

“That’s How We Do Things Here”: An Investigation into Athlete Perceptions of Coach and Peer Leadership Behaviors, and Team Culture

Corinne T. Zimmerman¹, Robin S. Vealey², & Nicholas D. Myers¹

¹Michigan State University, ²Miami University

Team culture can be considered essential for the success of any sport team, and it is known that leaders of all kinds play a unique role in making team success a reality. Utilizing survey tools developed by industrial/organizational psychology, this study investigated how athlete perceptions of head coach and peer leadership behaviors are predictive of athlete perceptions of team culture. A sample of 155 current collegiate athletes representing 17 NCAA teams across three divisions participated in an online survey. A path model analysis found that perceptions of leadership behaviors of both head coaches and peer leaders were significantly predictive of athlete perceptions of team culture. Further, perceptions of head coach leadership behavior were predictive of perceptions of group communication, while perceptions of peer leadership were more significantly related to the social aspects of team culture. The results of this study provide insight into the unique ways in which athletes’ perception of leadership can influence team culture and can aid in the understanding of how team culture works within a sport context.

Keywords: team culture, coach leadership, peer leaders, group dynamics

In sport, team culture has been defined as the shared values, expectations, and behavioral practices of a particular group (Cruickshank et al., 2014; Schein & Schein, 2016). These various components are sometimes called group dynamics (Beauchamp et al., 2005), but as a whole, they can be referred to as organizational or team culture (Glaser et al., 1987; Schein & Schein, 2016). Having an effective team culture has been associated with numerous positive outcomes, such as stronger team cohesion (Shields et al., 1997) and team performance success (Frontiera, 2009). As a result of these benefits, team culture is often considered to be an impactful contributor to overall team success. However, due to its multifaceted nature, team culture intersects with many additional constructs that are associated with team success (e.g., leadership, motivational climate), making the exact impact of team culture difficult to discern.

Because an operationalized definition of team culture

in sport has yet to be determined, it is important to have a theoretical understanding of what team culture is and how it can be experienced (McDougall et al., 2020). The construct of team culture in sport is understood similarly to organizational culture in industrial/organizational (I/O) psychology. *Organizational culture* refers to the values, beliefs, and experiences shared by the members of a particular organization or group (Schein & Schein, 2016). Although most of the research guiding this work was done in reference to organizational culture, the term “team culture” will be used for the remainder of the paper when discussing the unique culture of groups. Team culture is a mark of distinction between groups. For example, the team culture between elite sport and lower-level recreational sport in the United States is noticeably different when considering the structure, values, and normative behaviors of the group (Green & Oakley, 2001). In the context of NCAA intercollegiate athletics, different teams possess different values that make them unique even in their shared higher level of competition.

Researchers have long been interested in the effects of groups on performance outcomes (Beauchamp & Eys, 2014; Carron et al., 1985; Horn et al., 2012; Kwantes &

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CONTACT: Corinne T. Zimmerman, 308 W Circle Dr. East Lansing, MI 48824. Email: zimme362@msu.edu

Boglarsky, 2007; Levy, 2017; Loughhead & Hardy, 2005; Schein & Schein, 2016). Schein's Culture Model provides a theoretical understanding of team culture (Schein & Schein, 2016). This model frames team culture as an iceberg, composed of three parts: artifacts (i.e., symbols, stories, rituals), values (i.e., reasons and/or rationalizations for why group members do what they do), and core assumptions (i.e., how members think, feel, and perceive). These three components serve as guides for a group in the process of problem-solving, adapting external behaviors, and internal integration (Cole & Martin, 2018; Schein & Schein, 2016). This model reflects the internal components of team culture. A team can define their values and beliefs and then associate them with tangible artifacts to guide behavior. However, the external behavior itself is not accounted for.

Even with models such as Schein's, there has been disagreement on the overall conceptualization of team culture (Denison & Mishra, 1995; Maitland et al., 2015; Scott et al., 2003), especially regarding practical applications. Team culture has been called "the twilight zone" of sport psychology and sport management (Cruickshank & Collins, 2013, p. 7). This is because team culture is often used to describe sport teams independently and in the context of a larger business organization. This is particularly notable in the context of collegiate sport. Individual teams are connected to a larger department that promotes its own culture. Individual teams may share the values and expectations of the larger department but are still unique within the larger system (Schroeder, 2010). Glaser and colleagues (1987) sought to measure team culture via action-based perceptions rather than psychological constructs. Action-based perceptions of team culture are the observable actions made by team members that represent the shared culture. Through the development of the Organizational Culture Survey (OCS), they identified behavioral demonstrations of teamwork, climate and morale, information sharing, member involvement, supervision, and meetings as areas that prominently displayed the values and underlying assumptions of a team's culture.

In the OCS, teamwork is conceptualized as the interpersonal coordination with others on the team, such as the way they speak to one another and handle conflict when it arises. Climate and morale refer to the environmental experience of being within the group, along with the resulting atmosphere of trust or motivation that can come from that experience. Information sharing and involvement refer to an

individual's access to knowledge and autonomy within the team to fulfill their designated role. Lastly, Glaser and colleagues (1987) considered the actions of leaders as essential in the way culture is perceived by an individual within the team, as well as meeting productivity and the usage of time. Glaser and colleagues (1987) noted that this list is not exhaustive, nor is it exclusive. Several additional factors can come together to influence the perception of team culture, such as sociocultural setting or various group demographics (Hofstede et al., 1990). However, their goal in developing this measure was to highlight these specific action-based factors as essential to the creation of team culture and thus important to an individual's perception of team culture (Glaser et al., 1987).

The components outlined by Glaser and colleagues (1987) are not unlike the conceptualization of group constructs that are often studied in the sport psychology domain. Group dynamics are a popular topic of study, especially as they relate to performance (Kleinert et al., 2012). Group dynamics are understood as various elements, processes, and set conditions that help develop a group (Beauchamp & Eys, 2014; Denison, 1996) and contribute to their successes and/or failures (Chelladurai, 2004). The group dynamics framework is a more common approach to the study of groups in sport psychology (Beauchamp & Eys, 2014; Kleinert et al., 2012), thus making the topic of team culture in sport an under-studied area. For example, Carron and colleagues (1985) provided a conceptualized measure of group cohesion, which is understood to be the dynamic process in which groups tend to stick together in pursuit of their common goals and/or group satisfaction. Additionally, motivational climate has been understood as a psychological environment created via interpersonal interactions to influence an individual's drive toward achievement via mastery or task motivations (Chelladurai, 2004; Harwood & Thrower, 2020). These concepts, as well as role clarity, leadership, and many others, are considered to sit underneath the larger umbrella of team culture by both industrial/organizational (Denison, 1996; Glaser et al., 1987) and sport psychology researchers (Cruickshank & Collins, 2013; Maitland et al., 2015; McDougall et al., 2020). This suggests that individual study of these elements tells only part of a larger story.

Leaders whose behaviors are included in action-based descriptions of team culture are influential to an individual's experience of belonging to a sport team (Cruickshank & Collins, 2013; Frontiera, 2009; Shields et al., 1997). Shields and colleagues (1997) found that

generally group cohesion and athlete perceptions of leadership behavior were strongly related in the collegiate sport context. Leadership behaviors of collegiate and elite head coaches have been studied—primarily via qualitative methods—to explore their influence during times of culture change or implementation (i.e., the transient times when team culture is not yet firmly established). Researchers have found that the manner in which a head coach communicates with a team is essential to generating “buy-in” to the team culture (Cruickshank et al., 2014; Donoso-Morales et al., 2017; Fletcher & Arnold, 2011; Schroeder, 2010; Scott, 1997).

However, head coaches are not the only individuals in positions of leadership that influence the group dynamics. For example, peer leaders often demonstrate a role in shaping athletes’ perceptions of the motivational climate (Ntoumanis & Vazou, 2005). Peer leaders are athletes who are members of the team that also possess a leadership role either formally (e.g., team captain) or informally (e.g., veteran team member). A study by Loughhead and Hardy (2005) found that head coaches and peer leaders of club, collegiate, and national teams tend to exhibit different types of leadership behaviors. For example, athletes perceived head coaches to display more leadership behaviors surrounding training and instruction and more autocratic behaviors (e.g., controlling, independent decision-making) than peer leaders, who were found to display more behaviors of social support, positive feedback, and democratic behaviors (Loughhead & Hardy, 2005). Research on peer leadership behaviors and their influence on collegiate athletes’ experiences of team culture is limited compared to the literature on head coach influence on team culture. Although some studies, such as one by Cole and Martin (2018), explored how peer leaders might influence and disrupt team culture, a majority of the research emphasizes the head coaches’ experience of team culture rather than that of the athletes who make up the group.

For this reason, this study sought to determine if athlete perceptions of leadership behaviors of the head coaches and peer leaders were predictive of athlete perceptions of team culture. It was hypothesized that athlete perceptions of the leadership behavior of head coaches would be positively related to athlete action-based perceptions of team culture. Secondly, it was hypothesized that athlete perceptions of peer leadership behaviors would be positively related to athlete action-based perceptions of team culture. The final hypothesis involved the use of a simultaneous investigation of

athlete perceptions of head coach leadership behaviors and peer leadership behaviors. It was hypothesized that the perception of peer leadership behaviors would be uniquely related to athlete action-based perceptions of team culture while controlling for athlete perceptions of coach leadership behavior.

Method

Participants

This study was conducted with a sample of NCAA collegiate sports teams. Participants needed to be at least 18 years old and currently participating in their collegiate varsity-level sport team. The emphasis was placed on interactive team sports due to the increased importance of working as a group toward a successful team performance. Sports represented in this study were volleyball, basketball, field hockey, ice hockey, softball, lacrosse, and soccer.

One hundred and fifty-five athlete participants initially agreed to participate in this study, but only 130 participants provided necessary responses for the three main outcomes of this study. Given our approach to missing data (to be detailed), the effective sample size was 130 (for main outcomes) and less than or equal to 130 for demographic variables ($n_{age} = 105$, $n_{gender} = 130$, $n_{race/ethnicity} = 129$). Participant ages ranged between 18 and 24 years ($M_{age} = 20.25$, $SD_{age} = 1.43$). A majority (77.7% or $n = 101$) of participants identified as women and as Caucasian/white (88.5% or $n = 115$). Additional sample demographic information can be found in Table 1.

Measures

This study was conducted utilizing several self-report questionnaires, which were administered via the online survey tool, Qualtrics. The questionnaires included participant demographics, an open-ended prompt asking athletes to describe their team culture in their own words, the Leadership Scale for Sport (Chelladurai & Saleh, 1980) for the head coach, the Leadership Scale for Sport for a peer leader, and the Organizational Culture Survey (Glaser et al., 1987).

Head Coach and Peer Leadership Behaviors

The Leadership Scale for Sport (LSS; Chelladurai & Saleh, 1980) was used to measure participants’ perceptions of leadership behaviors on five subscales: Training/Practice, Democratic, Autocratic, Social Support, and Positive Feedback behaviors.

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Developmental studies by Chelladurai and Saleh (1980) demonstrated that the five-factor questionnaire was meaningful for the conceptualization of leadership behaviors. Current participants responded to 40 items on a five-point Likert Scale, 1 (“my coach never does this behavior”) to 5 (“my coach always does this behavior”). Internal consistency estimates from a Cronbach’s alpha test ranged from .45 to .93, with test re-test reliability ranging from .71 to .82, suggesting a relatively stable tool (Chelladurai & Saleh, 1980). Since its development, the LSS has been used in various studies set in the intercollegiate sport context (Riemer & Toon, 2001; Witte, 2011; Zhang et al., 1997).

Two versions of the LSS were used in this study: one referring to the leadership behavior of participants’ head coach and the second referring to the leadership behavior of an influential peer leader chosen by participants. We used Vincer and Loughhead’s (2010) Athlete Leader Version of the LSS, a survey utilized with collegiate athletes in previous research (Burkett et al., 2014). Specifically, participants were asked to choose an individual they believed to be an influential leader on the team; importantly, this individual did not have to be a *designated* team captain. Participants provided basic demographic information about their chosen leader (i.e., class level and team captain status) and were then asked to consider that individual when responding to the items of the LSS. No additional identifying data were collected.

The influential peer leader version also utilized the same five-point scale, switching “coach” for “team leader.”

Both versions of the LSS included the same 40 items with the word “athlete” replaced with “teammates” in the influential peer leader survey (Vincer & Loughhead, 2010). For example, the item “Let’s athletes share in decision making” is used in the head coach version, and “Let’s teammates share in decision making” is the corresponding item in the influential peer leader survey. The data set of this study demonstrated appropriate reliability standards for both versions of the LSS. Cronbach’s alphas for both surveys ranged from .71 to .91, meeting the standard for alpha values larger than .70 (Nunnally & Bernstein, 1994).

Team Culture

The Organizational Culture Survey (OCS; Glaser et al., 1987) was used to measure perceptions of team culture. Participants responded to 31 items that represented six different subscales: Teamwork, Climate/Morale, Communication Flow, Involvement, Supervision, and Meeting Participation. Subscales of Teamwork, Climate and Morale, and Involvement addressed the athletes’ own personal experiences on the team. The Teamwork subscale addressed if the athlete feels a sense of interpersonal coordination with others on the team. The Climate and Morale subscale considered the extent to which the athletes perceive the environment to feel welcoming or motivational. The Involvement subscale considered whether athletes feel their opinions are valued within the context of the team. The subscale of Supervision focused on the interpersonal skills of the direct supervisor. This was the head coach in the context of this study. Communication Flow referred to the accessibility of information among all members of the team, and Meeting Participation would be the occurrence and productivity of team meetings (Glaser et al., 1987).

The OCS was developed in the context of I/O psychology, but for this study, the survey was adapted to fit a sport team as no such survey exists specifically for measuring team culture in athletic settings. Stem words were changed to adapt the scale for a sport-specific context. For example, the word “office” was changed to “team,” and “coworkers” was changed to “teammates.” As such, the item: “people in my office are honest and direct with each other” was modified to “people on my team are honest and direct with each other” to fit the context of this study. Respondents utilized a 5-point Likert scale (1, “this is nothing like my team’s culture,” to 5, “this is very much like my team’s culture”). An average

Table 1. Participant Demographic Information

	<i>N</i>	%
Gender		
Men	29	22.3
Women	101	77.7
Race/Ethnicity		
Caucasian	115	88.5
Black/African American	9	6.9
Asian	2	1.5
Hispanic	3	2.3
Indigenous American	2	1.5
Native Hawaiian or Pacific Islander	2	1.5
Other	4	3.0
Sport Types		
Basketball	6	36.2
Volleyball	5	29.0
Field Hockey	2	11.7
Ice Hockey	1	5.8
Softball	1	5.8
Soccer	1	5.8
Lacrosse	1	5.8

score for each subscale represents an overall score for each action-based characteristic of one's team culture. At the development of the survey, authors accepted internal consistency measures of alpha larger than .64 for their subscales. These data possessed alphas larger than .80 for all subscales, meeting the standards of the authors (Glaser et al., 1987) and the field (Nunnally & Bernstein, 1994).

Procedure

Upon gaining approval from an institutional ethics review board, recruitment began utilizing purposive sampling methods. All teams invited to participate were NCAA varsity level team sports that had publicly available contact information for coaching staff. E-mail invitations were sent to the head coaches of teams for permission to contact their athletes regarding study participation. Data were intended to be collected midway through the season of participating teams to allow teams time to acclimate to their team cultures, however, due to the schedules of participating teams, data were accepted at all periods of time. Researchers sent three invitation emails to head coaches before removing them from the contact list. An email list of student-athletes, provided by the head coach, allowed researchers to directly contact the student-athletes with an invitation to participate. Similarly, researchers sent participating athletes two reminder emails over two weeks after the initial participation invitation. Questionnaires included a demographic section, the LSS for Head Coach, the LSS for peer leaders, and the OCS. Questionnaires were counterbalanced to account for potential biases that might come from completing the various surveys in a certain order and to dissuade any survey fatigue.

Missing Data

Missing data were handled consistent with recommendations from Patel and associates (2021). There were 111 measured variables: 40 LSS – head coach items, 40 LSS – peer leader items, 31 OCS items. Missing data on the 40 LSS – head coach items ranged from 14.62% ($n = 19$; e.g., item 3) to 0.90% ($n = 22$; e.g., item 5). Missing data on the 40 LSS – peer leader items ranged from 8.46% ($n = 11$; e.g., item 1) to 10.00% ($n = 13$; e.g., item 6). Missing data on the 31 OCS items ranged from 13.08% ($n = 17$; e.g., item 1) to 15.38% ($n = 20$; e.g., item 23). In summary, across measured variables, missing data comprised 12.68% of possible observations (i.e., 1,830 out of 14,430 total cells were missing data). Missing data were handled under the assumption that data were missing at random (Rubin,

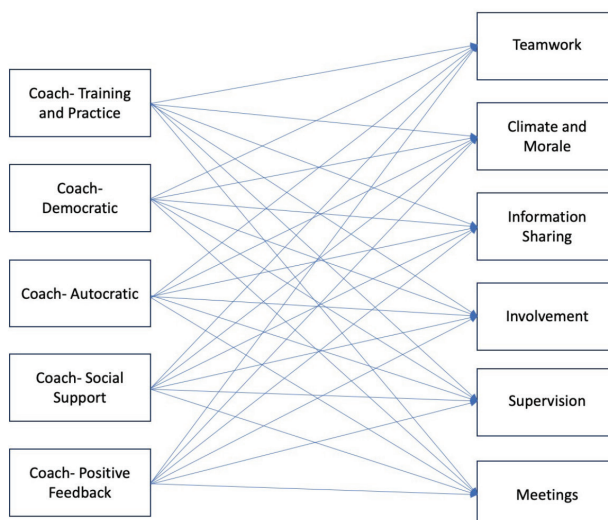
1987). Multiple imputations with 1000 imputed data sets were requested from the unrestricted model. Parameter estimates and their standard errors were then combined across replications according to rules provided by Rubin (1987) and Schafer (1997). These approaches to missing data resulted in an analytic sample size of 130.

Data Analytic Approach

Three separate observed path models (see Figures 1–3) were fit to the data to test the three separate hypotheses of the observed variables with robust maximum likelihood estimation (MLR; Yuan & Bentler, 2000) in Mplus 8.7 (Muthén, 1989; Muthén & Muthén, 1998). Each path model was just-identified ($df = 0$), which made investigation of model-data fit not possible. Each path model specified team as a cluster variable and modeled a pooled within-cluster covariance matrix to account for dependency due to team (e.g., Muthén, 1989). The first path model regressed the six team culture subscales on the five leadership behaviors of head coach subscales. This model estimated 57 parameters with the 30 regression coefficients as the focal parameters. The purpose of this model was to test if athlete perceptions of leadership behavior of head coaches predicted their perceptions of team culture. Path models with latent variables were not imposed due to the modest sample size (e.g., Ntoumanis & Myers, 2016).

The second path model regressed the six team culture subscales on the five leadership behaviors of peer leader subscales. This model estimated 57 parameters with the

Figure 1. Path Analysis Model Regressing Team Culture on Head Coach Leadership Behaviors



30 regression coefficients as the focal parameters. The purpose of this model was to test if athlete perceptions of peer leadership behavior predicted their perceptions of team culture. The third path model regressed the six team culture subscales on both the five leadership behaviors of head coach subscales and on the five leadership

behaviors of peer leader subscales simultaneously. This model estimated 87 parameters with the 60 regression coefficients as the focal parameters. The purpose of this model was to test if athlete perceptions of peer leadership behavior predicted their perceptions of team culture, after controlling for athlete perceptions of leadership behavior of head coaches.

Figure 2. Path Analysis Model Regressing Team Culture on Peer Leadership Behaviors

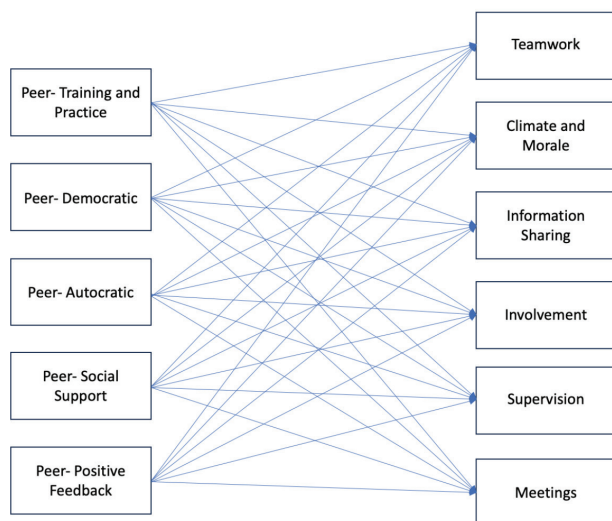
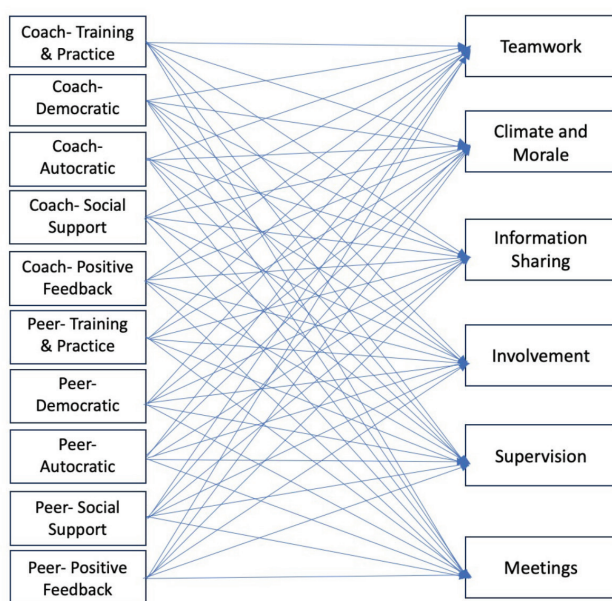


Figure 3. Path Analysis Model Regressing Team Culture on Head Coach Leadership Behaviors and Peer Leadership Behaviors



Results

Three models were generated for each of the three hypotheses. The first model analyzed the LSS coach data related to the OCS data. The second analyzed the LSS peer leader data related to the OCS, and the third analyzed both sets of LSS data (coach and peer) simultaneously in their relation to the OCS. Table 2 provides a summary of study variables, including Pearson's R correlations.

Relationship Between Perceived Coach Leadership Behavior and Team Culture

Table 3 shows that a significant relationship was found between the LSS Coach and the OCS. The R-Squared values revealed that OCS subscales of Supervision ($R^2 = .639$, $p < .001$), Information Sharing ($R^2 = .190$, $p = .008$), Meetings ($R^2 = .176$, $p = .01$), and Involvement ($R^2 = .182$, $p = .036$) were most significantly related to the LSS Coach subscales. Examination of the unstandardized beta values show that Head Coach Training and Practice Behavior were significantly predictive in nature of two of the OCS subscales—Information Sharing ($B = .52$, $p = .004$) and Meetings ($B = .43$, $p = .007$). Additionally, three of the LSS Coach variables were predictive of the OCS subscale of Supervision. Social Support ($B = .33$, $p < .001$) and Positive Feedback ($B = .28$, $p = .011$) were positively related to Supervision, while Autocratic Behaviors and Supervision ($B = -.18$, $p = .001$) possessed a negative relationship. None of the subscales of the LSS Coach survey were significantly predictive of the OCS subscales of Teamwork, Climate and Morale, or Involvement. These findings demonstrate the ways in which athlete perceptions of head coach leadership behaviors are significantly related to their perceptions of action-based team culture.

Relationship Between Perceived Peer Leadership Behavior and Team Culture

As shown in Table 4, a significant relationship exists between the LSS Peer survey and the OCS. The R-squared values indicated that the OCS subscales of Teamwork ($R^2 = .253$, $p = .003$), Involvement

Table 2. Pearson's R Correlations, Means, Standard Deviations, Possible and Obtained Ranges for All Study Variables.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Coach Training and Practice	-	-	-	-	-	-	-	-	-	-	-	-	--	-	-	-
2. Coach Democratic	0.67***	-	-	-	-	-	-	-	-	-	-	-	--	-	-	-
3. Coach Autocratic	-.04	.00	-	-	-	-	-	-	-	-	-	-	--	-	-	-
4. Coach Social Support	.66***	.69***	-.09	-	-	-	-	-	-	-	-	-	--	-	-	-
5. Coach Positive Feedback	.75***	.64***	-.09	.73***	-	-	-	-	-	-	-	-	--	-	-	-
6. Peer Training and Practice	.38***	.41***	.08	.36***	.40***	-	-	-	-	-	-	-	--	-	-	-
7. Peer Democratic	.11	.23*	.09	.13	.24*	.43***	-	-	-	-	-	-	--	-	-	-
8. Peer Autocratic	.13	.26*	.45***	.26**	.13	.16	-.06	-	-	-	-	-	--	-	-	-
9. Peer Social Support	.11	.16	-.04	.24**	.20*	.42***	.45***	-.14	-	-	-	-	--	-	-	-
10. Peer Positive Feedback	.20*	.13	-.01	.19**	.34***	.32***	.55***	.28***	.52***	-	-	-	--	-	-	-
11. Teamwork	.30***	.29**	.03	.20**	.29**	.44***	.33***	-.00	.31***	.35***	-	-	--	-	-	-
12. Climate	.18*	.04	-.02	.06	.16	.29*	.20*	-.04	.17	.30**	.78***	-	--	-	-	-
13. Information	.41***	.21**	-.09	.26**	.32***	.35***	.24**	.07	.12	.23*	.55***	.59***	--	-	-	-
14. Involvement	.33***	.36***	-.13	.38***	.33**	.35**	.37***	.02	.21**	.25*	.55***	.52***	.63***	-	-	-
15. Supervision	.64***	.60***	-.24*	.72***	.71***	.31**	.19**	.07	.13	.15	.29**	.08	.40***	.58***	-	-
16. Meetings	.41***	.31***	-.03	.29**	.33***	.36***	.21**	.07	.15	.21*	.63***	.66***	.58***	.55***	.34***	-
M	4.15	3.45	2.81	3.77	3.93	3.79	4.05	2.14	4.28	4.47	3.94	4.38	4.26	4.05	3.95	3.94
SD	.65	.78	.78	.83	.78	.69	.70	.88	.67	.66	.69	.74	.72	.79	.79	.80
Obtained Range	1.92-5	1.8-5	1.8-5	1.75-5	1.83-5	1.46-5	2.22-5	1-5	2.25-5	2.4-5	1-5	1.2-5	1-5	1-5	1.71-5	1.25-5
Possible Range	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

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($R^2 = .187, p = .011$), and Information Sharing ($R^2 = .160, p = .042$) were the most significantly influenced by the scores of the subscales of the LSS Peer survey. Review of the unstandardized beta values from the model shows Training and Practice Behavior of peer leaders was significantly predictive of Teamwork ($B = .33, p = .047$), Information Sharing ($B = .32, p = .045$), and Meetings ($B = .38, p = .033$). Positive Feedback Behavior of peer leaders also significantly predicted Climate and Morale ($B = .30, p = .014$). Democratic behavior was significantly predictive of scores of team culture Involvement ($B = .28, p = .014$). The analysis shows that peer leadership autocratic behavior and social support were not significantly predictive of perceptions of

Table 3. Results of Athletes' Perceptions of Head Coach Leadership Behavior as it Relates to Team Organizational Culture

Variable	<i>beta</i>	<i>B</i>	<i>SE</i>	<i>z</i>	95% CI
Teamwork					
Training and Practice	.15	.16	.16	.99	[-.16, .47]
Democratic	.18	.16	.15	1.02	[-.15, .46]
Autocratic	.04	.04	.11	.31	[-.19, .26]
Social Support	-.15	-.13	.14	-.91	[-.40, .15]
Positive Feedback	.19	.17	.15	1.10	[-.13, .46]
Climate and Morale					
Training and Practice	.22	.25	.16	1.53	[-.07, .57]
Democratic	-.13	-.13	.14	-.92	[-.39, .14]
Autocratic	-.004	-.004	.10	-.04	[-.19, .19]
Social Support	-.12	-.11	.11	-1.04	[-.32, .10]
Positive Feedback	.17	.17	.16	1.03	[-.15, .48]
Information Sharing					
Training and Practice	.47	.52	.18	2.85**	[.16, .87]
Democratic	-.15	-.13	.11	-1.19	[-.35, .09]
Autocratic	-.07	-.06	.09	-.68	[-.24, .11]
Social Support	.03	.02	.09	.25	[-.16, .21]
Positive Feedback	.03	.03	.11	.29	[-.18, .24]
Involvement					
Training and Practice	.08	.10	.15	.70	[-.19, .39]
Democratic	.16	.16	.15	1.06	[-.14, .46]
Autocratic	-.10	-.10	.09	-1.19	[-.28, .07]
Social Support	.20	.19	.11	1.82	[-.02, .40]
Positive Feedback	.01	.01	.18	.04	[-.35, .36]
Supervision					
Training and Practice	.13	.16	.11	1.40	[-.06, .38]
Democratic	.09	.10	.08	1.21	[-.06, .25]
Autocratic	-.18	-.18	.06	-3.19***	[-.29, -.07]
Social Support	.35	.33	.08	4.33***	[.18, .49]
Positive Feedback	.28	.28	.11	2.55*	[.07, .50]
Meetings					
Training and Practice	.34	.43	.16	2.68**	[.11, .74]
Democratic	.08	.08	.12	.70	[-.14, .31]
Autocratic	-.02	-.02	.10	-.20	[-.22, .18]
Social Support	-.02	-.02	.12	-.14	[-.26, .22]
Positive Feedback	.03	.03	.14	.25	[-.23, .30]

Note. *beta* = estimated standardized beta; *B* = estimated unstandardized beta; CI = confidence interval.

* $p < .05$, ** $p < .01$, *** $p < .001$

team organizational culture. No significant relationship was found between the LSS Peer subscales and the OCS subscale of Supervision, suggesting that peer leadership behaviors do not influence perceptions of the head coach in the context of culture. These findings show that athlete perceptions of peer leadership behavior are significantly predictive of athlete perceptions of team culture.

Simultaneous Relationship Between Perceived Leadership Behaviors and Team Culture

Table 5 presents the results of a simultaneous analysis of the LSS Coach and the LSS Peer in relation to the OCS. The R-squared values of all OCS subscales suggest that the two LSS surveys, both head coach and peer leader, demonstrate significant influence on athlete perception

Table 4. Results of Athletes' Perceptions of Peer Leadership Behavior as it Relates to Team Organizational Culture

Variable	<i>beta</i>	<i>B</i>	<i>SE</i>	<i>z</i>	95% CI
Teamwork					
Training and Practice	.33	.33	.17	1.98*	[.00, .66]
Democratic	.07	.07	.11	.60	[-.15, .29]
Autocratic	.01	.01	.06	.13	[-.12, .13]
Social Support	.05	.05	.14	.34	[-.23, .33]
Positive Feedback	.19	.20	.11	1.78	[-.02, .42]
Climate and Morale					
Training and Practice	.24	.26	.18	1.45	[-.09, .61]
Democratic	-.02	-.02	.14	-.16	[-.29, .25]
Autocratic	-.02	-.01	.08	-.17	[-.18, .15]
Social Support	-.06	-.07	.12	-.60	[-.30, .16]
Positive Feedback	.26	.30	.12	2.45*	[.06, .53]
Information Sharing					
Training and Practice	.31	.32	.16	2.00*	[.01, .64]
Democratic	.07	.08	.11	.71	[-.13, .28]
Autocratic	.05	.04	.07	.62	[-.10, .18]
Social Support	-.13	-.13	.11	-1.17	[-.36, .09]
Positive Feedback	.17	.19	.16	1.15	[-.13, .50]
Involvement					
Training and Practice	.24	.27	.18	1.51	[-.08, .62]
Democratic	.25	.28	.12	2.46*	[.06, .51]
Autocratic	.01	.01	.08	.15	[-.14, .16]
Social Support	-.04	-.04	.13	-.32	[-.29, .21]
Positive Feedback	.06	.07	.16	.45	[-.24, .39]
Supervision					
Training and Practice	.28	.32	.17	1.88	[-.01, .65]
Democratic	.06	.07	.15	.45	[-.22, .36]
Autocratic	.04	.04	.09	.42	[-.14, .21]
Social Support	-.04	-.05	.17	-.27	[-.39, .29]
Positive Feedback	.06	.07	.16	.45	[-.24, .37]
Meetings					
Training and Practice	.33	.38	.18	2.13*	[.03, .73]
Democratic	.03	.03	.12	.25	[-.21, .27]
Autocratic	.05	.05	.08	.58	[-.11, .20]
Social Support	-.07	-.08	.16	-.49	[-.40, .24]
Positive Feedback	.13	.16	.11	1.42	[-.06, .39]

Note. *beta* = estimated standardized beta; *B* = estimated unstandardized beta; CI = confidence interval.

* $p < .05$, ** $p < .01$, *** $p < .001$

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of action-based team culture. The R-squared values of five of the six subscales were highly significant with p-values of less than .001 (Teamwork, $R^2 = .290$; Information Sharing, $R^2 = .300$; Involvement, $R^2 = .302$; Supervision, $R^2 = .663$; Meetings, $R^2 = .243$). The OCS subscale of

Climate and Morale was slightly less influenced by the LSS subscales while still having a significant R-squared value ($R^2 = .178$, $p = .028$). The analysis of the LSS Coach, the LSS Peer and the OCS showed seven significant relationships between the head coach LSS and OCS and

Table 5. Results of Athlete's Perceptions of Head Coach and Peer Leadership Behavior as it Relates to Perceptions of Team Organizational Culture

Variable	<i>beta</i>	<i>B</i>	<i>SE</i>	<i>z</i>	95% CI
Teamwork					
Coach Training and Practice	.17	.18	.18	1.04	[-.16, .52]
Coach Democratic	.12	.11	.15	.73	[-.18, .40]
Coach Autocratic	-.003	.00	.13	-.02	[-.25, .24]
Coach Social Support	-.17	-.14	.15	-.92	[-.44, .16]
Coach Positive Feedback	.02	.02	.14	.13	[-.25, .28]
Peer Training and Practice	.26	.26	.18	1.47	[-.09, .61]
Peer Democratic	.06	.06	.11	.55	[-.15, .27]
Peer Autocratic	.01	.01	.09	.10	[-.17, .19]
Peer Social Support	.09	.09	.14	.66	[-.18, .37]
Peer Positive Feedback	.17	.18	.14	1.31	[-.09, .45]
Climate and Morale					
Coach Training and Practice	.22	.26	.16	1.59	[-.06, .57]
Coach Democratic	-.17	-.16	.14	-1.15	[-.44, .12]
Coach Autocratic	-.07	-.07	.11	-.60	[-.29, .15]
Coach Social Support	-.13	-.12	.12	-1.02	[-.35, .11]
Coach Positive Feedback	.02	.01	.16	.09	[-.31, .34]
Peer Training and Practice	.23	.25	.19	1.31	[-.13, .63]
Peer Democratic	.01	.01	.14	.09	[-.25, .28]
Peer Autocratic	.07	.06	.11	.54	[-.15, .27]
Peer Social Support	-.03	-.03	.13	-.22	[-.28, .23]
Peer Positive Feedback	.25	.28	.14	2.01*	[.01, .55]
Information Sharing					
Coach Training and Practice	.50	.55	.18	3.15**	[.21, .90]
Coach Democratic	-.25	-.23	.10	-2.40*	[-.42, -.04]
Coach Autocratic	-.19	-.17	.11	-1.55	[-.39, .05]
Coach Social Support	.03	.02	.10	.22	[-.18, .22]
Coach Positive Feedback	-.10	-.10	.13	-.73	[-.35, .16]
Peer Training and Practice	.22	.23	.17	1.33	[-.11, .56]
Peer Democratic	.17	.18	.12	1.53	[-.05, .41]
Peer Autocratic	.16	.13	.09	1.51	[-.04, .30]
Peer Social Support	-.10	-.11	.13	-.85	[-.35, .14]
Peer Positive Feedback	.12	.13	.17	.77	[-.20, .46]
Involvement					
Coach Training and Practice	.14	.17	.14	1.19	[-.11, .44]
Coach Democratic	.05	.06	.14	.40	[-.21, .32]
Coach Autocratic	-.15	-.15	.12	-1.26	[-.40, .09]
Coach Social Support	.26	.25	.12	2.15*	[.02, .48]
Coach Positive Feedback	-.14	-.14	.18	-.82	[-.49, .20]
Peer Training and Practice	.14	.16	.17	.91	[-.18, .49]
Peer Democratic	.30	.35	.10	3.30***	[.14, .55]
Peer Autocratic	.01	.01	.11	.09	[-.20, .22]
Peer Social Support	-.07	-.09	.11	-.81	[-.30, .12]
Peer Positive Feedback	.05	.06	.16	.35	[-.25, .36]

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Variable	<i>beta</i>	<i>B</i>	<i>SE</i>	<i>z</i>	95% CI
Supervision					
Coach Training and Practice	.14	.17	.11	1.53	[-.05, .38]
Coach Democratic	.05	.05	.07	.71	[-.09, .19]
Coach Autocratic	-.15	-.16	.07	-2.25*	[-.29, -.02]
Coach Social Support	.41	.39	.08	4.65***	[.22, .55]
Coach Positive Feedback	.29	.29	.11	2.56*	[.07, .52]
Peer Training and Practice	.01	.02	.08	.19	[-.15, .18]
Peer Democratic	.15	.17	.07	2.36*	[.03, .31]
Peer Autocratic	-.07	-.07	.07	-.96	[-.20, .07]
Peer Social Support	-.07	-.08	.10	-.80	[-.28, .12]
Peer Positive Feedback	-.13	-.16	.10	-1.61	[-.35, .03]
Meetings					
Coach Training and Practice	.35	.44	.17	2.54*	[.10, .78]
Coach Democratic	.01	.01	.12	.10	[-.22, .24]
Coach Autocratic	-.09	-.09	.12	-.72	[-.32, .15]
Coach Social Support	-.02	-.02	.13	-.16	[-.28, .24]
Coach Positive Feedback	-.07	-.07	.16	-.45	[-.38, .24]
Peer Training and Practice	.21	.25	.18	1.41	[-.10, .59]
Peer Democratic	.07	.08	.11	.72	[-.14, .30]
Peer Autocratic	.07	.06	.10	.65	[-.13, .25]
Peer Social Support	-.04	-.04	.16	-.27	[-.35, .27]
Peer Positive Feedback	.09	.11	.13	.85	[-.14, .36]

Note. *beta* = estimated standardized beta; *B* = estimated unstandardized beta; CI = confidence interval.

p* < .05, *p* < .01, ****p* < .001

three significant relationships between the LSS Peer and OCS, suggesting the greater influence of the head coach leadership behaviors on athlete perceptions of action-based team culture.

Coach Training and Practice behavior significantly predicted scores of Information Sharing (*B* = .55, *p* = .002) and Meetings (*B* = .44, *p* = .011). Coach Democratic behavior showed a significant negative relation to Information Sharing (*B* = -.23, *p* = .016). This negative relationship was observed in the individual analysis of the LSS Coach and the OCS. However, it was not significant (*B* = -.13, *p* = .23). Coach Social Support was positively predictive of Involvement (*B* = .25, *p* = .031). Additionally, Coach Social Support behavior (*B* = .39, *p* < .001) and Coach Positive Feedback behavior (*B* = .29, *p* = .011) both possessed significant positive relationships to the OCS subscale Supervision, a subscale specific to the interpersonal behaviors of the head coach.

Coach Autocratic behavior demonstrated a significant negative relationship to Supervision (*B* = -.16, *p* = .024), suggesting that higher Coach Autocratic scores would relate to lower scores of Supervision. Peer Positive Feedback was significantly predictive of scores on Climate and Morale (*B* = .28, *p* = .044). This was the only subscale related to Climate and Morale. Peer Democratic

behavior was significantly related to Involvement (*B* = .35, *p* = .001) and Supervision (*B* = .17, *p* = .018). These findings demonstrate that perceptions of peer leadership behavior are significantly related to athlete perceptions of action-based team culture even after controlling for athlete perceptions of coach leadership behavior.

Discussion

The purpose of this study was to determine if athlete perceptions of leadership behaviors of the head coach and peer leaders are predictive of athlete perceptions of team culture. Overall, the results indicated that both the perceptions of head coach and peer leader behaviors were predictive of the way team culture is perceived by athletes, supporting the primary hypotheses of this study. An additional goal of this study was to determine the nature of peer leadership influence on perceptions of team culture when controlling for the perceptions of the head coaches' behavior. While a significant predictive relationship was evident, this study found that the ways in which athletes' perceptions of peer leaders influence their perceptions of team culture differ from that of their perceptions of the head coach. Specifically, perceptions of peer leadership behavior predicted more social aspects of culture, while the perceptions of the

head coach leadership behavior appeared to be more predictive of organizational components of team culture.

Coach Leadership Influence on Team Culture

The results of this study support the findings of Schroeder (2010) and Frontiera (2009) that head coach communication, information sharing, and feedback behaviors are closely tied to team culture. Specifically, results showed that perceptions of the head coach leadership behaviors of training and practice instruction, social support, and the use of positive feedback significantly related to athlete perceptions of action-based culture via information sharing, the effectiveness of meetings, and the interpersonal efforts of the head coach. The leadership behaviors of head coaches demonstrate the action-based components of team culture. This supports the assumption that the behaviors of head coaches can impact the way in which their athletes perceive the team culture.

The findings of the initial model suggest that collegiate athletes' perceptions of team culture are influenced by the way their head coach shares information and interacts socially with the team. This indicates that communication from the head coach during structured and unstructured time is considered valuable to collegiate athletes. Head coaches who are intentional in their interactions with their players, specifically during unstructured time, can positively influence team culture.

The results of this study also show that certain leadership behaviors of the head coach can possess a negative relationship with the athletes' perception of team culture. For example, autocratic leadership behavior, or the "my way" approach, provides athletes with little room for mutual discussion with their head coach (Frontiera, 2009). An environment that does not provide space for mutual discussion or agency within the group limits the positive benefits of group belonging (Frontiera, 2009; Nascimento-Júnior et al., 2018). These findings suggest that teams who perceive their coaches' leadership to be more autocratic will likely show fewer positive perceptions of team culture than those more democratic in nature.

Current literature highlights the effects of transformational leadership on the experience of team athletes (Bass & Avolio, 1994; Callow et al., 2009; Tucker et al., 2010). It is possible that this form of leadership will transcend the head coach leadership behaviors outlined in the LSS and add to the understanding of how head coaches can lead effectively to create a

positive team culture. It is recommended that future research investigate the impact that transformational leadership may have on collegiate athlete's experience and perception of team culture.

Peer Leaders Influence on Team Culture

Results of the second model showed that peer leaders offer their own unique influence on the perception of culture. Peer leaders in this study were any individual whom participants viewed as influential to the team, not necessarily a team captain. Descriptive statistics showed that over 40 percent of the leaders identified for this portion of the study were not team captains, and the majority of leaders chosen were upperclassmen. The perceptions of training and practice behavior, democratic behaviors and positive feedback were significantly related to perceptions of teamwork, climate and morale of the group, information sharing within the team, involvement, and meeting productivity. These findings are consistent with Loughhead and Hardy (2005) in their comparison between the way head coach and peer leaders are perceived on a team.

Athletes regarded their peer leaders in their ability to engage with the team through social behaviors, such as through the use of feedback and supportive interactions. This is taken in comparison to more organizational leadership behaviors of head coaches centered around critical feedback and practice structure. The social support offered by peer leaders can assist in the development of team social cohesion (Burkett et al., 2014; García-Calvo et al., 2014). Team leaders play an important role in their teammates' social experience of team culture.

This model showed perceptions of peer leadership training and practice behaviors related significantly to teamwork, information sharing, and meetings; demonstrating how communication between peer leaders and their teammates is valuable to team culture. This was similar to the perceptions of communicative behaviors by the head coach. Perceptions of peer leader use of positive feedback were positively related to perceptions of climate and morale, the subscale that conceptualizes trust and likeness within the group (Glaser et al., 1987). This suggests that the feedback given by peers can help shape a trusting environment within the team. The phrase "that's how we do things here" is a common sentiment regarding the expectation of a shared work ethic. Having shared behavioral expectations reinforced by peers can allow athletes to trust the commitment of their teammates to the larger group (Ntoumanis & Vazou, 2005).

Likewise, democratic behavior was significantly related to perceptions of involvement; as teammates create space for the insights of others, feelings of inclusion and value within the group are likely to be more positive. Peer leaders, through their social behaviors, help create the environmental aspect of culture. The perception of peer leadership behavior is uniquely connected to athlete perceptions of climate and morale, which was not a relationship found within the reports of head coach behavior. Through their actions, peer leaders can help cultivate feelings of trust, respect, and belonging within their team's culture. Previous research has shown positive relationships between peer behaviors and athlete experiences within their team context through constructs of team culture such as motivational climate (Ntoumanis & Vazou, 2005), perceived efficacy (Lent & Lopez, 2002), and team cohesion (Burkett et al., 2014; García-Calvo et al., 2014). However, as mentioned earlier, it is not sufficient to only know a concept by its parts alone; it is important to continue the expansion of study surrounding the influence that peer-leaders can have on athlete experiences of team culture.

Head Coach and Peer Leaders Influence on Team Culture

The actions of peer leaders are not independent of the actions of their head coach; such interrelated behaviors are important to account for when discussing team culture (McDougall et al., 2020). The results of a simultaneous analysis of the perceptions of the two leadership levels showed the perception of head coach instructional behavior had the most significant influence on athlete perceptions of culture. These findings are consistent with those of Loughead and Hardy (2005), who sought to compare the leadership behaviors of athlete leaders and head coaches using the LSS. They found that head coaches demonstrated instructional behaviors, while peer leaders demonstrated social support behaviors. The same relationships were found within the present study.

The results of the current study showed that all five demonstrations of leadership behaviors outlined by the LSS were related to team culture in a given way. Team culture perceptions of information sharing, involvement, supervision, and meetings were all related to perceptions of the head coach's leadership behaviors. These constructs highlight group processes like communication and collaboration, which are necessary for promoting effective group structure (Cruickshank & Collins, 2013; LaVoi, 2007; Schein & Schein, 2016).

Meanwhile, the peer leadership behaviors of positive feedback and democratic behavior were significantly related to climate and morale, involvement, and supervision. The way peer leaders provide feedback or the extent to which they include their peers in conversation about the workings of the teams can relate to feelings of trust, respect, and inclusion within the group. Information sharing was positively related to head coach instruction of training and practice and negatively related to democratic behaviors. It is suggested that providing too much space for discussion or additional input makes the translation of important knowledge difficult and can lead to uncertainty regarding roles and expectations (Beauchamp et al., 2005). As a result, head coaches provide a certain level of directiveness in the process of team decision-making to provide structure for team members.

Team culture is made up of many individuals working together to create a collective experience for all members (Hofstede et al., 1990; Schein & Schein, 2016). Everyone involved with the team has a different level of influence depending on their role within the group (Bosselut et al., 2012). This research found athletes perceive their peers as having more social influence within the team's culture, while their head coaches have more involvement in the group structures of the team itself. Understanding athlete perceptions of leadership and team culture allows collegiate coaches and additional team leaders to consider more intentionally how their position within the team can help support or thwart positive perceptions of team culture among their athletes. This knowledge can also allow for coaches to utilize their team leaders more directly during times of culture change or implementation, especially when responding to negative perceptions of culture.

Limitations and Future Directions

This study, while exploratory by nature, was privy to several limitations. The first limitation identified was insufficient recruitment methods. Recruitment occurred through email communication with NCAA head coaches which relied on receiving responses. This made data collection difficult and ultimately limited the scope of the sample. Research suggests the number of emails an individual can receive in a day can limit the effectiveness of using email as a recruitment tool (Sapleton & Lourenço, 2016). To build this line of research, more effective recruitment methods will be needed to obtain a more substantial sample size (Maxwell, 2004). Additionally, the amount of missing data within our sample proved to be a challenge. Although missing data were accounted

for prior to analyzing the data set, adjustments to recruitment methods and survey design should be considered for future research. A more complete data set would allow for the specific investigation of nested team data.

The sample demographics possessed limitations. The analyzed sample was primarily made up of athletes who identified as women (77%), and an overwhelming majority of participants identified as Caucasian/white (88.5%). A noticeable lack of diversity within the sample hinders the generalizability of findings to athletes of color or male athletes. While the comparison between gender identities was not a primary focus of this study, previous group dynamics research has shown that perceptions of cohesion do differ between athletes of different sexes (i.e., male and female) (Bruner, Boardley, et al., 2014; Bruner, Eys, et al., 2014). Study recruitment was also aimed specifically at interactive team sports due to the emphasis on collaborative efforts from group members to accomplish a task. However, coactive teams (or individual sports) are still comprised of group members who can share in a unique team culture. Exploring how team leadership and team culture are perceived by these “individual” athletes is recommended for future research.

The extent to which team culture is understood in the context of sport psychology could be considered a limitation; however, this supposed limitation served as the primary rationale for the present study. Future research can attempt to conceptualize team culture as it relates specifically to sport. While the use of tools from I/O psychology was beneficial for the purposes of this study, the identification of sport-specific elements of team culture will allow for more effective measures in the future. Such a measure would benefit both research and practical settings and would allow for more direct study of team culture in relation to the numerous variables that may be influential to the experience of sport team culture, such as team record (Cole & Martin, 2018), coach tenure (Schroeder, 2010), and larger sociocultural environments (Hofstede et al., 1990). Additionally, future research could continue to explore the ways head coaches can utilize peer leaders in fostering team culture.

Conclusion

In conclusion, the study of athlete perceptions of team leadership and team culture has shown how collegiate athletes conceptualize team culture. Athlete perceptions of head coach behaviors were related to perceptions

of action-based team culture through various group processes such as communication of instruction, feedback, and organizational structure. Additionally, athlete perceptions of peer leadership behaviors were related to perceptions of action-based team culture on a social level via inclusionary behaviors, instruction, and feedback. These findings provide practical insight into the specific ways head coaches and peer leaders can influence athlete experiences of culture within their teams. This study advances the understanding of team culture as athletes experience it themselves, not just from the perspective of head coaches. The continuation of this research will advance the conceptualization of team culture within sport and the understanding of how team culture is related to sport performance outcomes.

ORCID

Corinne T. Zimmerman

 <https://orcid.org/0000-0001-5279-7670>

Robin S. Vealey

 <https://orcid.org/0000-0002-4322-2194>

Nicholas D. Myers

 <https://orcid.org/0000-0001-9069-9940>

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