The Sport Psychologist, **(Ahead of Print)**
https://doi.org/10.1123/tsp.2020-0071

Human Kinetics
APPLIED RESEARCH

Gender (Dis)Similarity in Mentorship Among Intercollegiate Coaches: Implications for Leader Development

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Mentoring has been identified as an important antecedent for coaches' professional and leadership development. I examined how the gender composition of head coach and assistant coach mentorship moderates the relationship between the quality of mentorship and assistant coaches' leadership skills. The participants were 239 pairs of assistant and head coaches in U.S. college sports. The assistant coaches assessed the quality of mentorship with their head coaches, while the head coaches assessed their assistant coaches' leadership skills. Mentorship quality was generally related to assistant coaches' leadership skills, yet the relationships were positive and significant for dyads that involve female head coaches and not significant for dyads that involve male head coaches. The results indicate that gender composition may need to be considered in increasing the effectiveness of coaches' mentorship. The findings inform the current practices in the implementation of mentoring for coaches' leader development.

Keywords: coaching, leadership development, mentoring, women/gender differences

Effective leadership of coaches is considered a critical success factor for their athletes' performance, development, and overall experience within sport. Leadership has been generally defined as "the process whereby an individual influences a group of individuals to achieve a common goal" (Northouse, 2010, p. 3). Coaching leadership has been a major line of research inquiry in sport psychology, and various theories have been applied and proposed for coaches' leadership, which include the multidimensional model of leadership (e.g., Chelladurai, 2007; Chelladurai & Saleh, 1980), cognitive–behavioral model (Smoll & Smith, 1989), and the full range leadership model (Bass & Riggio, 2000).

Through the history of practices on coaches' professional development, practitioners have continued to explore "How do coaches become effective leaders?" and "How can coaches be developed as leaders?" However, coaching leadership theories and studies have mainly emphasized coaches' effective leadership behaviors and have not fully addressed leader development. Leader development can be defined as the process of learning skills to be effective leaders in an organization (Dragoni et al., 2009). Leadership skills in teams and organization focus on the leaders' tasks and connote leaders' capabilities needed to fulfill these leadership tasks (Mumford et al., 2007). Within teams and organizations, these leadership skills can be cognitive (e.g., speaking, active listening, and critical thinking), interpersonal (e.g., social perceptiveness and negotiation), managerial (e.g., operation analysis and management of personnel and financial resources), and strategic (e.g., system perception and evaluations; Mumford et al., 2007). These skills are shown to be directly related to leaders' career ranks in general business settings (Mumford et al., 2007), and past studies suggest that possessing these skills reflects one's development as a leader (e.g., DeRue & Wellman, 2009; Machida-Kosuga et al., 2017).

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Quality of Mentorship and Coaches' Leadership Skills Development

Leadership scholars (e.g., Day, 2001; McCauley et al., 2014) have consistently argued that effective mentoring is critical for one's leadership development. Mentors are individuals who have advanced knowledge and skills and who assist and provide protégés with psychosocial support for their career development (Ragins & Cotton, 1999). Mentoring may be formal, with a mentor assigned to a protégé, or informal, as encouraged by the organization (Day, 2001). Regardless of the formality, mentoring provides a significant developmental experience that provides support to developing leaders (Day, 2001; Lankau & Scandra, 2002). Findings from numerous studies are consistent with these scholars' claims; the presence of mentors provides protégés with both objective and subjective career benefits (i.e., salary/compensation, career satisfaction; e.g., see a meta-analysis by Allen et al., 2004).

Further, scholars in general organizational psychology have suggested that *the quality* of the mentorship may be more critical than the mere availability of mentors. The quality of mentorship may be defined as degrees of satisfaction toward mentorship, which includes colearning that occurs in the relationship (Allen & Eby, 2003; Ragins et al., 2000). For example, Ragins et al. (2000) showed that protégés who reported high satisfaction with their mentorship had more positive attitudes toward their jobs and careers than individuals who reported dissatisfaction with their mentors and nonmentored individuals. These findings suggest that the mere presence of a mentor does not automatically result in a positive outcome; instead, it is the quality of the mentorship that matters.

Mentorship is also identified as a facilitating factor for coaches' professional development (see also a review by McQuade et al., 2015). For example, a qualitative study by Bloom et al. (1998) showed that expert coaches had experiences of being mentored by their respective coaches both during their athletic and coaching careers. Their mentor coaches provided them with mentoring that taught them not only skills, but also important beliefs and values on coaching.

This, in turn, influenced the development of their personal coaching philosophy and knowledge, as well as their overall coaching abilities. Erickson et al. (2007) conducted retrospective interviews with high-performance coaches, quantified activities they engaged with in their development, and found that successful, high-performance coaches had interactions with mentor coaches during the early stages of their careers. A qualitative study on successful Canadian football coaches conducted by Rathwell et al. (2014) showed that they mentor their assistant coaches (ACs) in order to prepare them for head coaching positions by providing them with various opportunities to develop their coaching knowledge and abilities. Further, another qualitative study with successful Canadian university coaches showed that mentorship with more experienced coaches was one of the key factors in developing successful university athletic programs (Donoso-Morales et al., 2017). Zakrajsek et al. (2020) also showed in their qualitative study that effective interactions with head coaches (HCs) are critical in ACs' basic needs satisfaction and motivation, and their professional development.

Though these studies have identified mentorship as an element that is instrumental to coaches' development, the studies have not quantitatively and systematically examined the influences of the quality of mentorship on junior coaches' leadership skills development. The literature indicates that it is necessary to examine both the *quantity* (or availabilities) of mentorship experiences and their *quality* to assess how they may build leadership skills. In the context of intercollegiate sport, the HC is often the coach with whom the AC interacts on a daily basis. The quality of such relationships, specifically the mentorship that occurs between them, should be integral to ACs' leadership skills development (e.g., McQuade et al., 2015).

The Influences of Gender Composition on the Effectiveness of Mentoring

Though mentorship quality may generally relate to protégés' development, scholars have pointed out that the gender composition of mentorship may also influence its outcomes. Social groups associated with gender are perceived to have different degrees of power in society, and Ragins (1997a, 1997b) argued that the perceived similarity between mentors and protégés may promote mentoring effectiveness. When protégés perceive that their mentors belong to a social group (e.g., gender) that has a different degree of power, this perceived incongruence may create differences in the mentoring outcome. Power similarities between mentors and protégés are seen to enhance the identification and role modeling of protégés. However, Ragins (1997a, 1997b) also suggested that mentorship involving mentors from minority groups (i.e., groups that are perceived to have less power in the organization) may produce less career development outcomes than mentorship involving mentors from majority groups and noted that protégés in both majority and minority groups may have the tendency to underestimate minority mentors, and acceptance of minority mentors may better facilitate one's career development.

Empirical studies in general organizational psychology have examined such effects of mentor-protégé gender composition on mentoring outcomes, and generally showed that male protégés with male mentors benefit the most from their mentorships (e.g., Dougherty et al., 2013; Ragins & Cotton, 1999; Tharenou, 2005), though one study reported no significant effect of gender composition on mentoring outcomes (i.e., job and career attitudes: Ragins et al., 2000). Studies in sport have also investigated the influences of the gender composition of ACs and HCs on their mentorship and career outcomes, but the results are rather equivocal. Sagas et al. (2005) reported that relational demographics (i.e., the similarity in age, tenure, marital and parental status, and gender) were not significant predictors of ACs' aspiration for HC positions and perceived supervisor support. Avery et al. (2008) also showed that coaches who had same-gender mentors reported more psychosocial mentoring than those who had opposite gender mentors. Moreover, the results showed that, when female coaches had mentors who were European American males, they reported similar degrees of career mentoring to male coaches with male mentors. Further, studies have emphasized the importance of female mentors to promote the career development of female coaches who aspire to advance their coaching careers (e.g., see also a review by Burton, 2014).

Overall, the findings on the influences of gender composition on coach mentorship are mixed and inconclusive. Conflicting results from the past studies may be due to a lack of consideration of its interactions with mentorship quality. Also, studies on the effects of the gender composition of coach mentorship have to this point only examined the gender similarity or the presence of female and male mentor coaches. Examining the differences of four gender composition groups (i.e., female AC and female HC dyads, female AC and male HC dyads, male AC and female HC dyads, male AC and male HC dyads) would provide additional insights into the literature on this topic and for future practices that target leader development of coaches. The study examined the hypothesis that mentorship quality is related to ACs' leadership skills and further investigated the moderating roles of the gender composition of mentorship in the relationship between mentorship quality and the leadership skills of ACs. Specifically, the study hypothesized that there was a stronger positive relationship between mentorship quality and leadership skills for ACs who are mentored by female HCs than for those who are mentored by male HCs, and this trend would be observed for both female and male ACs. As suggested by theory and several studies of mentorship (Dougherty et al., 2013; Ragins, 1997a, 1997b), the advantages of having male mentors may be present, especially in male-dominated career fields. The social and capital resources that are provided through mentorship by male mentors may have significant influences on protégés' leadership skills development. Also, Ragins (1997a, 1997b) noted that protégés in both majority and minority groups may have the tendency to underestimate minority mentors, but acceptance of minority mentors may better facilitate one's career development. Thus, when mentorship with female HCs is perceived to be of high quality, both female and male ACs may become more open to opportunities and support that female HCs provide for their development. The quality of mentorship may work as a catalyst to negate the potential disadvantages of female mentors in male-dominated fields such as intercollegiate coaching. Because there are advantages associated with male mentors in such fields, for both female and male ACs who are mentored by male HCs, the quality of mentorship may be less influential to their development of leadership skills.

Method

Participants

The participants were ACs and HCs of women's intercollegiate teams across the United States. Because there are few female

coaches in men's-only teams (i.e., 2.0–3.5% of men's teams are headed by female coaches: Acosta & Carpenter, 2014), coaches from women's or women and men's teams were sampled in order to build a meaningful comparison between different gender composition groups. Data were obtained from 239 pairs of ACs (female: $n = 161$, male: $n = 78$) and HCs (female: $n = 125$, male: $n = 114$). Among these dyads, 95 coached in the National Collegiate Athletic Association Division I, 49 coached in Division II, 93 coached in Division III, and two coached in the National Association of Intercollegiate Athletics. The majority of the ACs identified themselves as European American ($n = 208$, 87%), with small percentages of ACs identifying other ethnic categories, including African American ($n = 10$, 4.2%), Hispanic ($n = 7$, 2.9%), Native American ($n = 4$, 1.7%), Asian ($n = 3$, 1.3%), and other and interracial totaling 2.9% ($n = 7$). Also, the majority of the HCs identified themselves as European American ($n = 211$, 88.3%), while seven indicated African American (3%), six indicated Native Americans (2.5%), four indicated Hispanic (1.7%), two indicated Asian American (0.8%), one indicated Pacific Islander (0.4%), those who indicated others and interracial totaled 2.1% ($n = 5$), and three did not respond to the question. The mean age of the ACs was 29.89 years ($SD = 8.07$). On average, the ACs had 5.92 years of coaching experience ($SD = 5.36$) and had been working under their current HCs for 3.75 years ($SD = 3.62$). The mean age of the HCs was 42.58 years ($SD = 11.03$). They had, on average, 16.27 years ($SD = 9.68$) of coaching experience. These dyads of ACs and HCs represented 24 different sports and reported that they coach women's teams only ($n = 174$) or both women's and men's teams ($n = 65$).

Measures

Mentorship Quality. A 10-item mentoring relationship quality and learning measure (Allen & Eby, 2003) was used to assess mentorship quality. ACs indicated their agreement with each item statement, based on a 5-point Likert scale that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items included "The mentoring relationship between my head coach and I was very effective" and "My head coach and I were 'co-learners' in the mentoring relationship." Tallied scores (i.e., composite scores) were used to indicate their mentorship quality with HCs. Though the scale has not been used in sport settings, the scale has been successfully used in mentorship literature and has been shown to meet the criteria for acceptable validity and internal consistency (Allen & Eby, 2003). Cronbach's alpha of the scale was .96.

Leadership Skills. HCs assessed the leadership skills of their ACs. Leadership skill taxonomy of Mumford et al. (2007) was utilized in this study. The scale consisted of four skill dimensions: cognitive skills (i.e., skills that relate to one's cognitive capacities and serve as a foundation for other leadership skills: six items, e.g., "speaking: talking to others to convey information effectively"); interpersonal skills (i.e., skills related to influencing others and building meaningful relationships: four items, e.g., "persuasion: persuading others to change their minds or behavior"); business skills (i.e., skills pertinent to creating a productive work context: four items, e.g., "management of personnel resources: motivating, developing, and directing people as they work"); and strategic skills (i.e., conceptual skills related to having an impact on an organization: seven items, e.g., "identification of downstream consequences: determining the long-term outcomes of a change in operations"). The scale has been shown to be reliable and valid in past studies (DeRue & Wellman, 2009; Mumford et al., 2007). However, preceding the data collection, three experienced coaches (who had at least 2 years of intercollegiate coaching experience and are familiar with psychological assessments) assessed the relevancy of each scale item in regard to coaching. Their feedback was utilized to modify certain items. For example, the item "Operation analysis (analyzing needs and product requirements to create a design)" was changed to "Operation analysis (analyzing team needs and performance requirements to create a successful program)." HCs indicated the extent to which their ACs demonstrated each of the skills, based on a 5-point Likert scale from 1 (*not at all*) to 5 (*to a very large extent*). For this study, the scores were tallied (i.e., composite score) to indicate ACs' leadership skills to be consistent with other leader development studies (DeRue & Wellman, 2009; Machida-Kosuga et al., 2017). The scale showed excellent internal consistency ($\alpha = .95$).

Procedures

The data for this study were collected through the Qualtrics (Qualtrics, Provo, UT) online survey platform. During recruitment of the participants, teams were identified by tabulating a complete list of all the universities that were registered through National Collegiate Athletic Association. Coaches' email addresses were obtained by visiting each university's athletic websites. Once coaches were identified, email invitations were sent to all ACs whose emails were valid. A total of 6,404 emails were sent. As part of the survey, the ACs provided their HC's email addresses. The HCs were then sent emails with survey invitations, providing information to evaluate their ACs' leadership skills. A total of 674 ACs participated in the survey (response rate: 10.52%), and 541 emails of HCs were provided through ACs' surveys. The response rate of HCs was approximately 44%. All ACs who completed the survey were offered a $5 online Starbucks gift card. HCs were not compensated for participating in the study. The participants were presented with informed consent on the first page of the survey and indicated their agreement by proceeding with the survey. These research procedures were approved by the Michigan State University institutional review board.

Analysis

Preliminary analyses (i.e., descriptive analyses, analyses of variance) and main analyses (i.e., ordinary least squares [OLS] regression) were conducted with IBM SPSS (version 26, IBM Corp., Armonk, NY). Composite scores (i.e., mean of the items) of mentorship quality and leadership skills ratings were utilized for the analyses. Gender compositions of AC and HC dyads were categorized into four groups: (a) female AC and female HC ($n = 89$), (b) female AC and male HC ($n = 72$), (c) male AC and female HC ($n = 36$), and (d) male AC and male HC ($n = 42$).

To conduct the OLS regression analyses, dummy coding was utilized to indicate the gender composition of the AC and HC dyads groups. Three dummy-coded variables were created for the following groups: female AC and female HC dyads, female AC and male HC dyads, and male AC and female HC dyads. Each participant was coded "0" or "1" to each variable. The male AC and male HC dyad groups served as a reference group (i.e., participants in male AC and male HC dyads group were coded "0" to all the three dummy-coded variables).

In order to test the moderating effect of AC and HC gender composition, the main effects of mentorship quality (Step 1) and three gender composition dummy-coded variables (Step 2) were entered into the OLS regression analysis. Then, all three interaction

variables of mentorship quality and dummy-coded variables of gender composition dyad groups were included in one block (Step 3). Mentorship quality scores were mean centered. For the post hoc analyses of moderation, the procedures proposed by Aiken and West (1991) were followed, where simple slopes in high (+1SD) and low (−1SD) mentorship quality were investigated for each gender composition dyad group.

Results

Preliminary Analysis

The data showed no marked nonnormality (i.e., skewness and kurtosis; Kolmogorov–Smirnov and Shapiro–Wilk; histogram, stem-and-leaf plot, normal probability plot, and detrended normal probability plot). Descriptive statistics on the study variables are presented in Table 1. A 2 × 2 (HC gender × AC gender) two-way analysis of variances was conducted on the study variables. Levene's test results supported the equal error variance across groups, and the results showed that there was no significant interaction observed in mentorship quality or leadership skills, $F(1, 235) = 2.223$, $p = .137$, $\eta^2 = .009$, $F(1, 235) = 0.761$, $p = .384$, $\eta^2 = .003$, respectively. The main effects of AC gender on both mentorship quality and leadership skills were found to be not significant, $F(1, 235) = 1.675$, $p = .197$, $\eta^2 = .007$, $F(1, 235) = 0.067$, $p = .797$, $\eta^2 < .001$, respectively. While the main effect of HC gender on mentorship quality was not significant, $F(1, 235) = 0.130$, $p = .719$, $\eta^2 = .001$, the main effect of HC gender on leadership skills was statistically significant, $F(1, 235) = 5.739$, $p = .017$, $\eta^2 = .024$. Although the effect size was small, leadership skills were higher among female and male ACs who were mentored by male HCs than those mentored by female HCs. In addition, zero-order correlation showed that there was a positive and statistically significant relationship between mentorship quality and ACs' leadership skills ($r = .135$, $p = .037$).

Main Analysis

Study hypotheses were tested using the OLS regression model. First, the effect of mentorship quality on leadership skill ratings was examined. The model results showed a significant and positive relationship between mentorship quality and leadership skill ratings ($\beta = 0.135$, $p = .037$; see Table 2), which supported the hypothesis that ACs and HCs' mentorship quality positively relates to the leadership skills of ACs.

Next, in order to examine the interactions of mentorship quality and gender composition of AC and HC dyads, the steps provided by Aiken and West (1991) were followed. The results are presented in Table 2. After the main effects of mentorship quality were entered in the first step, the three dummy-coded variables of the gender composition dyad groups were included in the second step. The results of the second step showed that the block of dummy-coded variables of gender composition did not add significant explanatory power to the model ($\Delta R^2 = .025$, $p = .109$). Proceeding forward with the third step, all interaction variables of all mentorship quality and gender composition dyad groups were entered into one block. The block of interactions produced a significant increase in the amount of variance explained in the ACs' leadership skills ($\Delta R^2 = .049$, $p = .007$). Thus, the results indicate that the relationships between mentorship quality and leadership skills are different among the four gender composition dyad groups.

Post Hoc Analyses of Interactions

Examinations of simple slopes in high (+1SD) and low (−1SD) mentorship quality were conducted as post hoc analyses (Aiken & West, 1991; see Table 3 for the results). In an interaction analysis, a simple slope for the reference group is represented in the slope (i.e., coefficient) of the independent variable in the main regression analysis (i.e., because it denotes "0" to all three dummy-coded variables). Thus, the slope of mentorship quality in Step 3 of the main regression analysis indicates a simple slope for male AC and male HC dyad groups (see Table 2; $\beta = 0.216$, $p = .103$). Consequently, for post hoc, simple slope analyses, each of the other gender composition dyad groups (i.e., female AC and female HC, female AC and male HC, male AC and female HC) served as a reference group. Having each gender composition dyad group serving as a reference group, I repeated three OLS regression analyses with a predictor (i.e., mentorship quality) and three moderator variables (i.e., dummy-coded variables of gender composition dyad groups), with their interaction variables grouped in one block.

The results are presented in Table 3, and the slopes for four gender composition dyad groups are plotted in Figure 1 using +1SD and −1SD values of mentorship quality. There were significant and positive relationships between mentorship quality and leadership skills among female AC and female HC dyads ($\beta = 0.369$, $p = .003$), and male AC and female HC dyad groups ($\beta = 0.328$, $p = .037$). However, there was no significant relationship identified between mentorship quality and leadership skills among female AC and male HC ($\beta = 0.110$, $p = .318$), and male AC and male HC dyad groups (see Table 2; $\beta = -0.216$, $p = .103$). Thus, regardless of ACs' gender, there was a significant and positive relationship between mentorship quality and ACs' leadership skills among ACs who are mentored by female HCs, but the relationship was not significant among ACs who are mentored by male HCs.

Discussion

The purpose of this study was to examine the relationship between AC and HC mentorship quality and the leadership skills of ACs in U.S. intercollegiate sport. Additionally, the interaction of mentorship quality and gender composition of AC and HC dyads on ACs'

Table 1 Descriptive Statistics on Study Variables Across Gender-Composition Dyads (*N* = 239)

	Total						F AC						M AC					
	F HC (*n* = 125)		M HC (*n* = 114)		Total (*N* = 239)		F HC (*n* = 89)		M HC (*n* = 72)		Total (*n* = 161)		F HC (*n* = 36)		M HC (*n* = 42)		Total (*n* = 78)	
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Mentorship quality	4.08	0.79	3.96	0.93	4.02	0.86	4.17	0.73	3.95	0.90	4.07	0.82	3.84	0.90	3.98	0.99	3.91	0.94
Leadership skills	3.91	0.67	4.08	0.53	3.99	0.61	3.94	0.71	4.06	0.53	3.99	0.64	3.84	0.58	4.12	0.54	3.99	0.57

Note. AC = assistant coach; F = female; HC = head coach; M = male.

Table 2 Regression Analyses Results: Leadership Skills on Mentoring by HC and Gender Composition of Dyad ($N = 239$)

	Coefficient			Confidence interval	
	B	β	β	95% LL	95% UL
Step 1					
Constant	3.992				
Mentorship quality	.096	.135	.037	.006	.186
R^2			.018		
Step 2 (adding gender composition predictors)					
Constant	4.121				
Mentorship quality	.100	.141	.030	.010	.191
Female AC and female HC	−.201	−.158	.079	−.425	.024
Female AC and male HC	−.050	−.037	.674	−.281	.182
Male AC and female HC	−.263	−.153	.058	−.534	.009
R^2			.043		
ΔR^2			.025, $p = .109$		
Step 3 (adding interactions)					
Constant	4.109				
Mentorship quality	−.154	−.216	.103	−.339	.031
Female AC and female HC	−.213	−.168	.058	−.434	.007
Female AC and male HC	−.039	−.030	.733	−.267	.188
Male AC and female HC	−.227	−.133	.098	−.496	.042
Mentorship quality × Female AC and female HC	.417	.306	.001	.165	.669
Mentorship quality × Female AC and male HC	.232	.187	.059	−.009	.473
Mentorship quality × Male AC and female HC	.388	.222	.008	.101	.675
R^2			.092		
ΔR^2			.049, $p = .07$		

Note. Male AC and male HC group as a reference group. AC = assistant coach; HC = head coach. LL = lower limit, UL = upper limit.

leadership skills was investigated. The results generally supported the hypothesis that mentorship quality is positively associated with ACs' leadership skills. Past studies have indicated that the availability of mentors is critical to coaches' development (e.g., Bloom et al., 1998; McQuade et al., 2015). The present study extended the previous findings and showed that high-quality mentorship may be important to junior coaches' development of leadership skills. Consistent with the claims posed in general organizational psychology (e.g., Ragins et al., 2000), not only is the availability of mentors important to the protégés' leadership skills development, but the quality of such mentorship may also be critical.

However, in an investigation of the moderating effect of the gender composition of AC and HC dyads on the relationship between mentorship quality and leadership skills, the results showed that the relationship between mentorship quality and leadership skills is different between ACs who are mentored by female HCs and those mentored by male HCs. Mentorship quality with female HCs was positively related to both female and male ACs' leadership skills, while the quality of mentorship with male HCs was not related to both female and male ACs' leadership skills. The results suggest that, regardless of the gender of ACs, increasing mentorship quality with HCs may be important for their leadership skills development if HCs are female, but it may not be the case if HCs are male.

Past studies suggest that mentors who belong to majority groups in the field (i.e., male mentor coaches in intercollegiate coaching) may produce greater career outcomes (e.g., Avery et al., 2008; Ragins & Cotton, 1999), and Ragins (1997a, 1997b) indicated that protégés tend to underestimate minority mentors. However, Ragins (1997a, 1997b) also claimed that, as protégés accept their minority mentors, they will be more susceptible to the opportunities and support provided by their mentors. The present study partially supports this claim. Though mentorship quality with male HCs does not matter to both female and male ACs, mentorship quality with female HCs is critical; when the mentorship with the female HC is perceived to be of low quality, ACs may not be open to opportunities and support that female HCs may be providing for their development. Yet, as their mentorship quality increases, ACs may maximize the developmental experiences provided by their female HCs to advance their leadership careers. While these findings implicate the possibilities that mentorship quality may negate perceived disadvantages of female mentor coaches in the career advancement of junior coaches, these results also suggest that additional burden may be placed on female mentor coaches, as suggested by scholars (e.g., Avery et al., 2008; Ragins 1997a, 1997b; Ragins & Cotton, 1999). The present study provides unique insights into the complex interactions of mentorship quality and gender composition of mentorship, and it warrants further investigations.

Applied Implications for Sport Psychologists

Sport psychology practitioners' roles in coaches' development have been well recognized (e.g., Demers et al., 2006; Harwood, 2008).

Table 3 The Results of Post Hoc Simple Slope Analysis

	B	*SE*	β	*p*
Female AC and female HC (as a reference group)				
Constant	3.896	.064		
Mentorship quality	.263	.087	.369	.003
Male AC and male HC	.213	.112	.132	.058
Male AC and female HC	−.014	.120	−.008	.909
Female AC and male HC	.174	.095	.130	.069
Mentorship quality × Male AC and male HC	−.417	.128	−.278	.001
Mentorship quality × Male AC and female HC	−.029	.141	−.017	.837
Mentorship quality × Female AC and male HC	−.185	.117	−.149	.114
R^2		.092		
Female AC and male HC (as a reference group)				
Constant	4.070	.070		
Mentorship quality	.078	.078	.110	.318
Male AC and male HC	.039	.116	.024	.733
Male AC and female HC	−.188	.123	−.109	.129
Female AC and female HC	−.174	.095	−.137	.069
Mentorship quality × Male AC and male HC	−.232	.122	−.155	.059
Mentorship quality × Male AC and female HC	.156	.136	0.089	.253
Mentorship quality × Female AC and female HC	.185	.117	0.136	.114
R^2		.092		
Male AC and female HC (as a reference group)				
Constant	3.882	.101		
Mentorship quality	.234	.111	.328	.037
Male AC and male HC	.227	.136	.141	.098
Female AC and female HC	.014	.120	.011	.909
Female AC and male HC	.188	.123	.140	.129
Mentorship quality × Male AC and male HC	−.388	.146	−.259	.008
Mentorship quality × Female AC and female HC	.029	.141	.021	.837
Mentorship quality × Female AC and male HC	−.156	.136	−.126	.253
R^2		.092		

Note. AC = assistant coach; HC = head coach.

The results of the study hold implications to practices that focus on coaches' career and leader development. First, the study demonstrated that not only the availability of a mentor but also the quality of mentorship that exists between ACs and HCs is important for the development of ACs' leadership skills. Increasing the quality of mentorship can be challenging and requires the efforts of both mentors and protégés (Allen & Eby, 2003). Individual attitude, such as a willingness to learn from each other, is identified as being integral to the development of productive mentorship (Allen & Poteet, 1999). In the U.S. intercollegiate sport teams, ACs and HCs are assigned by the organizations, and mentorships between ACs and HCs are expected to take place. To maximize the impact of such mentorship, it is important for practitioners to assess the quality of mentorship, perhaps using the questionnaire utilized for the present study, and intervene in their mentorship as necessary to improve its quality.

Also, the results reveal that practitioners may need to pay attention to the gender compositions of ACs and HCs; increasing mentorship quality may be particularly helpful for mentorship that involves female HCs in terms of ACs' leadership skills development. Though previous literature indicated advantages of male mentors in a protégé's career development in male-dominated career fields (e.g., Avery et al., 2008; Ragins & Cotton, 1999), the findings from the present study suggest that mentorship with female mentors may also be equally beneficial in leadership skills development of protégés when there is a high-quality mentorship between them. Ragins (1997a, 1997b) suggested that facilitating the acceptance of minority mentors may yield benefits for protégés who may not be susceptible to minority mentors. Thus, for practitioners, facilitating the ACs' acceptance of female HCs as mentors, perhaps by intervening in their communication and relationship-building strategies, to improve mentorship quality between them may be needed.

However, the results also suggest that improving mentorship quality with male HCs may have no meaningful impact on ACs' leadership skills development. Practitioners and HCs who work with ACs need to pay close attention to their development, even if they perceive their mentorship with their HCs to be effective. They also need to look for other ways by which their leadership skills development can be facilitated (e.g., providing challenging experiences and feedback; Machida-Kosuga et al., 2017).

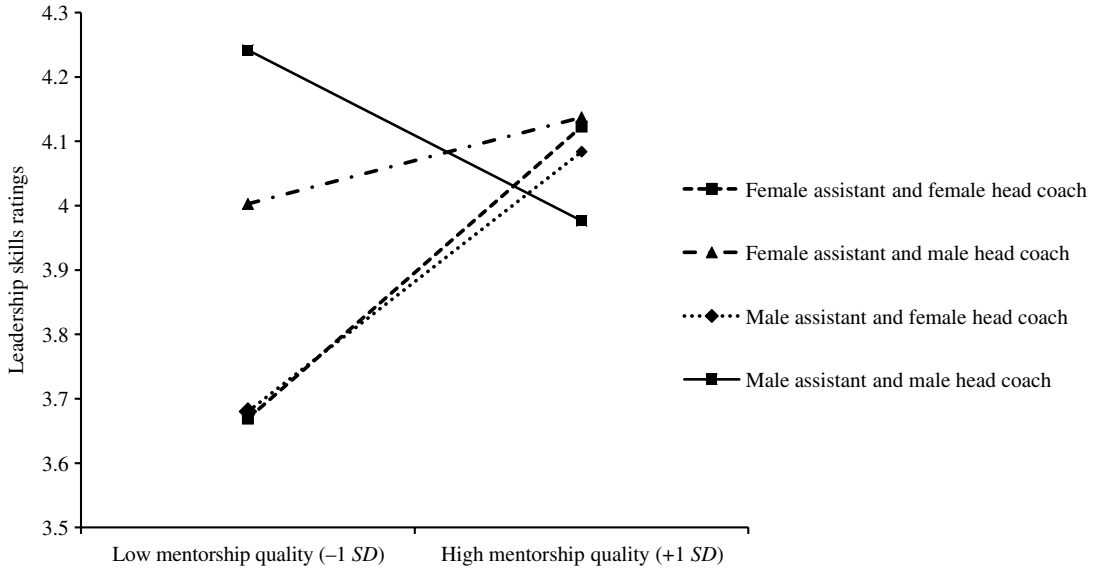

Figure 1 — The plot of interactions for mentorship quality and assistant and head coach gender composition on assistant coaches' leadership skills. *Note.* The equation for the plots was from the results of the main analysis presented in Table 2.

Study Strengths, Limitations, and Future Directions

One of the strengths of this study was the use of multiple data sources. Data were collected from both ACs and HCs to assess the independent variable (i.e., mentorship quality assessed by ACs) and dependent variable (i.e., leadership skills assessed by HCs) to avoid common method biases (Podsakoff et al., 2003), which has been a major issue raised in the literature. Small effect sizes found in the study may be attributed to the study design, which attempted to avoid this issue. The findings may need to be replicated in future studies. In addition, although the present study considered the gender of both ACs and HCs and provided insights into complex relationships between mentorship and leader development, future studies should also consider other important demographic factors that may play roles in the influences of mentorship. For example, the majority of participants in this study identified themselves as European American, and it was difficult to investigate the influences of the racial composition of mentorship. Examining the influences of both the gender and racial composition of mentorship should extend the understanding of the roles of mentorship in coaches' leader development.

Though the study selected measurements that were well based on the theory (Allen & Eby, 2003; Mumford et al., 2007) and best fit to the study purposes, the measurements used had been developed in the general management context rather than in a sport-specific context. Currently, there is no established measurement that assesses mentorship quality and leadership skills in coaching in sport settings. In particular, more consideration is needed for the leadership skills assessment. In the organizational psychology literature, scholars have advocated for the need to examine leaders' skills rather than the characteristics or behaviors of leaders (Mumford et al., 2007). The currently available leadership assessments used in sport settings (e.g., Leadership Scale for Sport: Chelladurai & Saleh, 1980; Differentiated Transformational Leadership Inventory: Callow et al., 2009) measure leaders' behaviors rather than leadership skills. Prior to the present study, experienced coaches assessed the relevancy of items, and the items were modified as needed, and the assessment showed acceptable reliability; however, future studies may consider developing a new assessment for leadership skills specifically for coaches. Also, for the present study, only HCs were asked to assess the leadership skills of ACs. Future studies may also consider having the players assess coaches' leadership skills for further insights.

Though the study is based on notions that are proposed in theory and literature on mentorship and leadership (Day, 2001; McCauley et al., 2014; Ragins, 1997a, 1997b), this study is cross-sectional in nature, and it is not possible to establish a causal relationship. Scholars may consider taking a longitudinal study approach to track the progress of the leadership skills development of ACs. Also, as shown in the results, mentorship quality only explains a part of the variance in ACs' leadership skills. More investigation is needed to examine other factors that contribute to their leadership skills development. Furthermore, it is still unclear how the quality of mentorship between ACs and HCs can be increased to facilitate the leadership skills development of ACs. Several studies have reported some strategies that can be employed to improve the mentorship quality between mentors and protégés, such as establishing an open communication system and working on common tasks (e.g., Allen & Poteet, 1999). Future studies should investigate how mentorship quality can be improved in intercollegiate coaching fields.

Conclusion

How coaches can be developed as leaders remains an important and relevant topic in sport psychology. Based on collected data from both HCs and ACs in intercollegiate sport teams, the results suggest the general importance of mentorship quality for ACs' leadership skills. The findings also revealed its complex interactions with the gender composition of ACs and HCs in their mentorship. Future studies and practices should further examine and consider

mentorship quality and the gender composition of mentorship to maximize junior coaches' leadership development.

Acknowledgments

The data presented are partly from my doctoral dissertation at Michigan State University. I published a paper using data from my doctoral dissertation project (Machida-Kosuga, M., Schaubroeck, J., Gould, D., Ewing, M., & Feltz, D., 2017; What influences collegiate coaches' intentions to advance their careers? The roles of leader self-efficacy and outcome expectancies. *International Sport Coaching Journal, 4,* 265–278). However, I would like to note that this published paper examined completely different variables and research questions from what were examined in the present study. The study was partly supported by the 2010 College of Education, Michigan State University, Dissertation and Research Practicum Support Fellowship, and the 2011 College of Education, Michigan State University, Dissertation Completion Fellowship. Work was also partly supported by JSPS Grant-in-Aid for Young Scientists (B), Grant Number JP17K13167. I would like to thank Andy Driska, Lisa Griffiths, and Evie Oregon for their comments and feedback on the measurements; Sarah Parks, Christina Miller, Kristen Kelsay, and Phillip Pratts for their assistance in the study process; and Dr. Ryosuke Uchida for his advice on the analyses. Additionally, I would like to acknowledge the contribution of Dr. Deborah Feltz—a chair of my dissertation committee—and Dr. John M. Schaubroeck, Dr. Dan Gould, and Dr. Martha Ewing, the committee members.

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