MSEM mediation models were specified for male and female athletes. The indirect effect of trust mediating the relationship between authentic leadership and task cohesion was significant for male athletes but non-significant for female athletes (see Table 2). The indirect effect of team sacrifice mediating the relationship between authentic leadership and task cohesion was significant for both male and female athletes (see Table 2).

Discussion

Over the past two decades, a large body of literature has emerged focusing on positive forms of leadership in organizational contexts and in sport (e.g., Cronin et al., 2015; Hoch et al., 2018; Leroy et al., 2015; Lybonikova et al., 2015). However, to date, very few studies have examined authentic leadership in team sport. The present study sought to fill this gap in the literature by investigating whether authentic leadership in sport teams is related to task cohesion indirectly through trust in the coach and team sacrifice.

As expected, trust mediated the relationship between authentic leadership and task cohesion, such that the more coaches were viewed to be authentic, the greater the trust athletes had in them, and this in turn was positively related to task cohesion. This is in line with the social exchange theory (Blau, 1964), which suggests that trusting relationships mediate the effects of leadership style on followers' behaviors. Previous work also found links be-

tween authentic leadership in coaches and trust (e.g., Bandura & Kavussanu, 2018). Our findings suggest that the mechanism through which authentic leadership may influence task cohesion is by increasing trust in the coach. These findings provide further support for the assumption that athletes' trust in coaches perceived to be authentic could have profound effects on task cohesion in teams (Houchin, 2011).

It is worth noting that trust mediated the relationship between authentic leadership and task cohesion only in male athletes. This provides initial support for Korabik and Ayman's (2007) integrative model of gender and leadership, whereby gender affects the relationship between leader behaviors and follower outcomes. According to these researchers, leader behaviors and follower outcomes are influenced by intrapsychic processes (e.g., gender role orientation in both parties), sociodemographic gender (e.g., expectations of role behaviors), and contextual cues (e.g., the gender make-up of the group). It may be that when tasks require high levels of interdependence, cooperation, information sharing and above all trust, as is the case in sport teams, authentic leadership practices which engender trust are central to team functioning (Morton, 2016). Although this process was evident in male athletes, it was not evident in female athletes. Further research is needed to explore this issue.

We also found that authentic leadership was indirectly related to task cohesion through team sacrifice. The positive relationship between authentic leadership and team sacrifice is in line with previous research, which has shown that authentic leadership positively predicts organizational citizenship behaviors (Valsania et al., 2015, Walumbwa et al., 2008). Our findings suggest that coaches should display relational transparency (i.e. being open and honest), self-awareness (i.e. understanding how they may influence athletes), internalized moral perspective (i.e. resolving ethical dilemmas within the team consistency) and balanced processing (i.e. evaluate and critically reflect on team tasks) as these behaviors are related to team sacrifice. For example, coaches could role model sacrifice behaviors they expect from

the team (e.g., extra practice sessions for individuals outside of scheduled sessions) or set ambitious yet realistic goals for the team.

Our findings point to the important role of team sacrifice in the relationship between authentic leadership and task cohesion. Athletes who felt their teammates made sacrifices reported higher levels of task cohesion. That is, authentic leadership, for example coaches saying exactly what they mean could raise awareness of sacrifices made (e.g., athletes carrying out responsibilities they do not like for the good of the team). Previous research in sport (Cronin et al., 2015; Prapavessis & Carron, 1997) has also shown that team sacrifice was positively related to task cohesion, thus our findings are in line with previous research. This result also supports the view that making a sacrifice for the group causes individuals to be attracted to the group (Zander, 1985). Our findings suggest that coach authentic leadership could increase task cohesion indirectly by increasing team sacrifice and provide initial evidence consistent with the hypothesized model. The relationship between authentic leadership and task cohesion via team sacrifice was significant in both male and female athletes.

The empirical contributions of this study go beyond confirming the relevance of authentic leadership theory to the context of sport. The highly interactive nature of many sports teams can provide an informative setting parallel to organizational contexts where the majority of authentic leadership studies have been conducted. Within sport, the athletes (followers) have close and frequent interaction with their coaches (leaders). As such, results complement a plethora of research which has provided strong evidence for the positive influence leaders perceived to be authentic have on followers (see Avolio & Walumbwa, 2014).

Practical Implications

Our results have important practical implications. The findings enhance our understanding of the mechanisms through which authentic leadership may influence task cohesion. They suggest that leaders should try to engage in authentic behaviors (e.g., encouraging eve-

ryone to speak their mind, making decisions based on high standards of ethical conduct, showing he or she understands how specific actions impact others and seeking feedback to improve interactions with players) as these behaviors could influence trust, team sacrifice and in turn task cohesion. Coaches ought to put great emphasis on the quality of relationships between themselves and their athletes and *among* athletes. Authentic coaches could help athletes by highlighting the importance of team goals associated with task cohesion (e.g., discussing goals to be achieved in a practice session and reflecting on them at the end of the session). Authentic leadership should be included as a component of leadership training, to assist coaches and athletes in gaining confidence, clarity about their role, self-awareness, and establishing quality relationships within sports teams.

Study Limitations and Future Research Directions

The present study revealed some interesting findings; however, it also has some limitations. First, with any self-report data, there is concern about social desirability and the truthfulness of responses. However, we believe that because the questionnaires were completed without the coach present or conversing with one's teammates, we obtained truthful responses. Second, our data are cross-sectional, which means causality cannot be established between variables; our results simply provide evidence that our data are consistent with the hypothesized model. Prospective longitudinal or experimental studies should be conducted to investigate causality in the relationships identified in this study. Finally, we examined only athlete perceptions of the effects of authentic leadership on task cohesion. Future studies can examine the perspective of the coach as well as the dyadic relationships between athlete and coach, and whether various gender pairings between athlete and coach (e.g., male-male, female-female, male-female, and female-male) influence the findings. Researchers could also evaluate authentic leadership together with servant, transformational and ethical leadership

given the potential overlap and importance of trust within these paradigms (e.g., Hoch et al., 2018)

Conclusion

Our findings extend recent research (Bandura & Kavussanu, 2018;) by identifying athletes' trust and team sacrifice as potential mediators in the relationship between authentic leadership and task cohesion. The present study makes a significant contribution to the literature by showing that authentic leadership could influence task cohesion via trust and team sacrifice. Coaches are encouraged to display behaviours that reflect authentic leadership in their coaching practices with sports teams.

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Footnote

[1]Although perceptions of social cohesion have been linked to performance, in this study we focus on task cohesion given that it is relevant to team outcomes in training and competition (McLaren & Spink, 2018). Indeed, there have been concerns revolving social cohesion in sport teams and its detrimental effects on commitment to team goals, decreased focus, communication problems, anxiety and commitment (e.g., Borego, Cid & Silva, 2012).

Table 1

Descriptive Statistics, Cronbach's Alpha Coefficients, and Bivariate Correlations among all Variables

Variables	*M*	*SD*	1	2	3	4
1. Authentic leadership	3.81	.59	(.87)			
2. Trust	5.70	1.08	.70**	(.94)		
3. Team sacrifice	6.30	1.10	.33**	.28**	(.77)	
4. Task cohesion	5.63	.80	.43**	.45**	.47**	(.84)
5. Athlete gender	-	-	-.05	-.09	.10	.05

Note. Possible range of scores: 1 to 5 for authentic leadership; 1 to 7 for trust; and 1-9 for team sacrifice and task cohesion. Gender was coded as 1 = *male*, 2 = *female*. Cronbach α coefficients are presented in parentheses.
** p <.01

Table 2

Within (athlete) level multilevel mediation analyses

	a path		*b* path		*ab*		95% CI	
	β	SE	B	SE	*β*	SE	LL	UL
Mediator: Trust								
All Athletes	.66**	.05	.22**	.08	.14**	.06	.03	.26
Male Athletes	.70**	.05	.25*	.10	.17**	.07	.03	.30
Female Athletes	.66**	.07	.18	.10	.12	.07	-.01	.26
Mediator: Team Sacrifice								
All Athletes	.28**	.06	.31**	.04	.09**	.03	.04	.15
Male Athletes	.24*	.09	.29**	.06	.07*	.03	.01	.14
Female Athletes	.35**	.07	.33**	.04	.11**	.03	.06	.17

Note. a path = independent variable (authentic leadership) and mediator variable; *b* path = mediator variable and dependent variable (task cohesion); *ab* = indirect effect SE = Standard Error; CI = Confidence Interval; LL = Lower Limit; UL = Upper Limit.

**$p < .01$; *$p < .05$.

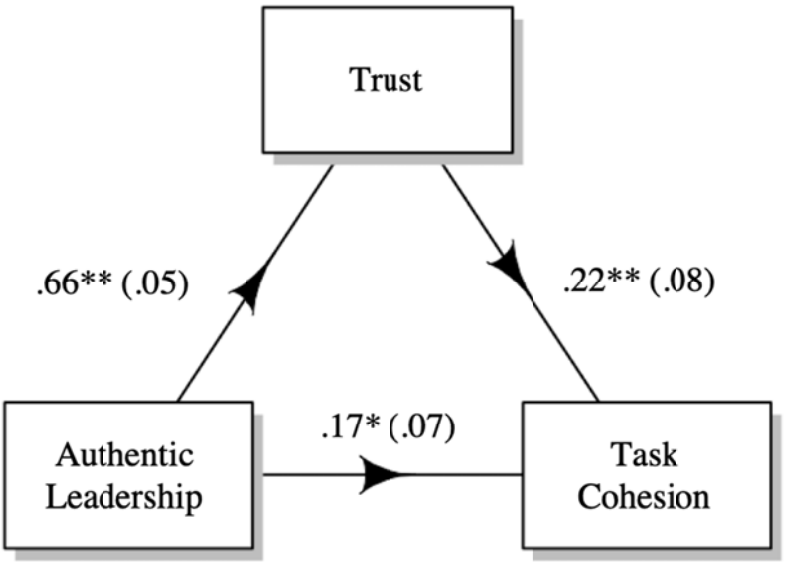

Figure 1. Trust as a mediator of the relationship between Authentic Leadership and Task Cohesion.
Note. β coefficients and standard errors (in parentheses) presented for each of the paths. $^{**}p < .01$; $^{*}p < .05$.

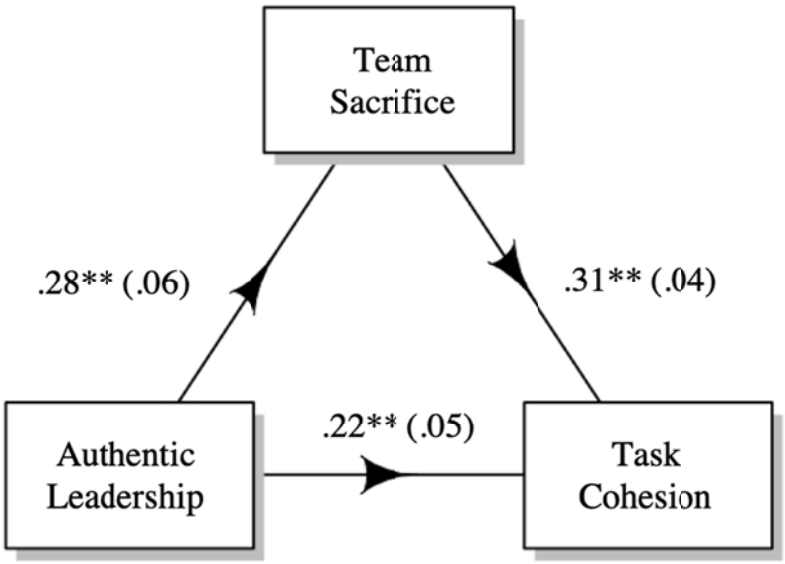

Figure 2. Team Sacrifice as a mediator of the relationship between Authentic Leadership and Task Cohesion.

Note. β coefficients and standard errors (in parentheses) presented for each of the paths. $^{**}p < .01$.