THE IMPLEMENTATION OF A NEW PROGRAM OF LEADERSHIP DEVELOPMENT WITH FEMALE VARSITY ATHLETES: A PILOT STUDY

Ashley Michelle Duguay
University of Windsor

Follow this and additional works at: https://scholar.uwindsor.ca/etd

Recommended Citation
https://scholar.uwindsor.ca/etd/5228
THE IMPLEMENTATION OF A NEW PROGRAM OF LEADERSHIP DEVELOPMENT WITH FEMALE VARSITY ATHLETES: A PILOT STUDY

by

Ashley M. Duguay

A Thesis
Submitted to the Faculty of Graduate Studies through the Department of Kinesiology in Partial Fulfillment of the Requirements for the Degree of Master of Human Kinetics at the University of Windsor

Windsor, Ontario, Canada

2014

© 2014 Ashley M. Duguay
THE IMPLEMENTATION OF A NEW PROGRAM OF LEADERSHIP DEVELOPMENT WITH FEMALE VARSITY ATHLETES: A PILOT STUDY

by

Ashley M. Duguay

APPROVED BY:

______________________________________________
Dr. M. El-Masri
Faculty of Nursing

______________________________________________
Dr. K. Chandler
Department of Kinesiology

______________________________________________
Dr. T. Loughead, Advisor
Department of Kinesiology

August 25, 2014
DECLARATION OF ORIGINALITY

I hereby certify that I am the sole author of this thesis and that no part of this thesis has been published or submitted for publication.

I certify that, to the best of my knowledge, my thesis does not infringe upon anyone’s copyright nor violate any proprietary rights and that any ideas, techniques, quotations, or any other material from the work of other people included in my thesis, published or otherwise, are fully acknowledged in accordance with the standard referencing practices. Furthermore, to the extent that I have included copyrighted material that surpasses the bounds of fair dealing within the meaning of the Canada Copyright Act, I certify that I have obtained a written permission from the copyright owner(s) to include such material(s) in my thesis and have included copies of such copyright clearances to my appendix.

I declare that this is a true copy of my thesis, including any final revisions, as approved by my thesis committee and the Graduate Studies office, and that this thesis has not been submitted for a higher degree to any other University or Institution.
ABSTRACT

The purpose of the current study was to develop, implement, and examine a new program of leadership development with varsity athletes. The sample comprised 27 varsity athletes ($M_{\text{age}} = 20.30$, $SD = 2.07$) who were assigned to a rookie ($n = 7$), emerging ($n = 11$), or veteran ($n = 9$) leader group based on their year of tenure. Each group participated in four workshops over the course of a season focused on developing both leader (human capital) and leadership (social capital) capabilities. In terms of leader development, results indicated significant increases in ratings of the use of eight of 10 targeted leader behaviors from pre-intervention to post-intervention. In terms of leadership development, results indicated significant increases in ratings of task-involving climate, team integration, personal development, and team performance as well as a desired significant decrease in ratings of ego-involving climate.
ACKNOWLEDGEMENTS

This thesis would not have been possible without the support of many people. First and foremost I would like to thank my advisor, Dr. Todd Loughead. Under your guidance, I have been provided a number of challenging academic and professional opportunities that have helped me develop as a student, researcher, and person. I count myself extremely fortunate not only to have been mentored by such a prominent scholar but also to have been trusted with this project. I am excited to continue learning from your example and am grateful to continue my graduate studies under your leadership. I would also like to thank Dr. Krista Chandler for her valuable insight and feedback on my thesis. Your passion for and knowledge of our field is inspiring. I look forward to working with you in the future. To Dr. Maher El-Masri, thank you for agreeing to be a member of my thesis committee. Your feedback, time, and knowledge were much appreciated.

I would also like to extend an enormous thank you to the members of the Sport and Exercise Psychology Lab. Having had the opportunity to work with and learn from each of you every day is a big part of what made my experience here at the University of Windsor so memorable.

Above all, I would like to thank my family whom this thesis is dedicated to. To my parents, Anne Marie and Mitch Duguay, words cannot describe what your love and support has meant to me over the years. My passion for sports and learning is grounded in the foundation you both built for me. I am forever grateful for the leadership you have provided and the examples you have set. To my brother, Jordan, thank you for always believing in me. Seeing how hard you have work these past few years helped inspire me
when challenges arose. Your support has meant more to me than you will ever know. Finally, to Dawn, I could not have done this without you. Thank you for your selfless sacrifice in helping me accomplish this goal. Your unwavering confidence in me always shone through when I needed it most. I am beyond grateful to have had you by my side throughout this journey!
TABLE OF CONTENTS

DECLARATION OF ORIGINALITY ................................................................. iii
ABSTRACT ........................................................................................................ iv
ACKNOWLEDGEMENTS .............................................................................. v
LIST OF TABLES ........................................................................................... ix
LIST OF FIGURES .......................................................................................... x
LIST OF APPENDICES ................................................................................ xi
RESEARCH ARTICLE ..................................................................................... 1

Introduction ................................................................................................. 1
Method ........................................................................................................... 10
Participants ................................................................................................. 10
Measures ...................................................................................................... 11
Procedure .................................................................................................... 19
Intervention ................................................................................................. 20
Data Analysis ............................................................................................... 22
Results ......................................................................................................... 22
Missing Data ............................................................................................... 22
Descriptive Statistics .................................................................................. 23
Main Analyses ............................................................................................ 25
Effect Sizes ................................................................................................. 27
Discussion .................................................................................................... 28
References .................................................................................................... 40
Tables ............................................................................................................ 50
LITERATURE REVIEW ................................................................................ 68
Leadership ................................................................................................. 68
Leadership Development .......................................................................................................................... 86
References .................................................................................................................................................. 103
Figures .................................................................................................................................................... 114
APPENDICIES .......................................................................................................................................... 117
VITA AUCTORIS ...................................................................................................................................... 136
LIST OF TABLES

Table 1      Athlete Leadership Development Intervention ........................................50
Table 2      A Description of the Athlete Leadership Development Intervention ...........51
Table 3      Bivariate Correlations Pre-Intervention ..................................................58
Table 4      Bivariate Correlations Post-Intervention .................................................61
Table 5      Descriptive Statistics for Leader Development Variables ........................64
Table 6      Descriptive Statistics for Leadership Development Variables ...................65
Table 7      One-Way ANOVA Examining the Main Effect of Team Tenure .......................66
LIST OF FIGURES

Figure 1      Multidimensional Model of Leadership .......................................................113
Figure 2      Full Range Model of Leadership ..................................................................114
Figure 3      Full Range Leadership Development Process Model .................................115
LIST OF APPENDICES

Appendix A  Athlete Descriptives .................................................................116
Appendix B  Leadership Scale for Sports ....................................................117
Appendix C  Differentiated Transformational Leadership Inventory .............120
Appendix D  Group Environment Questionnaire .........................................122
Appendix E  Athlete Satisfaction Questionnaire ..........................................124
Appendix F  Peer Motivational Climate in Youth Sport Questionnaire ..........126
Appendix G  Scale of Effective Communication in Team Sports-2 .................128
Appendix H  Letter of Information for Consent to Participate in Research .......130
Appendix I  Consent to Participate in Research ............................................132
Effective leadership has long been recognized as important within sport psychology (Chelladurai & Riemer, 1998). In fact, leadership has been cited by coaches and athletes as being vital to achieving both team and individual success in sport (Chelladurai & Riemer, 1998; Dupuis, Bloom, & Loughead, 2006; Weinberg & McDermott, 2002). While coaches have been historically viewed as the primary source of leadership within their team (Chelladurai, 1993; Chelladurai & Riemer, 1998), research has also recognized the important leadership contributions of athletes (Glenn & Horn, 1993; Gould, Hodge, Peterson, & Petlichkoff, 1987). Despite this, athlete leadership has only recently begun to receive increasing empirical attention (e.g., Bucci, Bloom, Loughead, & Caron, 2012; Gould & Voelker, 2010; Loughead & Hardy, 2005).

Athlete leadership is defined as “an athlete occupying a formal or informal leadership role within the team who influences a group of team members to achieve a common goal” (Loughead, Hardy, & Eys, 2006, p. 144). Within this definition, two types of leadership roles that athletes can occupy within their team are highlighted. The first is the formal athlete leader whereby individuals are assigned the position (e.g., team captain), typically by the coaching staff or by team selection. Unfortunately, this type of leadership role is only available to a select number of team members. The second leadership role is the informal athlete leader, which emerges over a period of time through interactions with teammates. Consequently, this type of leadership role is available to an unlimited number of team members.

While early athlete leadership research suggested that teams require one or two athletes to assume a leadership role to lead and motivate teammates (Glenn & Horn,
1993), recent findings have suggested the actual number of athlete leaders is much higher. For instance, in their study of 238 athletes from a wide range of independent (e.g., track and field) and interdependent (e.g., ice hockey) sport teams, Loughead and Hardy (2005) found varsity athletes indicated approximately 27% of their teammates served in a leadership capacity. While this research focused on the perceived number of athlete leaders within a team, Crozier, Loughead, and Munroe-Chandler (2013) examined what athletes perceived to be the ideal number of athlete leaders and the benefits of having this ideal number. In their study of 104 varsity athletes from three interdependent team sports (i.e., basketball, volleyball, and hockey), results indicated that 19% of athletes on a roster should occupy a formal leader role, while 66.5% of athletes an informal leader role. That is, over 85% of athletes on a team should occupy some type of leader role. Furthermore, participants reported that an ideal number of athlete leaders would positively influence a number of group dynamics constructs, including team attributions (e.g., increased resources), team cohesion (e.g., increased team unity), team outcomes (e.g., enhanced performance), team structure (e.g., improved role clarity), team processes (e.g., better communication), individual outcomes (e.g., increased satisfaction), and leadership behaviors (e.g., the occurrence of transactional and transformation behaviors). Given these findings, it has been emphasized both within sport psychology (Crozier et al., 2013) and organizational psychology (Pearce & Sims, 2002) that all team members be included in leadership development efforts.

To date, there are only two known published empirical studies that have implemented an athlete leadership development program. In the first study, Gould and Voelker (2010) applied a team captain training program using a formal educational
approach consisting of: (1) a one-day in-person workshop; and (2) a self-study captain’s workbook. The authors noted that they typically offer four to eight clinics per academic year with between 100 and 200 student athletes attending each time. Results of this study discussed what had gone well (e.g., athletes have reported that the workshops have been helpful and enjoyable), what had been changed from previous workshops (e.g., increased emphasis on learning leadership), and current challenges (e.g., lack of supervising teachers and coach involvement). The authors also discussed various future directions including the importance of developing a concurrent program for coaches and the need to hold participants more accountable (e.g., feedback provided to captains through a leadership report card). Strengths of this intervention program include athlete driven discussions, the use of supplementary material (i.e., self-study captain’s guide), and the emphasis of leadership as a skill that can be developed.

In the second study, Voight (2012) used a case study approach to assess the effectiveness of an athlete leader development program implemented over the course of a season with two NCAA Division 1 volleyball teams. The intervention included 15 leadership development stages developed by the author and delivered through emails, visits by the author, and video conferences with the author. Program effectiveness was determined through both teams meeting their seasonal goals and the primary objectives of the program set by the author and coaching staff (i.e., return to the Final Four, improve team communication and functioning, assist in leading the team on a day to day basis, and provide leadership development of captains, assistant captains, and captain apprentices). Additionally, results from individual interviews with team captains revealed important information concerning future leadership development programs such as the
captains’ perceived benefits of the intervention (e.g., the program was time well spent), leadership lessons learned (e.g., insight about personal leadership skills), and suggestions for improvement (e.g., involve more team members and include more session).

While these studies contributed to the advancement of athlete leadership development literature, there remains several noteworthy limitations. The first limitation is that both studies have focused predominantly on the leadership development of the team captains (i.e., formal leaders). For instance, participants in the study conducted by Gould and Voelker (2010) were restricted to sophomore and junior high school athletes who were purposefully selected to attend the clinic by their high school athletic departments. These participants were either currently serving as formal leaders (i.e., captains) or were identified as “possessing the leadership potential to become one [captain] in the future” (Gould & Voelker, 2010, p. 4). While Gould and Voelker noted the importance of including athletes who were motivated to be in the program, it has been reported by coaches that poor selection practices (i.e., choosing the wrong person as captain) are problematic (Gould, Voelker, & Griffes, 2013). Consequently, it is conceivable that athletes who would potentially benefit from the leadership training program may have been overlooked. Furthermore, as mentioned previously, recent research has advocated all team members be included in leadership development efforts, as it has been demonstrated that a high percentage of team members actually fulfill formal and informal leadership roles (e.g., Crozier et al., 2013; Loughead & Hardy, 2005). Similarly, the study conducted by Voight (2012) seemed to emphasize the development of team captains. Specifically, although the participants for this study did include all team members, the focus of the program was predominately centered on
providing team captains with support and direction throughout the season. For instance, toward the end of the pre-season, team members (i.e., non-captains) were interviewed to gather feedback for the captains. This feedback included what they needed from their captains this season in order for individuals as well as the team to accomplish their goals, suggestions for each captain to help improve their leadership effectiveness, and how each captain contributed to the leadership of the team. Team members (i.e., non-captains) were also asked what they would do to help their captains. However there was no indication of targeting the leadership development of non-captains within the intervention protocol.

As a second limitation, neither program is clear regarding its theoretical foundation. For instance, in the Voight (2012) study it was stated that the program “is based on organizational psychology and leadership research, in collaboration with the leadership consultant’s team and leadership consulting experiences spanning over fourteen years, and the input and feedback from participating coaching staffs and peer leaders” (pp. 619-620). There was no discussion of a theoretical underpinning that guided this intervention study. As discussed by Avolio, Reichard, Hannah, Walumbwa, and Chan (2009), “leadership interventions appear to differ in terms of their impact based on the theoretical focus of the leadership model” (p. 783). Further, research in other domains such as the field of public health interventions, have repeatedly found theory-based interventions to be the most effective (e.g., Albada, Ausems, Bensing, & Dulmen, 2009; Ammerman, Lindquist, Lohr, & Hersey, 2002). Specifically, French et al. (2012) explained that theory can be used to understand the factors that influence behaviors being targeted and to uncover techniques that could be used to target the behaviors. In addition, theory can help clarify how these techniques may work (French et al., 2012). In
combination with theory, empirical evidence can inform which behaviors should be targeted and which techniques and modes of delivery are likely to be effective (French et al., 2012). As such, it is important to build upon relevant theoretical and empirical foundations.

A third limitation was related to the need for theoretically and empirically grounded interventions. Specifically, research has emphasized the importance of developing both individuals as leaders (i.e., leader development) and leadership within teams (i.e., leadership development; Day, 2001; Van Velsor, McCauley, & Ruderman, 2010). While both studies (i.e., Gould & Voelker, 2010; Voight, 2012) appear to focus on leader development, neither specifically targeted nor operationally defined leadership development.

The terms leader development and leadership development have been used interchangeably in the literature (Dalakoura, 2010). According to Rost (1993), equating leader development with leadership development is the number one problem with leadership development programs. Some researchers have conceptually made a distinction between the two concepts (Day, 2001; Van Velsor et al., 2010). Accordingly, leader development is the expansion of an individual’s capacity to be effective in leadership roles and processes. Within this definition, leadership roles pertain to formal and informal positions while leadership processes are those that allow groups of team members to work together in meaningful ways (Day, 2001; McCauley, Moxley, & Van Velsor, 1998; Van Velsor et al., 2010). That is, leader development is an effort to build human capital where the emphasis is on intrapersonal development in areas such as self-
confidence, individual-based knowledge, skills, behaviors and abilities associated with leadership roles (Day, 2001).

In terms of developing human capital, it has been argued that Full Range Leadership Development (FRLD; Bass & Avolio, 1999) “is the premier leadership paradigm, currently garnering more research attention than any other leadership theory or model” (Sosik & Jung, 2010, p. 8). As noted by Ardichvili and Manderscheid (2008), not only is there a significant body of literature documenting the validity of the framework (Bass, 1998), but there is also substantial evidence that this model has been successfully used in leadership training and development (Avolio, 2005; Avolio & Gardner, 2005). In the Full Range Model of Leadership (FRML; Avolio, 1999), leadership falls on a continuum of active-passive and effective-ineffective forms of leadership (see Figure 2). Specifically, leadership is viewed as multidimensional including transformational, transactional, and laissez-faire behaviors (Price & Weiss, 2013). Transformational leadership is viewed as the most active and effective form of leadership (Bass, 1985). It involves a relationship between the leader and followers that involves personal, emotional, and inspirational exchanges (Burns, 1978). Following transformational leadership in the FRML is transactional leadership, which involves exchange processes between the leader and followers that are contingent upon the follower’s performance (Burns, 1978). Lastly, laissez-faire, also known as non-leadership, is the most passive and ineffective form of leadership. It is defined as an absence of leadership, where individuals avoid responsibility and are indifferent to important issues (Sosik & Jung, 2010). As noted earlier, leaders use both transformational and transactional leadership behaviors.
Avolio (1999) has suggested that effective leaders primarily display transformational leadership behaviors and use, on occasion, transactional leadership behaviors.

In contrast, leadership development is defined as expanding the collective capacity of team members to engage effectively in leadership roles and processes as outlined above (Day, 2001; McCauley et al., 1998; Van Velsor et al., 2010). Unlike leader development, where the emphasis is on human capital, leadership development focuses on the development of social capital. In this way, efforts are placed on the development of interpersonal relationships in areas such as social skills (e.g., building cohesion, communication) and social awareness (i.e., empathy; Day, 2001). Leadership development may include developing the collective’s shared beliefs about leadership, developing the collective’s leadership practices, and evaluating the collective’s ability to produce leadership (Van Velsor et al., 2010).

In terms of developing social capital, a number of studies have examined the behaviors of athlete leaders in relation to various aspects of the team environment. For example, Callow, Smith, Hardy, Arthur, and Hardy (2009) investigated how the transformational leadership behaviors of team captains were related to perceptions of cohesion amongst 309 club ultimate Frisbee players. Findings indicated that the leadership behaviors of fostering acceptance of group goals and promoting team work, high performance expectations and individual consideration significantly predicted task cohesion. Additionally, fostering acceptance of group goals and promoting teamwork significantly predicted social cohesion. Expanding on the above results, Price and Weiss (2013) examined the relationship between athlete leadership behaviors, cohesion, and collective efficacy. Participants were 412 female adolescent soccer players from
competitive travel teams. Findings showed that transformational athlete leadership behaviors were positively related to task cohesion, social cohesion, and collective efficacy. In contrast, the transactional leadership behaviors of management-by-exception active and a passive/avoidant factor (comprised of management-by-exception passive and laissez-faire leadership behaviors) were both negatively related to task cohesion. In addition, Smith, Arthur, Hardy, Callow, and Williams (2013) examined whether intra-team communication mediated the effects of transformational leadership behaviors on task cohesion in a sample of 199 university level ultimate Frisbee players. In relation to perceptions of their captain's transformational leadership behaviors, results indicated that the communication dimensions of communication acceptance, positive conflict, and negative conflict mediated the relationship between the leadership behavior of foster acceptance of group goals and task cohesion.

Despite the positive relationship between athlete leadership and variables such as cohesion, communication, and collective efficacy, very little research has implemented a theoretically driven leadership development program for all team members in sport. That is to say that athlete leader and leadership development programs are scarce. This scarcity is not surprising given the relative infancy of athlete leadership research; however it is significant for a number of reasons. For instance, in their sample of high school captains, Voelker, Gould, and Crawford (2011) found these captains received little to no training for their leadership positions. As a result, these captains did not feel prepared to fulfill their leadership responsibilities. In addition, mere participation in sport does not automatically foster leadership (Gould & Voelker, 2012), nor does it correlate strongly to an individual becoming a leader as an adult (Extejt & Smith, 2009). Therefore, it
becomes important that athletes have access to leadership development programs that are theoretically driven and available to all team members. To fill this gap in the literature, the purpose of the current study was to develop, implement, and examine a new program of leadership development with varsity athletes that was theoretically grounded, involved all team members, and incorporated both leader (i.e., human capital) and leadership development (i.e., social capital). It was hypothesized that both leader and leadership development outcomes would increase from pre-intervention to post-intervention.

**Method**

**Participants**

A total of 29 female varsity athletes from two interdependent sport teams that compete within the Ontario University Association consented to participate in the current study at the beginning of the 2013-2014 season. These two teams were chosen as both coaches had expressed interest in participating in the study. The first team was a women’s basketball team consisting of 12 players and the other was a women’s volleyball team consisting of 17 players. Following the first workshop, two volleyball players were removed from the study as they were removed from the team. Therefore, the final sample consisted of 27 athletes from these two teams. Participants ranged in age from 18 to 27 years ($M = 20.30$, $SD = 2.07$) and included seven rookie leaders (25.9%), 11 emerging leaders (40.7), and nine veteran leaders (33.3%). When asked to self-rate their leadership status, 11.1% of participants described themselves as a formal leader (i.e., captain), while 59.3% described themselves as an informal leader. The remaining 29.6% of the participants did not engage in a leadership role.
Measures

Athletes completed measures to assess leader development (i.e., athlete leadership behaviors) and leadership development (i.e., cohesion, athlete satisfaction, motivational climate, and communication). Each questionnaire’s items, response format, and psychometric properties are outlined below.

**Leader Development**

**Athlete leadership behaviors.** Athlete leadership behaviors were assessed using two leader behavior questionnaires. The first questionnaire was the Leadership Scale for Sports (LSS; Chelladurai & Saleh, 1980), which is a 40-item questionnaire that measures five leadership behaviors. Democratic behavior (9 items) assesses the extent to which the leader allows team members to participate in decisions related to the team. A sample item is "Asks for the opinion of team members on strategies for specific competitions." Autocratic behavior (5 items) assesses a leader’s independence in decision-making. A sample item is "Works relatively independent of the athletes." Positive feedback (5 items) assesses leader behavior that reinforces a team member by recognizing and rewarding good performance. A sample item is "Tells a team member when he/she does a particularly good job." Social support (8 items) assesses leader behavior aimed at creating a positive team environment and cultivating interpersonal relationships with team members. This includes showing concern for the welfare of team members. A sample item is "Helps team members with their personal problems." Lastly, training and instruction (13 items) assesses leader behavior aimed at improving athletic performance. This includes emphasizing strenuous training and teaching the skills, techniques, and tactics of the sport. A sample item is "Sees to it that every team member is working to his/her capacity." Responses are provided on a 5-point Likert scale ranging from 1
(never) to 5 (always). The items for each behavior are summed and averaged to yield a mean frequency with higher scores reflecting stronger perceptions of leadership behaviors. The stem preceding the items is "I."

While originally developed to measure coach leadership behaviors, the LSS has recently been used by researchers (e.g., Loughead & Hardy, 2005; Vincer & Loughead, 2010) to measure athlete leadership behaviors. Loughead and Hardy (2005) reported the following Cronbach’s alphas for each of the five athlete leadership behaviors from a sample of 258 varsity athletes (140 males and 118 females): democratic behavior, $\alpha = .81$; autocratic behavior, $\alpha = .75$; positive feedback, $\alpha = .85$; social support, $\alpha = .86$; and training and instruction, $\alpha = 0.87$. In addition, Vincer and Loughead (2010) demonstrated that the five factor model (i.e., democratic behavior, autocratic behavior, positive feedback, social support, and training and instruction) provided a reasonably good fit to the data (Comparative Fit Index [CFI] = .99, Tucker Lewis Index [TLI] = .98, and Root Mean Square Error of Approximation [RMSEA] = .05).

The second questionnaire that was used to measure athlete leadership behaviors was the Differentiated Transformational Leadership Inventory (DTLI; Callow et al., 2009). The DTLI consists of 26 items and assesses six transformational and one transactional behavior. Within the transformational dimension, individual consideration (3 items) assesses athlete leader behavior that demonstrates recognition and respect for team member’s personal needs and feeling. A sample item is "Recognizes that different athletes have different needs." Inspirational motivation (4 items) assesses athlete leader behavior that motivates and inspires. A sample item is "Talks in a way that makes me believe I can succeed." Intellectual stimulation (4 items) assesses athlete leader behavior
that encourages team members to be innovative and creative. A sample item is
"Challenges me to think about problems in new ways." Fostering acceptance of group
goals and promoting teamwork (3 items) assesses athlete leader behavior that promotes a
focus on common goals. A sample item is "Gets the team to work together for the same
goal." High performance expectations (4 items) assesses athlete leader behavior that
encourages high standards. A sample item is "Will not settle for second best." Lastly,
idealized influence (4 items) assesses leader behavior that promotes values and
appropriate conduct. A sample item is "Leads by example." Within the transactional
behavior dimension, contingent reward (4 items) assesses athlete leader behavior that is
characterized by an exchange process between the leader and team members. A sample
item is "Gives us praise when we do good work." Responses are provided on a 5-point
Likert scale ranging from 1 (not at all) to 5 (all of the time). The items for each behavior
are summed and averaged to yield a mean frequency with higher scores reflecting
stronger perceptions of leadership behaviors. The stem preceding the items is "I."

Research has shown the DTLI to have acceptable internal consistency and
factorial validity (Callow et al., 2009). Specifically, the following Cronbach’s alphas for
each of the seven athlete leadership behaviors have been reported in a group of 309 club
ultimate Frisbee players (204 males and 105 females): individual consideration, \( \alpha = .66 \);
inspirational motivation, \( \alpha = .75 \); intellectual stimulation, \( \alpha = .82 \); fostering acceptance of
group goals and promoting teamwork, \( \alpha = .73 \); high performance expectations, \( \alpha = .86 \);
idealized influence, \( \alpha = .81 \); contingent reward, \( \alpha = .82 \) (Callow et al., 2009). In addition,
the seven-factor model of the DTLI demonstrated factorial validity with a CFI = .98 and
RMSEA = .05 (Callow et al., 2009).
Leadership Development

**Cohesion.** Group cohesion was assessed using the Group Environment Questionnaire (GEQ; Carron, Widmeyer, & Brawley, 1985). The GEQ consists of 18 items that assess the following four dimensions of group cohesion: individual attractions to the group-task (ATG-T; 4 items), individual attractions to the group-social (ATG-S; 5 items), group integration-task (GI-T; 5 items), and group integration-social (GI-S; 4 items). The first dimension, ATG-T, measures team member's perceptions of personal involvement in task aspects of the group. A sample item is, "This team gives me enough opportunities to improve my personal performance." The second dimension, ATG-S, measures team member's perceptions of personal and social acceptance within the group. A sample item is, "Some of my best friends are on this team." The third dimension, GI-T, measures team member's perceptions of group task unity as a whole. A sample item is, "Our team is united in trying to reach its goals for performance." The fourth dimension, GI-S, measures team member's perceptions of group social unity as a whole. A sample item is, "Members of our team would like to spend time together in the off season." It is important to note that 12 of the 18 items developed by Carron et al. (1985) were negatively worded. However, questions have been raised about the internal consistency of the GEQ (Eys, Carron, Bray, & Brawley, 2007). It has been suggested that the discrepancies in internal consistency values may result from the presence of these negatively worded items (Eys, Carron, et al., 2007). Using two independent samples (i.e., intramural university athletes and undergraduate students), Eys, Carron, et al. (2007) found that an all positively worded version of the GEQ demonstrated higher internal consistency values than the original version of the GEQ that contains 12 negatively
worded items. As a result, the present study used all positively worded items of the GEQ. All items are measured on a 9-point Likert scale anchored by (1) strongly disagree to (9) strongly agree. The items for each dimension are summed and averaged to yield a mean frequency with higher scores representing stronger perceptions of cohesiveness. The GEQ (Carron et al., 1985) has demonstrated content (e.g., Carron et al., 1985), concurrent (e.g., Brawley, Carron, & Widmeyer, 1987), predictive (e.g., Brawley, Carron, & Widmeyer, 1988), and factorial validity (e.g., Carron et al., 1985)

**Athlete satisfaction.** Athlete satisfaction was assessed using the Athlete Satisfaction Questionnaire (ASQ; Riemer & Chelladurai, 1998). The ASQ measures 15 dimensions of athlete satisfaction: individual performance (3 items), team performance (3 items), ability utilization (5 items), strategy (6 items), personal treatment (5 items), training and instruction (3 items), team task contribution (3 items), team social contribution (3 items), ethics (3 items), team integration (4 items), personal dedication (4 items), budget (3 items), medical personnel (4 items), academic support services (3 items), and external agents (4 items). For the purpose of the current study, eight of the dimensions were removed (i.e., ability utilization, strategy, personal treatment, training and instruction, budget, media personnel, academic support services, and external agents), as they more accurately reflect responsibilities of the head coach or associated personnel and consequently would not be influenced by athlete leadership. As a result, seven dimensions were deemed relevant for inclusion in the current study (i.e., individual performance, team performance, team task contribution, team social contribution, ethics, team integration, and personal dedication), as they are directly related to athlete leadership. The first dimension, individual performance, measures satisfaction with
personal task performance. A sample item is, "The improvement in my skill level." The second dimension, team performance, measures satisfaction with the team's level of performance. A sample item is, "The team's win/loss record this season." The third dimension, team task contribution, measures satisfaction with actions where the group serves as a substitute for leadership for the athlete. A sample item is, "The guidance I receive from my teammates." The fourth dimension, team social contribution, measures satisfaction with how teammates contribute to the athlete on a personal level. A sample item is, "My social status on the team." The fifth dimension, ethics, measures satisfaction with the ethical nature of teammates. A sample item is, "My teammates' sense of fair play." The sixth dimension, team integration, measures satisfaction with the contributions and coordination of team members' efforts toward the team's task. A sample item is, "The extent to which teammates play as a team." The seventh dimension, personal dedication, measures athlete's satisfaction with his/her personal contribution to the team. A sample item is, "My commitment to the team." All items are measured on a 7-point Likert scale anchored by (1) not at all satisfied to (7) extremely satisfied. The items for each dimension are summed and averaged to yield a mean frequency with higher scores representing stronger perceptions of satisfaction. The stem preceding the items is "I am satisfied with."

Riemer and Chelladurai (1998) demonstrated that the ASQ is psychometrically sound with adequate internal consistency values for each of the dimensions used in the current study: individual performance, $\alpha = .85$; team performance, $\alpha = .95$; team task contribution, $\alpha = .83$; team social contribution, $\alpha = .91$; ethics, $\alpha = .79$; team integration, $\alpha = .88$; and personal dedication, $\alpha = .78$. In addition, the ASQ has demonstrated
construct validity (Eys, Carron, Bray, & Beauchamp, 2003; Riemer & Chelladurai, 1998).

**Motivational climate.** Peer-created motivational climate was assessed using the Peer Motivational Climate in Youth Sport Questionnaire (PeerMCYSQ; Ntoumanis & Vazou, 2005). The PeerMCYSQ is a 21-item questionnaire consisting of two higher order dimensions: task-involving climate (i.e., encourages effort and rewards individual improvement and task mastery), and ego-involving climate (i.e., fosters social comparison), each of which is composed of lower order factors. Within the task-involving climate are the factors of improvement, relatedness, and effort. Improvement (4 items) assesses athletes’ delivery of help and encouragement to their teammates to improve. A sample item is "Teach their teammates new things." Relatedness support (3 items) assesses support for the need of relatedness. A sample item is "Make their teammates feel valued." Effort (5 items) assesses whether athletes emphasize to their teammates the importance of trying hard and putting forth effort. A sample item is "Praise their teammates to try their hardest." Within the ego-involving climate are the factors of intra-team competition/ability and intra-team conflict. Intra-team competition/ability (5 items) assesses the extent to which there is an emphasis on outperforming teammates. A sample item is "Try to do better than their teammates." Intra-team conflict (4 items) assesses measure negative behaviors towards teammates. A sample item is "Complain when the team doesn’t win." Responses are provided on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The stem preceding the items is "On this team, most athletes." The PeerMCYSQ has demonstrated content and factorial validity, internal consistency, and test-retest reliability (Ntoumanis...
Specifically, the following Cronbach’s alphas for each of the five motivational climate lower order factors have been reported: improvement, $\alpha = .77$; relatedness support, $\alpha = .73$; effort, $\alpha = .70$; intra-team competition/ability, $\alpha = .69$; and intra-team conflict, $\alpha = .73$ (Ntoumanis & Vazou, 2005). Vazou, Ntoumanis, and Duda (2006) reported similar internal consistencies for improvement, $\alpha = .70$; relatedness support, $\alpha = .73$; effort, $\alpha = .70$; intra-team competition/ability, $\alpha = .69$; and intra-team conflict, $\alpha = .73$. In addition, the following Cronbach’s alphas for the two higher order dimensions were reported: peer task-involving climate, $\alpha = .78$ and peer ego-involving climate, $\alpha = .76$ (Vazou et al., 2006).

**Communication.** Interpersonal communication was assessed using the Scale of Effective Communication in Team Sports-2 (SECTS-2; Sullivan & Short, 2011). The SECTS-2 consists of 15-items that assess the following four dimensions of effective team communication: distinctiveness (3 items), acceptance (4 items), positive conflict (4 items), and negative conflict (4 items). The first dimension, distinctiveness, measures if the team’s communication distinguishes them from other social units. A sample item is, "Use nicknames." The second dimension, acceptance, measures if the team’s communication conveys acceptance of each other. A sample item is, "Trust each other." The third dimension, positive conflict, measures intra-team conflict that is positive or constructive in nature. A sample item is, "Get all problems out in the open." The fourth dimension, negative conflict, measures intra-team communication that is negative in nature. A sample item is, "Shout when upset." All items are measured on a 7-point Likert scale anchored by (1) *hardly ever* to (7) *almost always*. The stem preceding the items is "When our team communicates, we."
The SECTS-2 has been demonstrated to be a valid, reliable, and psychometrically sound measure of interpersonal communication within sport teams (Sullivan & Short, 2011). Specifically, Sullivan and Short (2011) reported acceptable internal consistency across two studies with the following Cronbach’s alphas: distinctiveness, $\alpha = .81, .78$; acceptance, $\alpha = .77, .75$; positive conflict, $\alpha = .77, .63$; and negative conflict, $\alpha = .80, .71$. In addition, Sullivan and Short reported that the full four-factor model of the SECTS-2 demonstrated good fit to the data (CFI = .92, non-normed fit index [NNFI] = .90, LISREL goodness-of-fit index = .92, standardized root mean square residual [SRMR] = .60, and RMSEA = .08).

**Procedure**

Prior to data collection, ethics approval was obtained from the University of Windsor’s Research Ethics Board. During pre-intervention data collection (October/November), athletes were provided with and asked to review (1) a letter of information for consent to participate in research (Appendix H) and (2) a consent to participate in research form (Appendix I). Once consent was obtained, pre-intervention questionnaires were administered measuring leader (i.e., DTLI and LSS) and leadership (i.e., ASQ, GEQ, PeerMCYSQ, and SECTS-2) development outcomes. Following pre-intervention data collection, athletes participated in four leadership development workshops over the course of three months. As suggested by Conger (1992), each workshop used a variety of learning strategies including multimedia, case studies, and reflection activities to target various athlete leadership behaviors. Each workshop lasted approximately one hour. An outline of each workshop including their associated leadership behaviors is provided in Table 1. Following the workshops, post-intervention
data comprising the leader and leadership development outcomes obtained pre-intervention were collected (February).

**Intervention**

Research has stressed the importance of customizing leadership development opportunities based on individual needs and characteristics (e.g., different targeted outcomes or methods of delivery based on position within the team; Duguay, Loughead, & Munroe-Chandler, 2013; McCauley, Kanaga, & Lafferty, 2010). Consequently, participants in the current study were divided into a rookie leader group \((n = 7)\), an emerging leader group \((n = 11)\), and a veteran leader group \((n = 9)\). Rookie leaders were those athletes competing in their first year with their current team. Emerging leaders were those athletes competing in their second or third year with their current team. Veteran leaders were those athletes competing in their fourth or fifth year with their current team. As this was the first time participants were exposed to this leadership development program, the content and method of delivery remained the same for each group. Consequently, the leadership groupings gave our participants the opportunity to take part in the program with other athletes who have the same team tenure (i.e., year of competition) as themselves. This allowed athletes with similar leadership status to share ideas, difficulties, and experiences with each other (Duguay et al., 2013).

The intervention included four workshops all facilitated by a graduate student, who was well versed in athlete leadership development literature and has instructed a number of previous workshops with athletes (e.g., mental skills training and leadership development). As a former varsity athlete and team leader, she was familiar and comfortable interacting with the current sample. Consistent with previous research aimed
at developing leaders (e.g., Kelloway, Barling, & Helleur, 2000), the current study implemented a formal classroom approach using a workshop format. Each workshop was designed using the recommendations offered by Whetten and Cameron (1995) for leadership development. Specifically, these authors suggest that for each workshop participants be given (1) a presentation of the behavioral principles to be learned; (2) a demonstration of these leadership principles in action; and (3) the opportunity to practice these leadership principles.

As it pertains to the present study, each workshop was focused on developing both leader (human capital) and leadership (social capital) capabilities (Day, 2001). To accomplish this objective, each workshop featured a set of athlete leadership behaviors that were targeted for developing human capital (see Table 1). The order of introducing the leadership behaviors was based on research examining the importance athletes placed on athlete leadership behaviors (Duguay et al., 2013). In their study of 133 intercollegiate athletes, Duguay et al. (2013) found that athletes believe it is important for athlete leaders to display a full range of leadership behaviors. For the current study, leadership behaviors were presented based on how important they were perceived to be by athletes, with behaviors viewed as most important introduced earlier in the intervention.

As for developing social capital, participants worked either individually or in small groups to complete activities designed to reinforce and practice the behavioral principles covered within each workshop. Subsequently, all activities finished with a large group discussion highlighting how the leadership behaviors not only help to benefit the participants but also how they benefit the team as a whole (i.e., cohesion,
communication, motivation, and satisfaction). A description of the athlete leadership development intervention is provided in Table 2.

In addition to the workshops, each participant was given a leadership workbook to support, reinforce, and expand on the material presented within the workshops (Gould & Voelker, 2010). The workbooks included an introduction to the program, important definitions (e.g., leader development, leadership development), activities to accompany the targeted behaviors, and reflection sections. In addition, a takeaway activity (i.e., digging deeper) for each workshop was also included. These were designed to encourage athletes to further develop their leadership abilities.

**Data Analysis**

Prior to conducting the main analyses, data were screened for missing values. Measurement subscales were then examined for reliability using alpha coefficients and correlation matrices were generated. To determine the overall impact of the leadership intervention, a series of within-subjects repeated measures multivariate analyses of variance (MANOVAs) were conducted followed by within-subjects univariate analyses to further explore significant findings.

**Results**

**Missing Data**

It was found that missing data were less than 5% and were deemed to be missing at random (Fox-Wasylyshyn & El-Masri, 2005). Consequently, missing data were replaced using the following two imputation techniques: case mean substitution and group mean substitution. Case mean substitution was carried out by replacing missing data points with the mean of each participant’s respective subscale score (Raymond,
Where this could not be applied (i.e., participant was missing data for all items of a particular subscale), group mean substitution was implemented. Group mean substitution was carried out by replacing missing data points with the group level (i.e., rookie [basketball or volleyball], emerging [basketball or volleyball], or veteran [basketball or volleyball]) mean within that particular group (Fox-Wasylyshyn & El-Masri, 2005). For instance, if data were missing for a rookie player from the basketball team, the group mean from this cohort was used.

**Descriptive Statistics**

All subscales were evaluated for internal consistency using alpha coefficients (see Tables 3 and 4). Cronbach’s alphas revealed that four subscales would achieve a minimum reliability of .70 (Nunnally & Bernstein, 1994) if one item was removed from each of the following subscales at pre-intervention: individual consideration (DTLI), high performance expectations (DTLI), attractions to group-task (GEQ), and negative conflict (SECTS-2). In addition, the ego-involving climate (PeerMCYSQ), personal dedication (ASQ), ethics (ASQ), and distinctiveness (SECTS-2) subscales at pre-intervention as well as the individual consideration (DTLI), individual attractions to the group-task (GEQ), and personal dedication (ASQ) subscales at post-intervention demonstrated reliabilities lower than .70 (Nunnally & Bernstein, 1994). It has been suggested that alphas of greater than .60 are acceptable for factors comprising fewer than 10 items (Loewenthal, 1996). Consequently, items were removed to achieve this .60 threshold by omitting one item each from the ego-involving climate (PeerMCYSQ) subscale at pre-intervention, the

---

1 Individual consideration (DTLI) item deleted: Help team members to develop their strengths.
High performance expectations (DTLI) item deleted: Will not settle for second best.
Individual attractions to the group-task (GEQ) item deleted: I am happy with the amount of playing time I get.
Negative conflict (SECTS-2) item deleted: Communicate anger through body language.
individual attractions to the group-task (GEQ) subscale at post-intervention, and the personal dedication (ASQ) subscale at post-intervention. Following the removal of one item, the individual consideration subscale (DTLI) at post-intervention had an internal consistency value of .48 and could not be improved by removing any additional items. As such, the individual consideration subscale was removed from further analyses.

Summaries of the bivariate correlations between all outcome variables at pre-intervention and post-intervention are presented in Table 3 and Table 4, respectively. As can be seen, significant bivariate correlation coefficients at pre-intervention ranged from $r = .38$ to .89 and at post-intervention ranged from $r = .38$ to .87, providing evidence that multicollinearity was minimal (Mayers, 2013; Tabachnick & Fidell, 2007).

Means and standard deviations for each leader development and leadership development outcome variables are presented in Table 5 and Table 6, respectively. In terms of leader development, post-intervention means for all leadership behaviors saw a hypothesized increase from those reported pre-intervention. This trend continued within the leadership development outcome variables. Specifically, only two outcome variables: group integration-social and ethics saw unexpected decreases in means post-intervention. It is important to note that ego-involving climate and negative conflict also saw reductions in means post-intervention, however a decrease in the means of these variables is desired.

---

2 Ego-involving climate (PeerMCYSQ) item deleted: Laugh at their teammates when they make mistakes. Individual attractions to the group-task (GEQ) item deleted: I am happy with the amount of playing time I get. Personal dedication (ASQ) item deleted: The degree to which I do my best for the team. 3 Individual consideration (DTLI) item deleted: Help team members to develop their strengths.
Main Analyses

Prior to conducting the main analyses, assumptions of repeated measures MANOVA including the examination of outliers and normality were evaluated (Mayers, 2013). Outliers were assessed using z-scores. One case was found to be above the cut-off of 3.29 (Field, 2013). To improve the accuracy of future analyses and preserve sample size, Winsorizing was used to replace the outlier (Field, 2013). Specifically, the outlier was adjusted to reflect the next lowest value within that respective outcome variable. Examination of the z-scores following the adjustment confirmed that the value was no longer an outlier. Following this process, the assumption of normality was assessed using Shapiro-Wilk values. It was found that the data were approximately normally distributed.

In order to determine whether team tenure of the participants (i.e., rookie, emerging, veteran leadership groups) influenced the leader development and leadership development outcome variables, a one-way analysis of variance (ANOVA) was conducted. The ANOVA revealed a non-significant main effect for team tenure (see Table 7). Therefore, the data from rookie, emerging, and veteran leadership groups were combined for subsequent analyses.

Leader development and leadership development were measured at two time points: prior to the leadership development intervention and following the intervention. To evaluate the overall impact of the program, a series of within-subjects repeated measures MANOVAs were conducted. Specifically, separate within-subjects repeated measures MANOVAs were calculated for leader development (i.e., athlete leadership behaviors) and for each of the leadership development outcome variables (i.e., cohesion,
motivational climate, satisfaction, and communication). These were followed by within-subjects univariate analyses to further explore the significant findings.

**Leader Development**

**Athlete leadership behaviors.** Results of the within-subjects repeated measures MANOVA revealed a significant multivariate effect for time, $V = 0.64, F(10, 17) = 2.99, p = .023$, partial $\eta^2 = 0.64$. Within-subjects univariate analyses indicated that training and instruction, $F(1, 26), = 21.71, p = < .001$, 95% CI [-.65, -.25]; democratic behavior, $F(1, 26), = 5.54, p = .026$, 95% CI [-.45, -.03]; social support, $F(1, 26), = 22.12, p = < .001$, 95% CI [-.55, -.22]; positive feedback, $F(1, 26), = 5.53, p = .027$, 95% CI [-.42, -.03]; idealized influence, $F(1, 26), = 10.82, p = .003$, CI [-.66, -.15]; inspirational motivation, $F(1, 26), = 8.44, p = .007$, 95% CI [-.59, -.10]; high performance expectations, $F(1, 26), = 9.83, p = .004$, 95% CI [-.41, -.09]; and fostering acceptance of group goals and promoting teamwork, $F(1, 26), = 6.78, p = .015$, 95% CI [-.73, -.09], showed significant mean increases from pre-intervention to post-intervention.

**Leadership Development**

**Cohesion.** Results of the within-subjects repeated measures MANOVA indicated no significant multivariate effect for time, $V = 0.23, F(4, 23) = 1.69, p = .186$, partial $\eta^2 = 0.23$. This indicates that none of the four cohesion dimensions changed significantly from pre-intervention to post-intervention.

**Motivational climate.** Results of the within-subjects repeated measures MANOVA revealed a significant multivariate effect for time, $V = 0.32, F(2, 25) = 5.81, p = .008$, partial $\eta^2 = 0.32$. Within-subjects univariate analyses indicated that task-involving climate, $F(1, 26), = 4.45, p = .045$, 95% CI [-.58, -.01], demonstrated a significant mean
increase from pre-intervention to post-intervention. In contrast, ego-involving climate, $F(1, 26) = 6.24, p = .019, 95\% \text{ CI } [.06, .58]$, showed a significant mean decrease from pre-intervention to post-intervention.

**Satisfaction.** Results of the within-subjects repeated measures MANOVA revealed a significant multivariate effect for time, $V = 0.69, F(7, 20) = 6.36, p = .001$, partial $\eta^2 = 0.69$. Within-subjects univariate analyses indicated that team integration, $F(1, 26) = 6.44, p = .018, 95\% \text{ CI } [-.66, -.07]$; personal dedication, $F(1, 26) = 4.61, p = .041, 95\% \text{ CI } [-.60, -.01]$; and team performance, $F(1, 26) = 21.63, p < .001, 95\% \text{ CI } [-1.59, -.62]$, showed significant mean increases from pre-intervention to post-intervention.

**Communication.** Results of the within-subjects repeated measures MANOVA indicated no significant multivariate effect for time, $V = 0.17, F(4, 23) = 1.16, p = .354$, partial $\eta^2 = 0.17$. This result indicates that none of the four communication dimensions changed significantly from pre-intervention to post-intervention.

**Effect Sizes**

Cohen (1988; 1992) has suggested general guidelines for what constitutes a small ($d = 0.2$), medium ($d = 0.5$), and large effect ($d = 0.8$), however has stressed the importance of drawing upon the context of the findings to more effectively interpret effect sizes. In light of these guidelines, the following leader behaviors from the univariate analyses demonstrated small to medium effects: democratic behavior ($d = -0.42$), inspirational motivation ($d = -0.47$), fostering acceptance of group goals and promoting team work ($d = -0.44$), and high performance expectations ($d = -0.39$). Training and instruction ($d = -0.59$), social support ($d = -0.62$), positive feedback ($d = -0.53$), and idealized influence ($d = -0.51$) demonstrated medium effects. In terms of
motivational climate, both task-involving climate ($d = -0.30$) and ego-involving climate ($d = 0.42$) had small effects. For athlete satisfaction, team integration ($d = -0.34$), and personal dedication ($d = -0.45$) demonstrated small effects while team performance ($d = -1.07$) revealed a large effect.

**Discussion**

The purpose of the current study was to develop, implement, and examine a new program of leadership development with varsity athletes. In particular, the present study explored the effects of an intervention program on leader (i.e., athlete leadership behaviors) and leadership (i.e., cohesion, motivational climate, satisfaction, and communication) development outcomes. In terms of leader development, the results demonstrated the intervention program positively impacted most of the athlete leadership behaviors targeted. More precisely, participants reported using eight of the ten leadership behaviors (i.e., training and instruction, democratic behavior, social support, positive feedback, idealized influence, inspirational motivation, high performance expectations, and fostering acceptance of group goals and promoting team work) significantly more often after completing the leadership development program compared to when they started the program. Additionally, the results demonstrated the athlete leadership development program positively influenced the leadership development variables of athlete satisfaction and motivational climate. Specifically, participants reported being significantly more satisfied with the contributions and coordination of team members' efforts toward the team's task (team integration), her personal contribution to the team (personal dedication), and the team's level of performance (team performance). Further, athletes reported significantly higher levels of task-involving climate and significantly
less levels of ego-involving climate. That is, athletes believed their team climate was one that encouraged effort and rewarded individual improvement and task mastery rather than one that fostered social comparison.

To the author’s knowledge, this study is the first to quantitatively measure both leader development and leadership development within a sport context. Drawing on previous leadership development literature, the current study revealed some promising findings. For instance, in their meta-analysis examining leadership interventions from areas such as business, military, and education, Avolio et al. (2009) found a small, positive effect on all outcomes ($d = 0.59$). In comparison, the current study yielded comparable effects, demonstrating small to medium effect sizes for athlete leadership behaviors ($d = 0.39$ to $0.62$), small effect sizes for motivational climate ($d = 0.30$ and $0.42$), and small to large effect sizes for satisfaction ($d = 0.34$ to $1.07$). Although these findings are encouraging, using the above effect sizes as a basis for future power computations is cautioned (Kraemer, Mintz, Noda, Tinklenberg, & Yesavage, 2006; Leon, Davis, Kraemer, 2011). As a pilot study, adjustments to the overall research design (e.g., scheduling of workshops, modifications to the takeaway activity) have been suggested throughout the remainder of the discussion. While it is hoped these adjustments will lead to a stronger main study design, such corrections bring into question whether any effect size calculated based on this pilot study would represent the true effect size in the main study (Kraemer, 2006). Rather, the above effect sizes should be interpreted as preliminary findings. The importance of each finding is discussed below.
Athlete leadership behaviors have been found to positively influence a number of aspects of the team environment (e.g., Callow et al., 2009; Price & Weiss, 2013; Smith et al., 2013). Despite this, athlete leader development programs designed to specifically target leadership behaviors are scarce. In fact, to the author’s knowledge, the current study is the first to directly target the development of athlete leadership behaviors in sport. Specifically, in line with the FRML (Avolio, 1999), the athlete leadership behaviors included in the present study reflected transformational and transactional leadership behaviors. Notably, eight of the ten leadership behaviors showed significant increases post-intervention, highlighting the importance of developing a broad perspective or full range of leadership behaviors in athletes. This finding is consistent with previous research suggesting athletes employ a full range of leadership behaviors (Bucci et al., 2012). Consequently, Duguay et al. (2013) examined the importance athletes placed on 17 athlete leadership behaviors. Participants were asked to rank the importance of each athlete leadership behavior. Participants believed it was important for athletes to display a full range of leadership behaviors, with 16 of the 17 leadership behaviors receiving mean scores above three out of five with higher scores representing greater importance. The current study found similar findings to Duguay et al. with all of the leadership behaviors receiving mean scores above three (out of five). Ironically, in the study conducted by Duguay et al. intellectual stimulation received one of the lowest scores in terms of importance while in the current study participants reported using this leadership behavior amongst the least. The items assessing intellectual stimulation focus heavily on problem solving and viewing obstacles in sport from new perspectives. Perhaps this leadership behavior is viewed as being the responsibility of a coach or peer.
mentor. In fact, research examining the relationships among peer athlete mentor leadership behaviors, mentoring functions, and perceptions of satisfaction, found intellectual stimulation to be related to vocational mentoring, a type of mentoring designed to improve an athlete’s development in sport (Hoffmann & Loughead, 2014). Consequently, it is not surprising that this athlete leadership behavior did not increase significantly post-intervention.

Previous studies on motivational climate interventions in physical activity have demonstrated that, when a task-involving motivational climate is emphasized rather than an ego-involving climate, individuals are more likely to be intrinsically motivated, to exert extra effort, to attribute their performance to effort, and less likely to evaluate their competence based on objective criteria (e.g., wins and losses; see Ntoumanis & Biddle, 1999). Furthermore, research has indicated that athletes who perceive higher levels of a task-involving peer motivational climate have reported higher levels of enjoyment, physical self-worth, and effort (Vazou, et al., 2006). Conversely, perceptions of an ego-involving motivational climate have been associated with higher levels of competitive trait anxiety (Vazou et al., 2006). Notably, it has been suggested that sporting environments should emphasize the characteristics of a task-involving climate in order for sport participation to facilitate athlete well-being (Reinboth & Duda, 2006).

Importantly, the present study highlighted the potential for the current athlete leadership development program to impact peer motivational climate. Specifically, a significant increase in task-involving motivational climate along with a significant decrease in ego-involving motivational climate post-intervention was shown.
The relation between effective leadership and athlete satisfaction has long been of interest to researchers (e.g., Chelladurai, 1978; Riemer & Chelladurai, 1995). While these early studies examined the coach leadership to satisfaction relationship, Eys, Loughead, and Hardy (2007), noted that athlete leaders are partially responsible in creating the perceived socially constructed environment in which satisfaction is associated. Advancing this notion, Eys, Loughead, et al. examined the relationship between the perceived number of athlete leaders on a sport team and satisfaction. To accomplish this, athlete leader dispersion and athlete satisfaction were measured at two time points (i.e., prior to the beginning of the competitive season and following the completion of the competitive season). Similar to the current study, athlete satisfaction was measured using the ASQ (Riemer & Chelladurai, 1998); however Eys, Loughead, et al. only included four dimensions (individual performance, team performance, team task contribution, and team integration). Findings indicated those athletes who perceived all three leadership functions (i.e., task, social, external) to be equally represented (as compared to those who perceived an imbalance), were more satisfied with the degree to which the team was integrated and their team’s performance. Similarly, the current study found athletes were significantly more satisfied with the degree to which their team was integrated and their team’s performance. Although not measured by Eys, Loughead, et al., the current study also found athletes were significantly more satisfied with their personal dedication post-intervention. It should also be noted that the post-intervention means for team integration, team performance, individual performance, and team task contribution were all slightly higher than those reported by Eys, Loughead, et al. at Time 2 (following the completion
of the competitive season). Consequently, the present study highlighted the potential for the athlete leadership development program to impact athlete satisfaction.

Although the current study found that cohesion did not significantly increase post-intervention, a closer examination of the means indicated that the ratings for cohesion were relatively high at pre-intervention. In particular, means were 7.36 for ATG-S, 6.42 for ATG-T, 6.24 for GI-T, and 7.21 for GI-S at pre-intervention. At post-intervention, the means were 7.42 for ATG-S, 6.65 for ATG-T, 6.47 for GI-T, and 7.14 for GI-S. These findings are in line with those found by Senécal, Loughead, and Bloom (2008) who examined the effects of a season-long team-building intervention on cohesion. Specifically, these authors reported that while athletes in a team goal-setting condition did not significantly increase their level of cohesion on any of the four dimensions (i.e., ATG-T, ATG-S, GI-T, GI-S) from the beginning of the season to the end of the season, athletes in the control condition showed a significant decrease in cohesion on three (ATG-T, ATG-S, GI-S) of the four dimensions in the same time frame. Senécal et al. noted that this may be attributed to a ceiling effect. That is, given the athletes already perceived a high level of cohesion at pre-intervention, it is understandable that the ratings did not significantly increase at the end of the season. Specifically, means for the team goal-setting condition were 6.50 for ATG-S, 6.77 for ATG-T, 6.06 for GI-T, and 6.22 for GI-S at pre-intervention. While at post-intervention, the means were 6.71 for ATG-S, 6.72 for ATG-T, 6.63 for GI-T, and 6.47 for GI-S. Importantly, the means for all four dimensions of cohesion in the current study were very similar to those reported by Senécal et al. Furthermore, upon closer examination of the means in the current study, three of the four cohesion dimensions (ATG-T, ATG-S, and GI-T) increased post-
intervention. Consequently, the leadership intervention may have worked to maintain the initial high levels of cohesion. Future studies should incorporate a control group to further examine this possibility.

Similar to cohesion, ratings of communication did not show significant changes post-intervention. Examination of the dimensions of communication revealed similar means to those reported by Sullivan and Short (2011) who sought to further operationalize intra-team communication in sports using the SECTS-2. Specifically, means were 4.28 for distinctiveness, 4.91 for positive conflict, 5.00 for acceptance, and 3.65 for negative conflict. Similarly, the present study found pre-intervention means of 4.47 for distinctiveness, 4.19 for positive conflict, and 4.93 for acceptance—all above the 3.5 mid-scale point. While the pre-intervention mean for negative conflict was 3.35, slightly below the mid-point. It is important to reiterate that a lower rating for negative conflict is desired. Furthermore, the post-intervention means for distinctiveness was 4.53, positive conflict was 4.56, and acceptance was 5.00, which showed an increase from those reported pre-intervention, while the mean for negative conflict (3.04) reflected a desired decrease. As the pre-intervention means were fairly high (low for negative conflict), a ceiling effect, as discussed above, may have attributed to the results. Consequently, as with cohesion, the athlete leadership development program may have worked to maintain the initial ratings of communication.

In addition to these findings, there were a number of lessons learned throughout this intervention study. Three particularly important points that warrant further discussion are (a) the inclusion of all team members in the intervention, (b) the difficulty of scheduling the four workshops, and (c) issues with completing the takeaway activity.
First, following on the recommendations of previous literature (e.g., Crozier et al., 2013; Pearce & Sims, 2002), it was the objective of the current study to target the leader and leadership development of all team members. Consequently, the present study extended athlete leadership development research by including all team members in the intervention. That is to say, all athletes regardless of leadership status (e.g., formal leader, informal leader, no leadership status) received the same development program. Within organizational leadership research, there are two competing perspectives when examining the relationship between the number of individuals serving as leaders and team outcomes (e.g., cohesion, satisfaction, team performance). As Neubert (1999) explains, the first perspective argues that an increase in the number of leaders will have a negative impact on team outcomes by creating confusion and tension. Conversely, the second perspective argues that an increase in the number of leaders will have a positive impact on team outcomes by enhancing participation and improving information exchange. The results of the current study support the latter perspective by demonstrating the athlete leadership development program positively impacted various leader development and leadership development outcomes. These findings support previous research that an increase in the number of leaders will have a positive impact on team outcomes (e.g., Crozier et al., 2013; Neubert, 1999). From an applied perspective, these findings further support recommendations to include all team members in leadership development efforts.

A second lesson learned from the implementation of the athlete leadership development program was the difficulty of scheduling the four workshops throughout the competitive season. Particularly, it was challenging to find times that allowed members from both teams to attend their sessions (i.e., rookie session, emerging session, and
veteran session). It is important to note that this difficulty was through no fault of the coaches of the participating athletes but rather was simply due to the hectic and rigorous schedules of varsity athletics (e.g., games, practices, off-court workouts, classes, travel). This difficulty was confounded by the fact that the schedules of the two participating teams often conflicted (e.g., one team had a road game while the other team had a home game). It is recommended that future athlete leadership development programs attempt to schedule workshop sessions with the athletic department prior to the beginning of the season so that coaches who would like their athletes to participate in the program know at the outset what days and times to avoid scheduling events. This will in no way avoid every scheduling conflict but will certainly aid the process, especially if numerous teams are involved.

A third lesson concerns the structure of the workshops. Previous athlete leadership development research has cited the need to hold participants more accountable as an important future direction (e.g., Gould & Voelker, 2010). Therefore, the current study developed a take home activity called *digging deeper*, which was incorporated into each workshop to reinforce the concepts learned within the workshops (see Table 2). As these activities were to be completed by the athletes on their own time between workshops, it required a level of accountability and responsibility from the athletes. Unfortunately, it was observed that very few athletes completed the *digging deeper* activities. Various reasons given by the athletes for not completing the activities included: a lack of time between school work and previous sporting commitments (e.g., games and practices), forgetting about the activity, and the absence of any consequence for not finishing the activity. This final reason did not relate to a sense of defiance but
rather an issue of priority. Future research may benefit from issuing friendly reminders via email or various social media avenues (e.g., Facebook™, Twitter™). Other options may be to assign small group take home activities instead of individual ones or require the athletes to detail their takeaway experience to the group in a more formal fashion.

The current study is not without limitations. Primarily, given the small sample size, the results must be interpreted with caution. As reported by Button et al. (2013), a study with low statistical power has a reduced ability to detect a true effect and decreases the probability that a significant result reflects a true effect. It is important for future research to conduct a larger scale study to further examine the effects of the athlete leadership development program.

Related to sample size, a second limitation that emerged in the current study was the low internal consistency value of the individual consideration subscale of the DTLI at post-intervention. As discussed in the measurement section, each questionnaire administered in the present study demonstrated acceptable psychometric properties with previous samples. However, a number of researchers have stressed that reliability is not a characteristic of the test itself, but rather of the test scores (e.g., Caruso, 2000; Yin & Fan, 2000). Consequently, it is probable that the low internal consistency score of the individual consideration subscale at post-intervention may have been the result of a small sample size. Indeed, it has been noted that low sample sizes may produce unstable alpha coefficients (Charter, 2003). It should also be noted that this subscale has demonstrated varying internal consistency scores in previous studies. For instance, Callow et al. (2009) reported an alpha value of .66 for individual consideration in a group of 309 club ultimate Frisbee players. It was the only leadership behavior from the DTLI that received an
internal consistency score below .70 (Nunnally & Bernstein, 1994). Conversely, in a group of 199 university level ultimate Frisbee players, Smith et al. (2013) reported an alpha value of .82 for this subscale. Given these findings, it is important for future research to be aware of the internal consistency of the individual consideration subscale.

A third limitation in the current study is the possibility of a selection bias. Given that the two teams who participated in the current study were volunteered by their coaches, it is likely that these coaches viewed leadership as an important group dynamics variable. Consequently, it is conceivable that the athletes in the present study may also share their coaches’ values. This may reflect in a selection bias by way of over representing certain groups and underestimating others. Additionally, the current sample was composed of all female athletes. Previous athlete leadership research has found differences in the leadership behaviors expected of female leaders as compared to male leaders (Holmes, McNeil, & Adorna, 2010). Consequently, future research should examine the effects of the current athlete leadership development program with a male sample.

Finally, it is important to note that the current study is cognisant of the high number of dependent variables, which resulted in the need for multiple tests. As recommended by Bender and Lange (2001), given the exploratory nature of the current study, multiplicity adjustments were not made. Consequently, it is stressed that the results presented are exploratory. To confirm these findings, further studies should be undertaken.

Nonetheless, results of the current study provide researchers, sport psychology consultants, and coaches with preliminary empirical evidence for the potential
effectiveness of this new program of athlete leadership development with varsity athletes. The results extend previous athlete leadership development research by not only quantitatively examining the impact of the leadership intervention but also by demonstrating the potential for the intervention to increase both leader development and leadership development outcomes. It is hoped that the current study will encourage researchers to further examine athlete leadership development by quantitatively and qualitatively investigating both leader development and leadership development. Furthermore, it is hoped that sport psychology consultants and coaches will use the information presented in this study to promote both leader development and leadership development within their athletes and teams.
References


doi:10.1080/0264041031000071137


doi:10.1016/j.psychsport.2006.04.005

Fox-Wasylyshyn, S. M., & El-Masri, M. M. (2005). Focus on research methods:


## Table 1

*Athlete Leadership Development Intervention Outline*

<table>
<thead>
<tr>
<th>Workshop</th>
<th>Month</th>
<th>Duration</th>
<th>Targeted Leadership Behaviors</th>
</tr>
</thead>
</table>
| 1        | December | 1 hour 30 minutes | · Idealized influence  
· Effective communicator  
· Foster team cohesion |
| 2        | January  | 1 hour            | · Fostering acceptance of team goals and promoting team work  
· Inspirational motivation  
· High performance expectations  
· Democratic behavior |
| 3        | January  | 1 hour            | · Social support  
· Awareness of team needs  
· Establish and reinforce team norms  
· Positive feedback |
| 4        | February | 1 hour            | · Individual consideration  
· Training and instruction  
· Intellectual stimulation |
Table 2

*A Description of the Athlete Leadership Development Intervention*

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Behavioral principles</th>
<th>Activities used to practice leadership principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idealized Influence</td>
<td>Set examples for teammates that are consistent with the values the team promotes.</td>
<td>My Leadership Shield</td>
</tr>
<tr>
<td></td>
<td></td>
<td>− Athletes examine their values as well as the values of their team. In addition, they are asked to reflect on their contributions as a leader and to the leadership process.</td>
</tr>
<tr>
<td>Positive Role Model/Negative Role Model</td>
<td></td>
<td>− Athletes explore the difference between the behaviors of a good role model and bad model.</td>
</tr>
<tr>
<td>Reflection Activity</td>
<td></td>
<td>− Athletes reflect on how they could display this behavior depending on their comfort level with the behavior, their tenure with the team, and their status on the team.</td>
</tr>
<tr>
<td>Digging Deeper</td>
<td></td>
<td>− Athletes meet with someone they trust and whose opinion they value. Through discussion with this person, athletes explore their abilities to be a role model.</td>
</tr>
<tr>
<td>Effective Communicator</td>
<td>Communicate effectively with everyone in the organization including teammates, coaches, training staff, and managers.</td>
<td>Pipeline</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td>Athletes are shown the value of effective communication through this team builder, which challenges them to transport a marble from start to finish without it falling off the pipeline.</td>
<td></td>
</tr>
<tr>
<td>Reflection Activity</td>
<td>Athletes reflect on how they could display this behavior depending on their comfort level with the behavior, their tenure with the team, and their status on the team.</td>
<td></td>
</tr>
<tr>
<td>Digging Deeper</td>
<td>Athletes meet with someone they trust and whose opinion they value. Through discussion with this person, athletes explore their abilities to be an effective communicator.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Foster Team Cohesion</th>
<th>Build a sense of unity and togetherness by strengthening the team’s task and social cohesion.</th>
<th>Pipeline</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Athletes are shown how to build team cohesion through this team builder, which challenges them to transport a marble from start to finish without it falling off the pipeline.</td>
<td></td>
</tr>
<tr>
<td>Reflection Activity</td>
<td>Athletes reflect on how they could display this behavior depending on their comfort level with the behavior, their tenure with the team, and their status on the team.</td>
<td></td>
</tr>
<tr>
<td>Digging Deeper</td>
<td>Athletes meet with someone they trust and whose opinion they value. Through discussion with this person, athletes explore their abilities to build team cohesion.</td>
<td></td>
</tr>
<tr>
<td>Fostering Acceptance of Group Goals and Promoting Team Work</td>
<td>Ensure that everyone understands and accepts the team’s goals.</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>-------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Fostering Acceptance of Team Goals: Making the Link</td>
<td>− Athletes are guided through making a link between their individual goals and their team goals.</td>
<td></td>
</tr>
<tr>
<td>Reflection Activity</td>
<td>− Athletes reflect on how they could display this behavior depending on their comfort level with the behavior, their tenure with the team, and their status on the team.</td>
<td></td>
</tr>
<tr>
<td>Digging Deeper</td>
<td>− Athletes challenge themselves to step outside their comfort zone by putting this behavior in action.</td>
<td></td>
</tr>
<tr>
<td>Inspirational Motivation</td>
<td>Motivate and inspire teammates by viewing the future with optimism, stressing ambitious goals, projecting an idealized vision, and communicating that the team’s vision and goals are achievable.</td>
<td></td>
</tr>
<tr>
<td>Motivators</td>
<td>− Athletes discuss the motivational effects of a sports video clip. They then reflect on how they become motivated to perform their best and shown the importance of understanding how their teammates are motivated.</td>
<td></td>
</tr>
<tr>
<td>Reflection Activity</td>
<td>− Athletes reflect on how they could display this behavior depending on their comfort level with the behavior, their tenure with the team, and their status on the team.</td>
<td></td>
</tr>
<tr>
<td>Digging Deeper</td>
<td>− Athletes challenge themselves to step outside their comfort zone by putting this behavior in action.</td>
<td></td>
</tr>
<tr>
<td>High Performance Expectations</td>
<td>Express expectations of excellence, quality, and high performance.</td>
<td>Great Expectations</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td></td>
<td>Athletes explore the expectations they hold for their teammates as well as those they hold for themselves. They also evaluate whether they are meeting their own expectations.</td>
<td>Reflection Activity</td>
</tr>
<tr>
<td></td>
<td>Athletes reflect on how they could display this behavior depending on their comfort level with the behavior, their tenure with the team, and their status on the team.</td>
<td>Digging Deeper</td>
</tr>
<tr>
<td></td>
<td>Athletes challenge themselves to step outside their comfort zone by putting this behavior in action.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Democratic Behavior</th>
<th>Allow teammates to participate in decision making, when appropriate.</th>
<th>Reflection Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Athletes reflect on how they could display this behavior depending on their comfort level with the behavior, their tenure with the team, and their status on the team.</td>
<td>Digging Deeper</td>
</tr>
<tr>
<td></td>
<td>Athletes challenge themselves to step outside their comfort zone by putting this behavior in action.</td>
<td></td>
</tr>
<tr>
<td>Social Support</td>
<td>Demonstrate a concern for the welfare of teammates, create a positive group atmosphere, and establish warm interpersonal relationships.</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Jamie</td>
<td>Athletes explore options for providing social support through the help of a case study.</td>
<td></td>
</tr>
<tr>
<td>Reflection Activity</td>
<td>Athletes reflect on how they could display this behavior depending on their comfort level with the behavior, their tenure with the team, and their status on the team.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Awareness of Team Needs</th>
<th>Be aware and take care of what the team needs (e.g., fill water bottles, set up equipment).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflection Activity</td>
<td>Athletes reflect on how they could display this behavior depending on their comfort level with the behavior, their tenure with the team, and their status on the team.</td>
</tr>
<tr>
<td>Digging Deeper</td>
<td>Athletes are either challenged to step up and take care of something the team needs (e.g., fill the water bottles) or asked to reflect on the impact of a time when they did step up.</td>
</tr>
</tbody>
</table>

<p>| Establish and Reinforce Team Norms | Establish and reinforce norms that will have a positive influence on team members and team functioning (i.e., reward those team members who adhere to the team’s standards and correct those who do not). |
| Team Norms                    | Athletes create a list of their team’s currently established norms within the contexts of competition, practice, off-season, and social situations. Using this list they then brainstorm what norms they would like their team to begin establishing. |
| Reflection Activity           | Athletes reflect on how they could display this behavior depending on their comfort level with the behavior, their tenure with the team, and their status on the team. |</p>
<table>
<thead>
<tr>
<th>Positive Feedback</th>
<th>Reinforce teammates by recognizing and rewarding good performance (proficient/quality). When providing feedback, be specific, timely, and authentic.</th>
</tr>
</thead>
</table>

**Positive Feedback**

- Athletes reflect on the most influential positive feedback they have received. Specifically, they focus on what made the feedback effective.

**Reflection Activity**

- Athletes reflect on how they could display this behavior depending on their comfort level with the behavior, their tenure with the team, and their status on the team.

**Individual Consideration**

Pay attention to and show respect for each teammate. Celebrate the individual contributions of teammates, keep lines of communication open, and show empathy and support for each teammate.

**Reflection Activity**

- Athletes reflect on how they could display this behavior depending on their comfort level with the behavior, their tenure with the team, and their status on the team.

**Digging Deeper**

- In this team builder, athletes recognize the individual contributions of their teammates and gain insight into why their teammates value them.
<table>
<thead>
<tr>
<th>Training and Instruction</th>
<th>Emphasize and facilitate hard and strenuous training by instructing teammates in the skills, techniques, and tactics of your sport.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training and Instruction</td>
<td>Guided by the four areas of sport performance (i.e., technical, tactical, physical, and mental), athletes examine their personal skills/abilities. They then reflect on how they could help train and instruct their teammates in these skills/abilities.</td>
</tr>
<tr>
<td>Reflection Activity</td>
<td>Athletes reflect on how they could display this behavior depending on their comfort level with the behavior, their tenure with the team, and their status on the team.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intellectual Stimulation</th>
<th>Encourage teammates’ efforts to be innovative and creative by reframing problems, and approaching old situations with new methods and perspectives.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breaking Down Roadblocks</td>
<td>Athletes brainstorm roadblocks teams may face over the course of a season and respond to regarding how they were handled.</td>
</tr>
<tr>
<td>Reflection Activity</td>
<td>Athletes reflect on how they could display this behavior depending on their comfort level with the behavior, their tenure with the team, and their status on the team.</td>
</tr>
</tbody>
</table>

¹These behaviors were included in the intervention; however they were not measured as there were no available measurement tools to assess at the time of the intervention.
Table 3

*Bivariate Correlations for Leadership Behaviors, Cohesion, Motivational Climate, Satisfaction, and Communication Pre-Intervention*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
<th>10.</th>
<th>11.</th>
<th>12.</th>
<th>13.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TI (1)</td>
<td>.94</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DB</td>
<td>.71**</td>
<td>.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td>.49**</td>
<td>.48**</td>
<td>.84</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PF</td>
<td>.33</td>
<td>.50**</td>
<td>.54**</td>
<td>.70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IM</td>
<td>.56**</td>
<td>.43**</td>
<td>.67**</td>
<td>.35</td>
<td>.83</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IS</td>
<td>.78**</td>
<td>.66**</td>
<td>.69**</td>
<td>.50**</td>
<td>.73**</td>
<td>.92</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGG</td>
<td>.67**</td>
<td>.61**</td>
<td>.67**</td>
<td>.41*</td>
<td>.70**</td>
<td>.88**</td>
<td>.78</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HPE</td>
<td>.36</td>
<td>.21</td>
<td>.60**</td>
<td>.39*</td>
<td>.39*</td>
<td>.55**</td>
<td>.49**</td>
<td>.71</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>.68</td>
<td>.42*</td>
<td>.58**</td>
<td>.39*</td>
<td>.71**</td>
<td>.66**</td>
<td>.69**</td>
<td>.37</td>
<td>.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATG-S</td>
<td>.20</td>
<td>.20</td>
<td>.43*</td>
<td>.35</td>
<td>.13</td>
<td>.21</td>
<td>.19</td>
<td>.35</td>
<td>.34</td>
<td>.73</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATG-T</td>
<td>-.02</td>
<td>.03</td>
<td>.31</td>
<td>-.01</td>
<td>.12</td>
<td>.23</td>
<td>.25</td>
<td>.41*</td>
<td>-.05</td>
<td>.18</td>
<td>.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GI-T</td>
<td>.00</td>
<td>.07</td>
<td>.27</td>
<td>.11</td>
<td>.27</td>
<td>.15</td>
<td>.13</td>
<td>.16</td>
<td>.06</td>
<td>.28</td>
<td>.78**</td>
<td>.86</td>
<td></td>
</tr>
<tr>
<td>GI-S</td>
<td>.14</td>
<td>.10</td>
<td>.31</td>
<td>.08</td>
<td>.07</td>
<td>.13</td>
<td>-.04</td>
<td>.32</td>
<td>.18</td>
<td>.51**</td>
<td>.37</td>
<td>.41*</td>
<td>.78</td>
</tr>
<tr>
<td>----------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>1. TI (1)</td>
<td>-.03</td>
<td>.32</td>
<td>-.06</td>
<td>.41*</td>
<td>.66**</td>
<td>.43*</td>
<td>-.09</td>
<td>.06</td>
<td>.09</td>
<td>-.07</td>
<td>.07</td>
<td>-.12</td>
<td>-.09</td>
</tr>
<tr>
<td>2. DB</td>
<td>.12</td>
<td>.37</td>
<td>-.01</td>
<td>.36</td>
<td>.45*</td>
<td>.45*</td>
<td>-.03</td>
<td>.14</td>
<td>.32</td>
<td>.02</td>
<td>.14</td>
<td>-.03</td>
<td>.06</td>
</tr>
<tr>
<td>3. SS</td>
<td>.23</td>
<td>.24</td>
<td>.32</td>
<td>.47*</td>
<td>.70*</td>
<td>.59**</td>
<td>.15</td>
<td>.31</td>
<td>.29</td>
<td>.33</td>
<td>-.06</td>
<td>.06</td>
<td>.17</td>
</tr>
<tr>
<td>4. PF</td>
<td>-.02</td>
<td>.11</td>
<td>.02</td>
<td>.42*</td>
<td>.29</td>
<td>.27</td>
<td>.05</td>
<td>-.08</td>
<td>.13</td>
<td>-.10</td>
<td>.01</td>
<td>.22</td>
<td>.22</td>
</tr>
<tr>
<td>5. IM</td>
<td>.20</td>
<td>.30</td>
<td>.22</td>
<td>.24</td>
<td>.57**</td>
<td>.38</td>
<td>.19</td>
<td>.24</td>
<td>.22</td>
<td>-.14</td>
<td>-.05</td>
<td>-.00</td>
<td>-.02</td>
</tr>
<tr>
<td>6. IS</td>
<td>.14</td>
<td>.44*</td>
<td>.22</td>
<td>.31</td>
<td>.66**</td>
<td>.60**</td>
<td>.02</td>
<td>.29</td>
<td>.22</td>
<td>.14</td>
<td>.24</td>
<td>-.08</td>
<td>-.03</td>
</tr>
<tr>
<td>7. AGG</td>
<td>.26</td>
<td>.45*</td>
<td>.27</td>
<td>.35</td>
<td>.65**</td>
<td>.62**</td>
<td>.03</td>
<td>.40*</td>
<td>.26</td>
<td>.08</td>
<td>.09</td>
<td>-.13</td>
<td>-.10</td>
</tr>
<tr>
<td>8. HPE</td>
<td>.26</td>
<td>.24</td>
<td>.47*</td>
<td>.35</td>
<td>.57**</td>
<td>.49*</td>
<td>.07</td>
<td>.37</td>
<td>.20</td>
<td>.17</td>
<td>.21</td>
<td>-.07</td>
<td>.03</td>
</tr>
<tr>
<td>9. II</td>
<td>-.03</td>
<td>-.01</td>
<td>-.01</td>
<td>.53*</td>
<td>.74**</td>
<td>.57**</td>
<td>.07</td>
<td>-.05</td>
<td>-.10</td>
<td>.04</td>
<td>-.25</td>
<td>.17</td>
<td>.08</td>
</tr>
<tr>
<td>10. ATG-S</td>
<td>.18</td>
<td>-.24</td>
<td>.25</td>
<td>.61**</td>
<td>.44*</td>
<td>.27</td>
<td>.16</td>
<td>.01</td>
<td>-.06</td>
<td>.32</td>
<td>.13</td>
<td>.52**</td>
<td>.49**</td>
</tr>
<tr>
<td>11. ATG-T</td>
<td>.82**</td>
<td>.10</td>
<td>.89**</td>
<td>.28</td>
<td>.13</td>
<td>.11</td>
<td>.49**</td>
<td>.86**</td>
<td>.13</td>
<td>.33</td>
<td>.16</td>
<td>.35</td>
<td>.48*</td>
</tr>
<tr>
<td>12. GI-T</td>
<td>.76**</td>
<td>-.06</td>
<td>.82**</td>
<td>.32</td>
<td>.06</td>
<td>-.06</td>
<td>.57**</td>
<td>.67**</td>
<td>.02</td>
<td>.06</td>
<td>-.11</td>
<td>.64**</td>
<td>.64**</td>
</tr>
<tr>
<td>13. GI-S</td>
<td>.25</td>
<td>-.19</td>
<td>.31</td>
<td>.58**</td>
<td>.37</td>
<td>.19</td>
<td>.50**</td>
<td>.15</td>
<td>-.11</td>
<td>.30</td>
<td>.22</td>
<td>.43*</td>
<td>.58**</td>
</tr>
<tr>
<td>----------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>14. TIC</td>
<td>.93</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. EIC</td>
<td>.12</td>
<td>.61</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. TI (2)</td>
<td>.86**</td>
<td>.05</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. TSC</td>
<td>.33</td>
<td>-.11</td>
<td>.20</td>
<td>.83</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. IP</td>
<td>.06</td>
<td>.28</td>
<td>.13</td>
<td>.29</td>
<td>.72**</td>
<td>.81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. E</td>
<td>.39*</td>
<td>-.17</td>
<td>.46*</td>
<td>.31</td>
<td>.03</td>
<td>-.20</td>
<td>.64</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. TTC</td>
<td>.89**</td>
<td>.29</td>
<td>.87**</td>
<td>.20</td>
<td>.18</td>
<td>.16</td>
<td>.36</td>
<td>.94</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. TP</td>
<td>.11</td>
<td>.43*</td>
<td>.16</td>
<td>-.23</td>
<td>.25</td>
<td>.33</td>
<td>-.13</td>
<td>.26</td>
<td>.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. D</td>
<td>.09</td>
<td>.13</td>
<td>.16</td>
<td>.10</td>
<td>.37</td>
<td>.50**</td>
<td>.02</td>
<td>.14</td>
<td>.08</td>
<td>.63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. NC</td>
<td>.03</td>
<td>.33</td>
<td>.08</td>
<td>-.02</td>
<td>.02</td>
<td>.03</td>
<td>.11</td>
<td>.09</td>
<td>.20</td>
<td>.16</td>
<td>.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. PC</td>
<td>.40*</td>
<td>-.45*</td>
<td>.36</td>
<td>.51**</td>
<td>.08</td>
<td>-.11</td>
<td>.31</td>
<td>.15</td>
<td>-.27</td>
<td>.13</td>
<td>-.22</td>
<td>.82</td>
<td></td>
</tr>
<tr>
<td>26. A</td>
<td>.54**</td>
<td>-.36</td>
<td>.43*</td>
<td>.58**</td>
<td>.15</td>
<td>-.07</td>
<td>.44*</td>
<td>.33</td>
<td>-.24</td>
<td>.21</td>
<td>-.16</td>
<td>.88**</td>
<td>.85</td>
</tr>
</tbody>
</table>

**Note.** Bivariate correlations represent values obtained following item deleted. Alpha coefficients are presented in bold on the diagonal. TI (1) = Training and Instruction; DB = Democratic Behavior; SS = Social Support; PF = Positive Feedback; IM = Inspirational Motivation; IS = Inspirational Motivation; AGG = Fostering Acceptance of Group Goals and Promoting Teamwork; HPE = High Performance Expectations; II = Idealized Influence; ATG-S = Individual Attractions to Group-Social; ATG-T = Individual Attractions to Group-Task; GI-T = Group Integration-Task; GI-S = Group Integration-Social; TIC = Task Involving Climate; EIC = Ego-Involving Climate; TI = Team Integration; TSC = Team Social Contribution; PD = Personal Dedication; IP = Individual Performance; E = Ethics; TTC = Team Task Contribution; TP = Team Performance; D = Distinctiveness; NC = Negative Conflict; PC = Positive Conflict; A = Acceptance.

*p < .05. **p < .01.
Table 4

**Bivariate Correlations for Leadership Behaviors, Cohesion, Motivational Climate, Satisfaction, and Communication Post-Intervention**

<table>
<thead>
<tr>
<th>Variable</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
<th>10.</th>
<th>11.</th>
<th>12.</th>
<th>13.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. TI (1)</td>
<td></td>
<td>.91</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. DB</td>
<td>.59**</td>
<td></td>
<td>.78</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. SS</td>
<td>.59**</td>
<td>.62**</td>
<td></td>
<td>.80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. PF</td>
<td>.48*</td>
<td>.61**</td>
<td>.66**</td>
<td></td>
<td>.88</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. IM</td>
<td>.53**</td>
<td>.58**</td>
<td>.59**</td>
<td>.49*</td>
<td></td>
<td>.77</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. IS</td>
<td>.75**</td>
<td>.59**</td>
<td>.47*</td>
<td>.41*</td>
<td>.71**</td>
<td></td>
<td>.89</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. AGG</td>
<td>.41*</td>
<td>.56**</td>
<td>.55**</td>
<td>.40*</td>
<td>.77**</td>
<td>.65**</td>
<td></td>
<td>.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. HPE</td>
<td>.28</td>
<td>.32</td>
<td>.44*</td>
<td>.31</td>
<td>.62**</td>
<td>.44*</td>
<td>.69**</td>
<td></td>
<td>.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. II</td>
<td>.65**</td>
<td>.49*</td>
<td>.43*</td>
<td>.33</td>
<td>.46*</td>
<td>.51**</td>
<td>.46*</td>
<td>.29</td>
<td></td>
<td>.79</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. ATG-S</td>
<td>.26</td>
<td>.27</td>
<td>.18</td>
<td>.44*</td>
<td>-.07</td>
<td>.00</td>
<td>-.02</td>
<td>-.02</td>
<td>.20</td>
<td>.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. ATG-T</td>
<td>.14</td>
<td>.12</td>
<td>.25</td>
<td>.19</td>
<td>.21</td>
<td>.16</td>
<td>.34</td>
<td>.36</td>
<td>-.17</td>
<td>.31</td>
<td>.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. GI-T</td>
<td>.08</td>
<td>.15</td>
<td>.19</td>
<td>.21</td>
<td>-.06</td>
<td>-.05</td>
<td>.17</td>
<td>.04</td>
<td>-.28</td>
<td>.38</td>
<td>.74**</td>
<td>.88</td>
<td></td>
</tr>
<tr>
<td>13. GI-S</td>
<td>.24</td>
<td>.38</td>
<td>.34</td>
<td>.42*</td>
<td>-.03</td>
<td>.00</td>
<td>.00</td>
<td>-.06</td>
<td>.12</td>
<td>.79**</td>
<td>.50**</td>
<td>.57**</td>
<td>.83</td>
</tr>
<tr>
<td>----------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>TI (1)</td>
<td>.12</td>
<td>.37</td>
<td>.03</td>
<td>.39**</td>
<td>.57**</td>
<td>.39*</td>
<td>.10</td>
<td>.02</td>
<td>.21</td>
<td>.22</td>
<td>.04</td>
<td>.04</td>
<td>.06</td>
</tr>
<tr>
<td>DB</td>
<td>.29</td>
<td>-.01</td>
<td>.31</td>
<td>.45*</td>
<td>.54**</td>
<td>.34</td>
<td>.20</td>
<td>.31</td>
<td>.31</td>
<td>.40*</td>
<td>.18</td>
<td>-.02</td>
<td>.20</td>
</tr>
<tr>
<td>SS</td>
<td>.20</td>
<td>.13</td>
<td>.15</td>
<td>.30</td>
<td>.56**</td>
<td>.48**</td>
<td>.07</td>
<td>.14</td>
<td>.40*</td>
<td>.21</td>
<td>-.18</td>
<td>-.10</td>
<td>.06</td>
</tr>
<tr>
<td>PF</td>
<td>.30</td>
<td>.12</td>
<td>.21</td>
<td>.37</td>
<td>.47*</td>
<td>.48**</td>
<td>.17</td>
<td>.22</td>
<td>.33</td>
<td>.30</td>
<td>.02</td>
<td>.09</td>
<td>.30</td>
</tr>
<tr>
<td>IM</td>
<td>.38*</td>
<td>.35</td>
<td>.08</td>
<td>.15</td>
<td>.62**</td>
<td>.43*</td>
<td>-.12</td>
<td>.21</td>
<td>.14</td>
<td>.34</td>
<td>-.22</td>
<td>-.08</td>
<td>.01</td>
</tr>
<tr>
<td>IS</td>
<td>.26</td>
<td>.54**</td>
<td>.03</td>
<td>.21</td>
<td>.49**</td>
<td>.39*</td>
<td>-.09</td>
<td>.24</td>
<td>.23</td>
<td>.48*</td>
<td>.10</td>
<td>-.12</td>
<td>-.07</td>
</tr>
<tr>
<td>AGG</td>
<td>.46*</td>
<td>.14</td>
<td>.30</td>
<td>.19</td>
<td>.61**</td>
<td>.26</td>
<td>-.13</td>
<td>.42*</td>
<td>.36</td>
<td>.52**</td>
<td>-.23</td>
<td>.02</td>
<td>.05</td>
</tr>
<tr>
<td>HPE</td>
<td>.20</td>
<td>.18</td>
<td>.07</td>
<td>.06</td>
<td>.47*</td>
<td>.26</td>
<td>-.25</td>
<td>.35</td>
<td>.34</td>
<td>.47*</td>
<td>.00</td>
<td>-.19</td>
<td>-.11</td>
</tr>
<tr>
<td>II</td>
<td>-.08</td>
<td>.34</td>
<td>-.21</td>
<td>.29</td>
<td>.79**</td>
<td>.16</td>
<td>-.14</td>
<td>.05</td>
<td>-.15</td>
<td>.31</td>
<td>.08</td>
<td>-.04</td>
<td>-.06</td>
</tr>
<tr>
<td>ATG-S</td>
<td>.17</td>
<td>-.39*</td>
<td>.24</td>
<td>.60**</td>
<td>.27</td>
<td>.29</td>
<td>.36</td>
<td>.26</td>
<td>.13</td>
<td>-.09</td>
<td>.23</td>
<td>.36</td>
<td>.44*</td>
</tr>
<tr>
<td>ATG-T</td>
<td>.70**</td>
<td>-.27</td>
<td>.71**</td>
<td>.31</td>
<td>.05</td>
<td>.34</td>
<td>.40*</td>
<td>.54**</td>
<td>.65**</td>
<td>.32</td>
<td>-.34</td>
<td>.49**</td>
<td>.49**</td>
</tr>
<tr>
<td>GI-T</td>
<td>.75**</td>
<td>-.53**</td>
<td>.86**</td>
<td>.29</td>
<td>-.14</td>
<td>.06</td>
<td>.60**</td>
<td>.39*</td>
<td>.78**</td>
<td>.04</td>
<td>-.23</td>
<td>.66**</td>
<td>.70**</td>
</tr>
<tr>
<td>GI-S</td>
<td>.38</td>
<td>-.43*</td>
<td>.50**</td>
<td>.66**</td>
<td>.19</td>
<td>.45*</td>
<td>.52**</td>
<td>.27</td>
<td>.38</td>
<td>.14</td>
<td>.20</td>
<td>.33</td>
<td>.53**</td>
</tr>
<tr>
<td>------------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>14. TIC</td>
<td>.94</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. EIC</td>
<td>-.25</td>
<td>.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. TI (2)</td>
<td>.86**</td>
<td>-.53**</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. TSC</td>
<td>.31</td>
<td>-.25</td>
<td>.41*</td>
<td>.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. PD</td>
<td>.09</td>
<td>.28</td>
<td>-.03</td>
<td>.29</td>
<td>.62</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. IP</td>
<td>.25</td>
<td>.15</td>
<td>.19</td>
<td>.53**</td>
<td>.33</td>
<td>.88</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. E</td>
<td>.58**</td>
<td>-.44*</td>
<td>.65**</td>
<td>.56**</td>
<td>-.10</td>
<td>.28</td>
<td>.80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. TTC</td>
<td>.54**</td>
<td>-.05</td>
<td>.55**</td>
<td>.46*</td>
<td>.30</td>
<td>.25</td>
<td>.27</td>
<td>.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. TP</td>
<td>.67**</td>
<td>-.25</td>
<td>.73**</td>
<td>.23</td>
<td>.02</td>
<td>.17</td>
<td>.47*</td>
<td>.51**</td>
<td>.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. D</td>
<td>.34</td>
<td>.28</td>
<td>.34</td>
<td>.39*</td>
<td>.40*</td>
<td>.44*</td>
<td>.04</td>
<td>.54**</td>
<td>.35</td>
<td>.70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. NC</td>
<td>-.37</td>
<td>.16</td>
<td>-.32</td>
<td>.16</td>
<td>-.07</td>
<td>-.05</td>
<td>-.19</td>
<td>-.15</td>
<td>-.19</td>
<td>.13</td>
<td>.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. PC</td>
<td>.65**</td>
<td>-.29</td>
<td>.65**</td>
<td>.36</td>
<td>.00</td>
<td>-.17</td>
<td>.57**</td>
<td>.41*</td>
<td>.36</td>
<td>.00</td>
<td>-.30</td>
<td>.89</td>
<td></td>
</tr>
<tr>
<td>26. A</td>
<td>.71**</td>
<td>-.40*</td>
<td>.74**</td>
<td>.52**</td>
<td>.00</td>
<td>.07</td>
<td>.67**</td>
<td>.47*</td>
<td>.53**</td>
<td>.11</td>
<td>-.19</td>
<td>.87**</td>
<td>.77</td>
</tr>
</tbody>
</table>

*Note.* Bivariate correlations represent values obtained following item deleted. Alpha coefficients are presented in bold on the diagonal. TI (1) = Training and Instruction; DB = Democratic Behavior; SS = Social Support; PF = Positive Feedback; IM = Inspirational Motivation; IS = Inspirational Motivation; AGG = Fostering Acceptance of Group Goals and Promoting Teamwork; HPE = High Performance Expectations; II = Idealized Influence; ATG-S = Individual Attractions to Group-Social; ATG-T = Individual Attractions to Group-Task; GI-T = Group Integration-Task; GI-S = Group Integration-Social; TIC = Task Involving Climate; EIC = Ego-Involving Climate; TI = Team Integration; TSC = Team Social Contribution; PD = Personal Dedication; IP = Individual Performance; E = Ethics; TTC = Team Task Contribution; TP = Team Performance; D = Distinctiveness; NC = Negative Conflict; PC = Positive Conflict; A = Acceptance.

*p < .05. **p < .01
Table 5

*Descriptive Statistics for Leader Development Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>TI</td>
<td>2.82</td>
<td>0.76</td>
</tr>
<tr>
<td>DB</td>
<td>3.70</td>
<td>0.57</td>
</tr>
<tr>
<td>SS</td>
<td>3.97</td>
<td>0.63</td>
</tr>
<tr>
<td>PF</td>
<td>4.29</td>
<td>0.40</td>
</tr>
<tr>
<td>II</td>
<td>3.67</td>
<td>0.81</td>
</tr>
<tr>
<td>IM</td>
<td>3.81</td>
<td>0.73</td>
</tr>
<tr>
<td>IS</td>
<td>3.05</td>
<td>0.94</td>
</tr>
<tr>
<td>AGG</td>
<td>3.67</td>
<td>0.91</td>
</tr>
<tr>
<td>HPE</td>
<td>4.12</td>
<td>0.65</td>
</tr>
</tbody>
</table>

*Note.* Scores for these leadership behaviors can range from 1-5. TI = Training and Instruction; DB = Democratic Behavior; SS = Social Support; PF = Positive Feedback; II = Idealized Influence; IM = Inspirational Motivation; IS = Inspirational Motivation; AGG = Fostering Acceptance of Group Goals and Promoting Teamwork; HPE = High Performance Expectations.
Table 6

*Descriptive Statistics for Leadership Development Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre</th>
<th></th>
<th></th>
<th>Post</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>Cohesion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATG-S¹</td>
<td>7.36</td>
<td>1.30</td>
<td>7.42</td>
<td>1.23</td>
<td></td>
</tr>
<tr>
<td>ATG-T¹</td>
<td>6.42</td>
<td>1.45</td>
<td>6.65</td>
<td>1.44</td>
<td></td>
</tr>
<tr>
<td>GI-T¹</td>
<td>6.24</td>
<td>1.53</td>
<td>6.47</td>
<td>1.55</td>
<td></td>
</tr>
<tr>
<td>GI-S¹</td>
<td>7.21</td>
<td>1.13</td>
<td>7.14</td>
<td>1.26</td>
<td></td>
</tr>
<tr>
<td>Motivational Climate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIC²</td>
<td>4.99</td>
<td>0.98</td>
<td>5.28</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>EIC²</td>
<td>4.68</td>
<td>0.76</td>
<td>4.36</td>
<td>0.93</td>
<td></td>
</tr>
<tr>
<td>Athlete Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TI²</td>
<td>4.99</td>
<td>1.04</td>
<td>5.36</td>
<td>1.11</td>
<td></td>
</tr>
<tr>
<td>TSC²</td>
<td>5.63</td>
<td>0.95</td>
<td>5.81</td>
<td>0.87</td>
<td></td>
</tr>
<tr>
<td>PD²</td>
<td>5.52</td>
<td>0.69</td>
<td>5.83</td>
<td>0.68</td>
<td></td>
</tr>
<tr>
<td>IP²</td>
<td>4.78</td>
<td>1.05</td>
<td>5.00</td>
<td>1.23</td>
<td></td>
</tr>
<tr>
<td>E²</td>
<td>5.25</td>
<td>0.78</td>
<td>5.16</td>
<td>1.04</td>
<td></td>
</tr>
<tr>
<td>TTC²</td>
<td>4.60</td>
<td>1.43</td>
<td>5.05</td>
<td>1.10</td>
<td></td>
</tr>
<tr>
<td>TP²</td>
<td>4.38</td>
<td>1.04</td>
<td>5.49</td>
<td>1.02</td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D²</td>
<td>4.47</td>
<td>1.14</td>
<td>4.53</td>
<td>1.08</td>
<td></td>
</tr>
<tr>
<td>NC²</td>
<td>3.35</td>
<td>1.19</td>
<td>3.04</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>PC²</td>
<td>4.19</td>
<td>1.23</td>
<td>4.56</td>
<td>1.33</td>
<td></td>
</tr>
<tr>
<td>A²</td>
<td>4.93</td>
<td>1.07</td>
<td>5.00</td>
<td>1.12</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* ¹Scores for the dimensions of cohesion can range from 1-9. ²Scores for the dimensions of motivational climate, satisfaction, and communication can range from 1-7. ATG-S = Individual Attractions to Group-Social; ATG-T = Individual Attractions to Group-Task; GI-T = Group Integration-Task; GI-S = Group Integration-Social; TIC = Task Involving Climate; EIC = Ego-Involving Climate; TI = Team Integration; TSC = Team Social Contribution; PD = Personal Dedication; IP = Individual Performance; E = Ethics; TTC = Team Task Contribution; TP = Team Performance; D = Distinctiveness; NC = Negative Conflict; PC = Positive Conflict; A = Acceptance.
### Table 7

**One-Way ANOVA Examining the Main Effect of Team Tenure**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$F(2, 24)$</td>
<td>$p$</td>
</tr>
<tr>
<td>Athlete Leadership Behaviors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TI</td>
<td>1.24</td>
<td>.309</td>
</tr>
<tr>
<td>DB</td>
<td>0.03</td>
<td>.974</td>
</tr>
<tr>
<td>SS</td>
<td>0.43</td>
<td>.655</td>
</tr>
<tr>
<td>PF</td>
<td>0.19</td>
<td>.829</td>
</tr>
<tr>
<td>II</td>
<td>1.75</td>
<td>.195</td>
</tr>
<tr>
<td>IM</td>
<td>0.22</td>
<td>.804</td>
</tr>
<tr>
<td>IS</td>
<td>0.88</td>
<td>.429</td>
</tr>
<tr>
<td>AGG</td>
<td>1.07</td>
<td>.360</td>
</tr>
<tr>
<td>HPE</td>
<td>0.09</td>
<td>.915</td>
</tr>
<tr>
<td>Cohesion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATG-S</td>
<td>0.95</td>
<td>.402</td>
</tr>
<tr>
<td>ATG-T</td>
<td>0.10</td>
<td>.909</td>
</tr>
<tr>
<td>GI-T</td>
<td>0.44</td>
<td>.649</td>
</tr>
<tr>
<td>GI-S</td>
<td>1.88</td>
<td>.174</td>
</tr>
<tr>
<td>Motivational Climate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIC</td>
<td>0.08</td>
<td>.921</td>
</tr>
<tr>
<td>EIC</td>
<td>1.40</td>
<td>.265</td>
</tr>
<tr>
<td>Athlete Satisfaction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TI</td>
<td>0.45</td>
<td>.643</td>
</tr>
<tr>
<td>TSC</td>
<td>2.29</td>
<td>.123</td>
</tr>
<tr>
<td>PD</td>
<td>0.54</td>
<td>.590</td>
</tr>
<tr>
<td>IP</td>
<td>0.52</td>
<td>.601</td>
</tr>
<tr>
<td>E</td>
<td>1.53</td>
<td>.238</td>
</tr>
<tr>
<td>TTC</td>
<td>0.23</td>
<td>.796</td>
</tr>
<tr>
<td>TP</td>
<td>2.56</td>
<td>.098</td>
</tr>
<tr>
<td>Communication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>0.29</td>
<td>.748</td>
</tr>
<tr>
<td>NC</td>
<td>0.38</td>
<td>.686</td>
</tr>
<tr>
<td>PC</td>
<td>0.66</td>
<td>.526</td>
</tr>
<tr>
<td>A</td>
<td>1.26</td>
<td>.302</td>
</tr>
</tbody>
</table>
Note. TI = Training and Instruction; DB = Democratic Behavior; SS = Social Support; PF = Positive Feedback; II = Idealized Influence; IM = Inspirational Motivation; IS = Inspirational Motivation; AGG = Fostering Acceptance of Group Goals and Promoting Teamwork; HPE = High Performance Expectations; ATG-S = Individual Attractions to Group-Social; ATG-T = Individual Attractions to Group-Task; GI-T = Group Integration-Task; GI-S = Group Integration-Social; TIC = Task Involving Climate; EIC = Ego-Involving Climate; TI = Team Integration; TSC = Team Social Contribution; PD = Personal Dedication; IP = Individual Performance; E = Ethics; TTC = Team Task Contribution; TP = Team Performance; D = Distinctiveness; NC = Negative Conflict; PC = Positive Conflict; A = Acceptance.
LITERATURE REVIEW

Research in the domain of athlete leadership has highlighted the importance of leadership development for all team members. The purpose of the present thesis is to create, implement, and test the effectiveness of an athlete leadership development program. The review of literature will be divided into two parts (a) leadership, and (b) leadership development.

Leadership

The following literature review will begin by defining leadership. Leadership in sport will then be outlined and athlete leadership defined. Next, two models for the study of leadership in sport will be discussed, followed by an examination of the measurement tools that have been used to assess athlete leadership. To conclude this section, an overview of the literature on athlete leadership will be presented.

Leadership Defined

Effective leadership has long been recognized as an important component of group functioning and organizational success (Bass, 1990; Weinburg & McDermott, 2002). In fact, it has been argued that effective leadership may represent the most critical factor in the success of teams (Zaccaro, Rittman, & Marks, 2001). Given this importance, it is not surprising that leadership has been studied extensively in a number of contexts using a variety of theoretical frameworks (Michalski & Vilotic, 2012; Northouse, 2013). Consequently, researchers have advanced numerous definitions of leadership (Fleishman et al., 1991). For instance, some researchers have conceptualized leadership in terms of unique traits or characteristics (Zaccaro, 2007), while others have defined it in terms of behaviors displayed by people (Avolio, 1999). Still other researchers have focused on the
leader-follower relationship (House & Mitchell, 1974). Although leadership has been conceptualized using a variety of definitions, Northouse (2001) identified four central components of all leadership; (a) it is a process, (b) it involves influence, (c) it occurs within a group context, and (d) it involves goal attainment. From these components, Northouse defined leadership as a “process whereby an individual influences a group of individuals to achieve a common goal” (p.3). One unique feature of this definition is the fact that leadership is not restricted to a designated individual rather it is available to everyone within the group or team.

While the Northouse (2001) definition provides a suitable definition of leadership, it is important to note that leadership has been traditionally conceptualized as one individual projecting downward influence on team members; a process known as vertical leadership (Ensley, Hmieleski, & Pearce, 2006). However, there is a growing body of literature highlighting the presence and importance of shared leadership in organizational psychology (Pearce & Conger, 2003). Described as a mutual influence process between team members, shared leadership is characterized by the serial emergence of formal as well as informal leaders (Pearce, 2004). Fundamentally, it highlights the development of leadership from being solely the responsibility of one individual to being carried out by numerous group members. This shift in the conceptualization of leadership is supported by research suggesting that a single appointed leader is unlikely to exhibit all necessary leadership behaviors or have all of the skills, knowledge, and abilities necessary to carry out all leadership roles (Barry, 1991; Carson, Tesluk, & Marrone, 2007; Pearce & Manz, 2005; Pearce, Manz, & Sims, 2009).
Leadership in Sport

Within sport, effective leadership has been cited by researchers, coaches, and athletes alike as being imperative to attaining both team and individual success (Chelladurai & Riemer, 1998; Dupuis, Bloom, & Loughead, 2006; Weinberg & McDermott, 2002). While historically the coach has been viewed as the primary source of leadership within their team (Chelladurai, 1993; Chelladurai & Riemer, 1998), the important leadership contributions of athletes have also been recognized, although understudied (Glenn & Horn, 1993; Gould, Hodge, Peterson, & Petlichkoff, 1987; Loughead & Hardy, 2005).

In an effort to encourage research in this area, Loughead, Hardy and Eys (2006) sought to advance the field by defining the construct. Guided by the theoretical arguments of Northouse (2001), Loughead et al. defined athlete leadership as an athlete who influences team members to achieve a common goal. Through this definition Loughead et al. emphasized that leadership is available to all athletes through two types of leadership roles: formal and informal. The role of formal athlete leader is only available to a select number of athletes as their position (e.g., team captain), is assigned by the coaching staff or team selection. Conversely, the role of informal athlete leader is available to an unlimited number of athletes as this role emerges through interactions with teammates. Recent research has suggested that the number of athlete leaders on a team is likely much higher than past research believed. For instance, while Glenn and Horn (1993) asserted that teams require one or two athletes to fill a leadership role, Crozier, Loughead, and Munroe-Chandler (2013) found that 19% of athletes on a roster should occupy a formal leadership role, while 66.5% of athletes an informal leadership
role. That is, over 85% of athletes on a team should occupy some type of leadership role. It appears that athlete leadership may more strongly reflect a shared leadership process with teams requiring more athlete leaders than was previously considered.

**Theories and Models Used to Examine Athlete Leadership**

As a relatively new field of study, athlete leadership has relied predominantly on the theories and frameworks adopted from sport coaching research and organizational psychology. One such example is Chelladurai’s (1978, 1993) multidimensional model of leadership (MML), created specifically for the study of sport leadership: in particular coaching research. As one of the most widely used models for the examination of coaching leadership in sport, the MML (see Figure 1) is a linear model comprised of antecedents, leader behaviors, and consequences.

The antecedents of the MML include situational, leader, and member characteristics (Chelladurai, 1993). Situational characteristics refer to the context and demands of the situation. For example, this may include the type of sport, level of competition, or team goals. Leader characteristics pertain to the leaders’ personal attributes, such as age, gender, and personality. Lastly, member characteristics include the team members’ personal characteristics. Such variables consist of, among others, team members’ ability, maturity level, and experience.

The throughputs of the MML include required, actual, and preferred leader behaviors (Chelladurai, 1993). The required behaviors are determined by both situational and member characteristics, and they reflect the behaviors in which the leader should engage. The actual (or perceived) behaviors are influenced by the leader characteristics, required behaviors, and preferred behaviors. Actual behaviors are those that the leader
truly displays or is perceived to display. Lastly, similar to required behaviors, preferred behaviors are influenced by both situational and member characteristics, and are leadership behaviors which team members’ want from the leader.

From this model, Chelladurai (1978; 1993) proposed that leadership effectiveness could be evaluated through two consequences: athlete performance and athlete satisfaction. When the leader behaves in accordance with team members’ preferences and the needs of the situation, it is hypothesized that team members will experience higher levels of performance and greater amounts of satisfaction. These consequences will also provide feedback to the leader that will then influence their actual behavior.

Popularized in organizational psychology, a full range model of leadership (FRML; Avolio, 1999) offers an additional theoretical framework to examine athlete leadership. It is important to note from the outset that in developing a “full range” view of leadership, Avolio (1999) stressed other aspects of leadership yet to be discovered or classified will undoubtedly expand the range of leadership behaviors. In this model, leadership is believed to range from active-passive and effective-ineffective leadership behaviors (see Figure 2). Therefore, leadership is viewed as multidimensional including transformational, transactional, and laissez-faire behaviors (Price & Weiss, 2013). Recent research has shown that both transformational and transactional leadership behaviors are effective in sport (e.g., Callow, Smith, Hardy, Arthur, & Hardy, 2009; Price & Weiss, 2011, 2013). This is supported by research from organizational psychology that suggests effective leaders display both transformational and transactional leadership behaviors (Avolio, 1999).
Transformational leadership involves a relationship between the leader and follower that is built upon personal, emotional, and inspirational exchanges (Burns, 1978). It underlines the leader-follower relationship and is founded upon the principle that the leader can help develop their followers into future leaders (Bass, 1985). Transformational leadership behaviors include idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Idealized influence occurs when a leader acts as a role model by promoting values and acting in an appropriate manner (Sosik & Jung, 2010). Inspirational motivation takes place when a leader behaves in ways that motivate and inspire those around them (Sosik & Jung, 2010). The leaders energize their followers by viewing the future with optimism, stressing ambitious goals, projecting an idealized vision, and communicate to their followers that the vision is achievable. Intellectual stimulation includes behaviors that encourage followers to be innovative and creative (Sosik & Jung, 2010). Leaders challenge their followers to reframe problems, question assumptions, and approach old situations with new methods and perspectives. Lastly, leaders who show individual consideration recognize and respect their followers’ personal needs and feelings (Sosik & Jung, 2010).

Transactional leadership is defined as an exchange processes between the leader and follower that is subject to the follower’s performance (Burns, 1978). Transactional leadership includes the behavior contingent reward, which is characterized by an exchange process between the leader and follow that is contingent upon reward for cooperation or punishment for lack of compliance (Sosik & Jung, 2010).
Viewed as the most passive and ineffective form of leadership, laissez-faire, also known as non-leadership, is defined as an absence of leadership. Individuals who display laissez-faire behaviors avoid responsibility and are unconcerned with important issues (Sosik & Jung, 2010).

**Measuring Athlete Leadership**

Similar to the theories and frameworks discussed above, the measurement tools most often employed in athlete leadership research have predominantly been adopted from sport coaching research and organizational psychology. The following section will first examine an inventory developed to measure leadership characteristics of athletes. Next, inventories used to measure leadership behaviors of athletes will be presented.

In order to measure the leadership characteristics of athletes, Glenn and Horn (1993) developed the Sport Leadership Behavior Inventory (SLBI). This inventory was developed using an interactional approach to leadership effectiveness, which suggests that the specific leader characteristics that are most effective are context-specific (Glenn & Horn 1993). The SLBI consists of 25 items; 19 of which measure personal characteristics deemed desirable for athlete leaders to possess, and six of which are filler items. Responses are provided on a 7-point Likert scale. Notably, the SLBI can be used to rate one’s own leadership characteristics, and how coaches, and peers perceive the leadership characteristics of team members. For instance, when self-rating, responses on the Likert scale range from 1 (*never like me*) to 7 (*always like me*). When rating a teammate, responses range from 1 (*never like him/her*) to 7 (*always like him/her*). In order to increase the usability of the SLBI, Glenn and Horn also developed a shortened version consisting of 11 items, which has demonstrated to be highly correlated with the
longer original version of the SLBI \( (r = .96) \). The descriptors used to characterize the leadership attributes include athlete leaders being determined, positive, motivated, consistent, organized, responsible, skilled, confident, honest, leader, and respected. Similar to the original SLBI, responses to the shortened version are provided on a 7-point Likert scale. Both SLBI scales have demonstrated acceptable test-retest reliability and content validity (Glenn & Horn, 1993; Moran & Weiss, 2006). Specifically, Glenn and Horn assessed the internal consistency of items comprising the three possible assessment options (i.e., self-ratings, coach ratings, and peer ratings). Cronbach’s alpha were computed and demonstrated very high internal consistency for all three scales: self-ratings \( (25\text{-item SLBI}), \alpha = .91; \) coach ratings \( (11\text{-item SLBI}), \alpha = .92; \) and peer ratings \( (11\text{-item SLBI}), \alpha = .88. \)

In addition to examining the characteristics of athlete leaders, researchers have also studied their leadership behaviors. In one of the first of such studies, Loughead and Hardy (2005) utilized the Leadership Scale for Sports (LSS; Chelladurai & Saleh, 1980) to determine specific behaviors displayed by athlete leaders. While originally developed to measure coaching behaviors, the LSS is a 40-item inventory that measures five behaviors (i.e., democratic behavior, autocratic behavior, positive feedback, social support, and training and instruction). Democratic behavior (9 items) assesses the extent to which the leader allows team members to participate in decisions related to the team. An example item is “Asks for the opinion of team members on strategies for specific competitions.” Autocratic behavior (5 items) assesses a leader’s independence in decision-making. An example item is “Works relatively independent of the athletes.” Positive feedback (5 items) assesses leader behavior that reinforces a team member by
recognizing and rewarding good performance. An example item is “Tells a team member when he/she does a particularly good job.” Social support (8 items) assesses leader behavior aimed at creating a positive team environment and cultivating interpersonal relationships with team members. This includes showing genuine concern for the welfare of team members. An example item is “Helps team members with their personal problems.” Lastly, training and instruction (13 items) assesses leader behavior aimed at improving athletic performance. This includes emphasizing strenuous training and teaching the skills, techniques, and tactics of the sport. An example item is “Sees to it that every team member is working to his/her capacity.” Responses are provided on a 5-point Likert scale ranging from 1 (never) to 5 (always), with higher scores reflecting stronger perceptions of leadership behaviors.

Loughead and Hardy (2005) reported the following Cronbach’s alphas for each of the five athlete leadership behaviors: democratic behavior, $\alpha = .81$; autocratic behavior, $\alpha = .75$; positive feedback, $\alpha = .85$; social support, $\alpha = .86$; and training and instruction, $\alpha = 0.87$. In addition, Vincer and Loughead (2010) conducted a confirmatory factor analysis to examine the factorial validity for a five-factor model (i.e., democratic behavior, autocratic behavior, positive feedback, social support, and training and instruction). As reported by Vincer and Loughead, the five-factor model provided a reasonably good fit to the data (Comparative Fit Index [CFI] = .99, Tucker Lewis Index [TLI] = .98, and Root Mean Square Error of Approximation [RMSEA] = .05).

The Multifactor Leadership Questionnaire (MLQ-5X; Bass & Avolio, 1995) has been used primarily in organizational psychology. Recently, it has also been used, rather sparingly, in sport psychology to measure athlete leadership behaviors (e.g., Price &
Weiss, 2013). The MLQ-5X includes 36 items representing transformational, transactional, and laissez-faire behaviors. These behaviors are assessed using eight subscales. The transformational leadership subscales include idealized influence (behaves as a role model), inspirational motivation (motivates and inspires teammates), intellectual stimulation (encourages team members to be innovative and creative), and individualized consideration (demonstrates recognition and respect for team member’s personal needs and feeling). The transactional leadership subscales include contingent reward (offers rewards in exchange for acceptable behavior or performance), management-by-exception active (takes corrective action to enforce rules and avoid mistakes before or shortly after teammates deviate from standards), and management-by-exception passive (waits for mistakes to happen and only takes action after rules have been broken or standards not met). Lastly, the laissez-faire subscale measures behaviors such as avoiding decisions and responsibilities. Responses are provided on a 5-point Likert scale ranging from 0 (not at all) to 4 (frequently, if not always). Each item begins with the stem “The person I am rating”. One of the few studies to have implemented the MLQ-5X to measure athlete leadership behaviors was conducted by Price and Weiss (2013), in which a confirmatory factor analysis showed poor model fit with high correlations between various factors.

Originally developed for use in a military setting, the Differentiated Transformational Leadership Inventory (Hardy et al., 2010) has recently also been used as a measure of athlete leadership behaviors (e.g., Callow et al., 2009). As a means of measuring athlete leadership behaviors, Callow et al. (2009) made several modifications to the original DTLI. For instance, edits were carried out to ensure appropriateness for the context of athlete leadership (e.g., the stem “My section corporal” was replaced with “My
team leader/captain”). In addition, Callow et al. deleted four items that were deemed unrelated to sport (e.g., believes each individual is crucial to the success of the section) and added nine items, which were believed to reflect transformational leadership in the sport context (e.g., praises athletes when they show improvement). Consequently, the modified DTLI consists of 26 items that measure six transformational and one transactional behavior.

Within the transformational dimension, individual consideration (3 items) assesses athlete leader behavior that demonstrates recognition and respect for team member's personal needs and feeling. An example item is “Recognizes that different athletes have different needs.” Inspirational motivation (4 items) assesses athlete leader behavior that motivates and inspires. An example item is “Talks in a way that makes me believe I can succeed.” Intellectual stimulation (4 items) assesses athlete leader behavior that encourages team members to be innovative and creative. An example item is “Challenges me to think about problems in new ways.” Fostering acceptance of group goals and promoting teamwork (3 items) assesses athlete leader behavior that promotes a focus on common goals. An example item is “Gets the team to work together for the same goal.” High performance expectations (4 items) assesses athlete leader behavior that encourages high standards. An example item is “Will not settle for second best.” Lastly, Idealized influence (4 items) assesses leader behavior that promotes values and appropriate conduct. An example item is “Leads by example.” Within the transactional behavior dimension, contingent reward (4 items) assesses athlete leader behavior that is characterized by an exchange process between the leader and team members. An example item is “Gives us praise when we do good work.” Responses are provided on a 5-point
Likert scale ranging from 1 (not at all) to 5 (all of the time). Athlete leadership research has shown the DTLI to have acceptable internal consistency and factorial validity (Callow et al., 2009). Specifically, five of the six transformational leadership dimensions and the transactional dimension had alpha coefficients greater than the generally accepted value of .70 (Nunnally & Bernstein, 1994): inspirational motivation, $\alpha = .75$; intellectual stimulation, $\alpha = .82$; fostering acceptance of group goals and promoting teamwork, $\alpha = .73$; high performance expectations, $\alpha = .86$; idealized influence, $\alpha = .81$; contingent reward, $\alpha = .82$. The only leadership behavior that fell slightly below the .70 guideline was individual consideration, $\alpha = .66$. In addition, according to the guidelines proposed by Hu and Bentler (1999), the full seven-factor model of the DTLI demonstrated factorial validity with a CFI = .98 and RMSEA = .05 (Callow et al., 2009).

**Athlete Leadership Research**

The study of athlete leadership has focused on three general areas: 1) the characteristics of athlete leaders, (2) the quantity of athlete leaders within teams, and 3) the behaviors displayed by athlete leaders.

**Characteristics of athlete leaders.** Early quantitative research examining athlete leadership in sport focused on identifying a variety of athlete leader characteristics. In one of the first studies, Tropp and Landers (1979) asked female intercollegiate field hockey players to evaluate teammates’ leadership abilities. Results demonstrated that those who were identified as athlete leaders were veteran players on their team and had strong interpersonal connections with teammates. Furthermore, findings indicated that captains were not as likely to be playing a high-interacting position (e.g., center halfback, center fullback).
Building on this research, Lee, Coburn, and Partridge (1983) studied professional and secondary school English football (soccer) players. Contrary to the Tropp and Landers’ results, Lee et al. found that players occupying central playing positions (i.e., center fullback, midfield) were more likely to be designated team captains on English football teams. Additional research has also identified athletes who have a high leadership status on their teams tend to be better performers, have more seniority on their team, and possess a greater internal locus of control (Yukelson, Weinberg, Richardson, & Jackson, 1983).

In line with these findings, Loughead et al. (2006) also found that experience on a team was important to becoming an athlete leader. Further, they found that athletes identified as being team leaders were more likely to be starters, which again reinforces the notion that athletic ability is a factor in being viewed as an athlete leader. In addition, Moran and Weiss (2006) found that, when asked to rate their own leadership ability, athletes who perceived themselves as being high in leadership also felt they had better friendships on their team and were more accepted by their peers. Moreover, it has also been found that athlete leaders have high levels of intrinsic motivation and behavioral conduct (Price & Weiss, 2011).

In addition to these quantitative studies, sport psychology researchers have also used qualitative efforts to gain an in-depth view of athletes’ and coaches’ perceptions of the characteristics of athlete leaders. Using focus groups, Holmes, McNeil, and Adorna (2010) asked intercollegiate athletes to indicate which qualities they felt best described effective athlete leaders. Consistent with findings by Dupuis et al. (2006), participants noted that athlete leaders should serve as role models, be vocal, trustworthy, and both
earn and give respect to their teammates. In addition, female athletes noted that athlete leaders should be sensitive, while male athletes stressed the importance of having leaders with experience.

Uncovering similar findings as what athletes perceived, Bucci et al. (2012) interviewed six elite-level ice hockey coaches to identify characteristics that are critical to athlete leadership. Coaches reported leaders should display values that are congruent with the coaching staff’s values and the team’s identity. They also believed athlete leaders should embody the qualities of honesty, generosity, and unselfishness both on and off the ice. Furthermore, these coaches noted that they chose leaders who tended to be mature individuals with previous playing experience in the league.

Gould, Voelker, and Griffes (2013) were interested in examining coaches’ perceptions of team captains at the high school level. In their study, coaches were selected by a group of Michigan High School Athletic Association staff members who were identified as having an intimate understanding of their state’s athletic coaches. These staff members were asked to identify coaches who were known for developing successful team captains. To ensure consistency with previous research, each staff member was provided a list of qualities and behaviors that may characterize coaches who train their captains in leadership (e.g., define leader roles, teach leadership skills). Using these criteria, ten coaches were interviewed for the study. Coaches believed effective team captains exhibited characteristics such as passion, responsibility, and confidence. They also suggested it was necessary for captains to be able to effectively manage conflicts or problems that could occur within the team.
**Quantity of athlete leaders.** In addition to studying the characteristics of athlete leaders, researchers have also been interested in examining the number of athlete leaders within a team. While previous research found that coaches believed teams required one or two athletes to provide leadership (Glenn & Horn, 1993), an accumulation of recent quantitative findings propose the actual number of athlete leaders within a team is expected to be much higher. For instance, in their examination of 238 varsity athletes from a number of independent (e.g., track and field) and interdependent (e.g., ice hockey) sport teams, Loughead and Hardy (2005) sought, in part, to examine the quantity of athlete leaders on a team. Findings indicated that athletes perceived just over one-quarter (i.e., 27%) of their teammates as serving in a leadership capacity.

Building on these findings, a number of studies have sought to examine the quantity of athlete leaders within teams in relation to various aspects of the team environment. For example, Eys, Loughead, and Hardy (2007) investigated the number of athlete leaders who occupied task (leadership targeting the achievement of team goals), social (leadership that encourages support and trust of teammates), and external (leadership that promotes and represents the team within the community) leadership functions and their influence on athlete satisfaction. Results from 218 intercollegiate athletes indicated that approximately 17.5% of athletes fulfilled task leadership functions, 17.7% fulfilled social leadership functions, and 13.2% fulfilled external leadership functions. Furthermore, athletes who perceived all three leadership functions to be equally represented within their team were more satisfied with their team’s performance and with the coordination of their team’s efforts as compared to athletes who perceived the three leadership functions to be unequally represented.
Also examining the quantity of athlete leaders within teams in relation to the team environment, Hardy, Eys, and Loughead (2008) examined whether intra-team communication mediated the relationship between the number of athlete leaders fulfilling task, social, and external leadership roles and perceptions of team cohesion. Participants included 254 Canadian university interdependent team sport athletes. The results showed that communication was found to be a significant mediator of the task leadership dispersion - task cohesion relationship.

Up to this point the majority of research examining the number of athlete leaders within a team environment focused on the perceived number on an athlete’s current team. Taking a different approach, Crozier et al. (2013) used open-ended questionnaires to examine what athletes perceived to be the ideal number of athlete leaders along with the perceived benefits associated with having this ideal number. Results from 104 surveyed varsity athletes indicated that 19% of athletes on a roster should occupy a formal leader role, while 66.5% of athletes should occupy an informal leader role. Taken together, it was found that athletes believed over 85% of team members should occupy some type of leadership role. Furthermore, athletes indicated that having an ideal number of athlete leaders on a team would positively influence group dynamics variables, including team attributions (e.g., resources), team cohesion (e.g., unity), team outcomes (e.g., performance), team structure (e.g., group norms), team processes (e.g., communication), individual outcomes (e.g., satisfaction), and leadership behaviors (e.g., transformational and transactional).

**Behaviors of athlete leaders.** Recently, a major focus of quantitative athlete leadership research has focused on examining the behaviors of athlete leaders. For
instance, Loughead and Hardy (2005) compared the leadership behaviors of coaches and those perceived to be athlete leaders. For this study 238 intercollegiate athletes from 15 teams representing a wide range of independent and interdependent sports teams were asked to complete two versions of the LSS (Chelladurai & Saleh, 1980). In one version, athletes rated the leadership behaviors of their coaches and in the other version they rated the leadership behaviors of those who they perceived as their athlete leaders. Results revealed that coaches displayed the leadership behaviors of training and instruction and autocratic behavior to a greater extent than athlete leaders, while athlete leaders exhibited more social support, positive feedback, and democratic behavior than coaches. These findings indicate that coaches and athlete leaders display different leadership behaviors.

Seeking to compare the preferences and perceptions of male and female collegiate athletes regarding athlete leader behaviors, Holmes, McNeil, Adorna, and Procaccino (2008) used a revised version of the LSS to measure athlete leader behaviors both on and off the playing field. Results from the 79 athletes (46 female, 33 male) indicated that while certain preferences of athlete leader behavior were common to men and women, other preferences were gender specific. Most notably, male and female athletes preferred their athlete leaders to be hard working on the field; however, male athletes preferred more autocratic behavior in their athlete leaders than female athletes.

Building on these findings, a number of studies have sought to examine the behaviors of athlete leaders in relation to various aspects of the team environment. For example, using the DTLI (Hardy et al., 2010) and the Group Environment Questionnaire (GEQ; Carron, Widmeyer, & Brawley, 1985), Callow et al. (2009) investigated how the transformational leadership behaviors of team captains influenced perceptions of
cohesion amongst 309 club ultimate Frisbee players from the United Kingdom. Findings indicated that the leadership behaviors of fostering acceptance of group goals and promoting team work, high performance expectations and individual consideration significantly predicted task cohesion. Additionally, fostering acceptance of group goals and promoting teamwork significantly predicted social cohesion.

Vincer and Loughead (2010) also sought to examine the relationship between athlete leadership behaviors and perceptions of team cohesion. Using the LSS (Chelladurai & Saleh, 1980), 312 athletes from 25 interdependent varsity and club level teams were asked to assess the athlete leaders currently on their team. Results revealed athletes who perceived receiving social support and positive feedback from their athlete leaders felt task and socially cohesive with their teammates. Furthermore, democratic behavior was positively associated with task cohesion, while autocratic behavior was negatively associated with both task and social cohesion.

Expanding on the above results, Price and Weiss (2013) examined the relationship between athlete leadership behaviors, cohesion, and collective efficacy. Participants were 412 female adolescent soccer players from competitive travel teams who completed the LSS (Chelladurai & Saleh, 1980), the GEQ (Carron et al., 1985) and the Collective Efficacy Questionnaire for Sports (CEQS; Short, Sullivan, & Feltz, 2005). Findings showed that transformational athlete leadership behavior was positively related to task cohesion, social cohesion, and collective efficacy. In contrast, the transactional leadership behaviors of management-by-exception active and a passive/avoidant factor (comprised of management-by-exception passive and laissez-faire leadership behaviors) were both negatively related to task cohesion.
Paradis and Loughead (2012) investigated whether cohesion served as a mediator between athlete leadership and athlete satisfaction in youth sport. Participants were 205 competitive youth sport athletes who completed the LSS (Chelladurai & Saleh, 1980), the Youth Sport Environment Questionnaire (YSEQ; Eys, Loughead, Bray, & Carron, 2009), and the Athlete Satisfaction Questionnaire (ASQ; Riemer & Chelladurai, 1998). Findings indicated that the task-related aspects of athlete leadership behaviors were positively related to task aspects of satisfaction and this relationship was mediated by task cohesion. Additionally, socially-related aspects of athlete leadership behaviors were positively associated with social aspects of satisfaction and this relationship was mediated by social cohesion.

Smith, Arthur, Hardy, Callow, and Williams (2013) examined whether intra-team communication mediated the effects of transformational leadership behaviors on task cohesion in a sample of 199 university level ultimate Frisbee players. In relation to perceptions of their captain's transformational leadership behaviors, results indicated that the communication dimensions of communication acceptance, positive conflict, and negative conflict mediated the relationship between the leadership behavior of foster acceptance of group goals and task cohesion.

Leadership Development

In this section of the literature review, leader and leadership development will be conceptualized. This will be followed by an outline of the evolution of leadership theory. Next, leader and leadership development will be defined and a conceptual model of leader development will be presented. To conclude, literature on leader and leadership
development in organizational and sport contexts (i.e., athlete leadership) will be
explored.

**Conceptualizing Leader and Leadership Development**

Within leadership development literature, the terms *leader development* and
*leadership development* have been used interchangeably (Dalakoura, 2010). This
tendency represents a significant limitation within the field of leadership development
research. In fact, presenting leadership development and leader development as being
equivalent constructs has been cited as the problem with leadership development
programs (Rost, 1993). It has been proposed that the confusion in distinguishing between
leader development and leadership development may be the result of early leadership
research that was grounded predominately in leadership theories that focus primarily on
the individual leader (Day, 2001; Michalski & Vilotic, 2012). To overcome this
conceptual confusion, there have been recent calls to differentiate between leader and
leadership development (Michalski & Vilotic, 2012). Prior to defining and highlighting
the difference between leader and leadership development, it is important to outline the
evolution of leadership theory.

**The Evolution of Leadership Theory**

This section of the literature review will briefly highlight the various leadership
theories that have been dominant over the last eight decades.

**Trait theories (1930s).** One of the first attempts to examine leadership focused
on identifying individual traits that differentiated leaders from non-leaders (House &
Aditya, 1997). Researchers’ efforts were concentrated on studying prominent individuals
(e.g., Mohandas Gandhi) to document their innate attributes (Northouse, 2013).
Consequently, the trait theories developed during this time are known commonly as the “great man” theories (Northouse, 2013). Research has shown that traits such as intelligence, self-confidence, determination, integrity, and sociability have been identified as key leadership traits (Northouse, 2013). A limitation of these theories, however, has been the failure to isolate definitive traits that consistently result in effective leadership (Horner, 1997). Rather, the research findings tend to suggest that many traits contribute to a person’s ability to lead (Northouse, 2001). Lastly, while a number of leaders might possess similar traits, the absence of those same traits does not necessarily result in an inability to lead.

**Behavioral theories (1940s-1950s).** The emergence of behavioral leadership theories marked a significant shift in the general focus of leadership research (Northouse, 2013). Rather than attempting to identify specific traits, researchers’ efforts were concentrated on determining how leaders behave (Horner, 1997). One of the major empirical contributions that emerged from this line of research was the identification of two broad classes of leader behaviors known as, task-oriented and person-oriented (House & Aditya, 1997). Task-oriented behaviors facilitated goal accomplishment and helped group members achieve their goals while person-oriented behaviors helped followers feel comfortable with themselves, their group members, and their situation (Northouse, 2013). A significant impact of this research was its ability to expand the scope of leadership research to include the behaviors of leaders (Northouse, 2013). Unfortunately, as with trait research, leaders’ role demands, the differences in dispositions of leaders and followers, and the context were not taken into consideration when studying the behaviors of leaders (House & Aditya, 1997). This oversight has been
suggested as a contributing factor to researchers’ inability to identify a set of leader
behaviors that would consistently result in effective leadership (House & Aditya, 1997).

**Contingency theories (1960s-1970s).** Another paradigm shift in leadership research came in the form of contingency theories. As mentioned above, both trait and behavioral theories focused on the individual leader. Contingency theories helped broaden this narrow view by expanding the focus of research to include the leader, context, and followers (Michalski & Vilotic, 2012). Consequently, the performance of the leader would be contingent upon a number of factors such as the situation, task, and people (Horner, 1997). This development was a crucial advancement in leadership theory as it began to recognize the complexities of leadership.

**Leader-member exchange theory (1970s).** Leader-member exchange (LMX) theory emphasizes the development and effect of a series of distinct dyadic relationships between the leader and follower (Hughes, Ginnett, & Curphy, 2012). It contends that rather than treating all followers as equals, leaders create separate relationships with each member (Hughes et al., 2012). These relationships are categorized into two major groups known as the in-group and out-group (Northouse, 2013). Researchers suggest that leaders form high-quality relationships with in-group members and low-quality relationships with out-group members (Northouse, 2013). Consequently, in-group members receive increased influence, rewards, and opportunities while out-group members receive standard benefits and responsibilities (Hughes et al., 2012; Northouse, 2013). The focus on the importance of leader-member exchanges is a significant contribution of LMX theory; however a key limitation is its failure to identify specific behaviors that lead to high-quality relationships.
Transformational leadership theory (1970s-1980s). Transformational leadership theory has received substantial research attention. As with LMX theory, the emphasis is on the leader-follower relationship (Bass, 1985). It is theorized that leadership falls on a continuum of active-passive and effective-ineffective forms of leadership (see Figure 2). This has become known as a FRML (Avolio, 1999) where leadership is multidimensional; comprised of transformational (i.e., leaders motivate and inspire followers to perform and develop into future leaders), transactional (i.e., leaders implement exchange processes with followers that are contingent upon promises of reward or punishment), and laissez-faire (i.e., absence of leadership) behaviors (Price & Weiss, 2013). The recognition of a continuum of leadership behaviors is a significant contribution of transformational and transactional leadership theory. Researchers caution, however, as “it is often interpreted too simplistically as an ‘either-or’ approach” (Northouse, 2001, p.158). In fact, effective leaders make use of both transformational and transactional leader behaviors (Bass, 1985).

Shared leadership (2000s). As mentioned earlier, the traditional conceptualization of leadership is one person projecting downward influence on team members, a process known as vertical leadership. Indeed, the majority of the above theories subscribe to this notion. However, emerging research points to the presence and importance of shared leadership (Pearce & Conger, 2003). At its core, shared leadership is a mutual influence process between team members. It is characterized by the serial emergence of official (i.e., formal) as well as unofficial (i.e., informal) leaders (Pearce, 2004). Fundamentally, it highlights the development of leadership from being solely the responsibility of one individual to being carried out by numerous group members. This
shift is supported by research suggesting that a single appointed leader is unlikely to exhibit all necessary leadership behaviors or have all of the skills, knowledge, and abilities necessary to carry out all leadership roles (Barry, 1991; Carson, Tesluk, & Marrone, 2007; Pearce & Manz, 2005; Pearce, Manz, & Sims, 2009). Consequently, it has been advocated that all group members be provided leadership development opportunities (Pearce & Sims, 2002).

**Leader and Leadership Development Defined**

Until recently, the majority of literature concerning leadership development has been overwhelmingly represented as an individualistic and hierarchical construct, focusing on the knowledge, traits, behaviors, or skills of an individual leader. This perspective offers an incomplete view of the complex and multifaceted leadership development process (Senge, 1995). As a result, recent research has made a clear distinction between leader and leadership development (e.g., Day, 2001; O’Toole, 2001; Van Velsor, McCauley, & Ruderman, 2010) while stressing the importance of developing both individuals as leaders and leadership capabilities within teams (Day, 2001).

Recent efforts have attempted to disentangle the two concepts (Day, 2001; Van Velsor et al., 2010). Accordingly, leader development has been defined as expanding an individual’s capacity to engage in leading-following processes (Day, 2001). That is, leader development is focused on developing an individual’s ability to be effective in leadership roles and processes (Day, 2001; McCauley, Moxley, & Van Velsor, 1998; Van Velsor et al., 2010). In contrast, leadership development may be defined as developing the collective ability of team members to engage effectively in leadership roles and processes (Day, 2001; McCauley et al., 1998; Van Velsor et al., 2010). Importantly,
within both definitions, leadership roles may be formal or informal in nature while leadership processes are those that allow team members to work together in meaningful ways (Day, 2001; McCauley et al., 1998; Van Velsor et al., 2010). Put another way, leader development focuses on building human capital where the emphasis is on intrapersonal development in areas such as self-confidence, individual-based knowledge, skills, behaviors and abilities that are associated with leadership roles (Day, 2001). Conversely, leadership development focuses on building social capital through the development of interpersonal relationships in areas such as social skills and social awareness (Day, 2001). In sport, such areas include group dynamics variables such as cohesion, communication, motivational climate, and athlete satisfaction. In addition, Van Velsor et al. (2010) propose that leadership development may be accomplished through developing a team’s shared beliefs about leadership, developing their collective leadership practices, and evaluating their ability to produce leadership. It is important to note that leader development is one aspect of the broader process of leadership development.

**Conceptual Model of Leader Development**

It has been argued that Full Range Leadership Development (FRLD; Bass & Avolio, 1999) is the premier leadership paradigm. As noted by Ardichvili and Manderscheid (2008), not only is there a significant body of literature documenting the validity of the framework (Bass, 1998), but there is also substantial evidence of it being used successfully in leadership training and development (Avolio, 2005; Avolio & Gardner, 2005). Recently, Sosik (2006) presented a process model for understanding FRDL (see Figure 3). The model is theory driven and empirically supported comprising
of antecedents, full range leadership behaviors, follower influence processes, and outcomes (Sosik & Jung, 2010). Within this model, the antecedents include leader and follower attributes (e.g., age, gender, values, attitudes) as well as the unique attributes of the leader-follower relationship (e.g., mutual trust, length of relationship). Individuals then have a variety of leadership behaviors (i.e., transformational, transactional, or laissez-faire) they can display in varying amounts depending on the antecedents and situational context. For instance, they may use transactional behaviors to actively exchange rewards for good performance, or they may use transformational behaviors to promote change by influencing their fellow team members. The interaction between the leader, follower, and situation will then impact various individual- (e.g., effort, performance, satisfaction) and team-level outcomes (e.g., cohesion, collective efficacy, shared leadership).

**Leader and Leadership Development Research**

The following section will be divided into two areas of current research: (1) leader and leadership development research in organizations, and (2) leader development research in sport.

**Leader and Leadership Development in Organizations**

Given the breadth of leadership development research in the business and industry literature, a number of meta-analyses have attempted to better understand this area of research (e.g., Burke & Day, 1986; Collins, 2001; Collins & Holton, 2004; Russon & Reinelt, 2004). Unfortunately these meta-analyses have been limited in focus (e.g., examining a single leadership theory) and have been restricted by research design and methodological limitations, such as examining non-experimental interventions (Avolio,
Reichard, Hannah, Walumbwa, & Chan, 2009). Recognizing these limitations, Avolio et al. (2009) conducted a comprehensive review of 200 leadership intervention studies to determine whether “leadership interventions or leadership development initiatives make a difference, and if so, by what models or methods and with which outcomes” (Avolio et al., 2009, p.766). Specifically, the three guiding research questions examined if the impact of leadership interventions differ (1) comparing training or developmental versus other types of leadership interventions (e.g., scenarios, role play), (2) as a function of leadership theory, and (3) for affective, behavior, and organizational performance outcomes.

Overall, results indicated leadership interventions produced a 66% probability of achieving a positive outcome as compared to a 34% chance of success for the comparison group. Concerning the type of intervention, results indicated slightly stronger effects for non-developmental approaches. Avolio et al. (2009) reasoned that this finding may reflect the amount of effort required to achieve intrapersonal change. However, the similarity in effect sizes, “offers positive evidence of the efficacy of leader training and development interventions” (Avolio et al., 2009, p.779).

Regarding the choice of leadership theory, little difference was found between the implementation of a traditional (i.e., describe leader behavior in terms of leader-follower exchange relationships, providing direction and support, and reinforcement of behaviors) or a newer leadership theory (i.e., emphasizes inspirational messages, emotional feelings, values, individualized attention, and intellectual stimulation). Rather, both showed a moderately positive overall impact. Interestingly, Pygmalion style leadership (i.e., holding positive expectations about team members’ performance) showed the largest
effect when compared with traditional and newer leadership styles. However, Avolio et al. noted that the Pygmalion interventions should be evaluated with caution given a broad range of effects. Additionally, it has been suggested that the communication of positive leader expectancies to followers may simply be a part of transformational leadership, which is identified as a newer leadership style (Avolio et al., 2009). Consequently, if the Pygmalion interventions had been included with the newer interventions, the effects for that category would have risen over those of the traditional interventions (Avolio et al., 2009).

With regards to intervention outcomes, results indicated that programs grounded in newer theories showed larger effects for affective and cognitive outcomes than ones grounded in traditional theories. However, those grounded in traditional theories had larger effects on behavioral outcomes. Interventions grounded in Pygmalion leadership had larger effects for behavioral and cognitive outcomes than either newer or traditional theories. Lastly, interventions grounded in Pygmalion leadership showed similar effects to newer theories when examining affective outcomes.

**Selected Practices in Leader and Leadership Development**

Given the wealth of leader development research, Day (2001) as well as Day and Harrison (2006) presented narrative reviews examining the most popular and promising practices used to develop leaders and leadership. While many of these practices have proven useful for leader development, it is believed that they may also be used for leadership development, however further empirical research is needed to investigate this possibility (Day, 2001; Day & Harrison, 2006).
**Formal classroom programs.** One of the most common practices to leadership development has been formal classroom programs (Day & Harrison, 2006). Through such programs, basic principles of leadership are presented, discussed, and reflected on (Day & Harrison, 2006). Specifically, participants are encouraged to apply leadership principles to their personal experiences to stimulate self-reflection, self-awareness, and self-insight (Conger, 1992; Day & Harrison, 2006).

**Multisource feedback.** Also known as 360-degree feedback, multisource feedback has received significant research attention in the last 15 years (Day, 2001; Day & Harrison, 2006; Lepsinger & Lucia, 2009). Through this practice, performance evaluations of an individual are collected from multiple sources representing the complete circle of relevant viewpoints (Warech, Smither, Reilly, Millsap, & Reilly, 1998). The information collected can be used to plan and map specific development paths (Day & Harrison, 2006). For instance, in terms of leader development, individual goals could be set to develop a particular leadership behavior.

**Executive coaching.** Executive coaching is defined as “an experiential and individualized leader development process that builds a leader’s capability to achieve short- and long-term organizational goals” (Ennis, Goodman, Otto, & Stern, 2012, p.10). It can be conducted through one-on-one and/or group interactions that are driven by data gathered from multiple sources (Ennis et al., 2012). This practice is used to improve an individual’s performance, personal satisfaction, and organizational effectiveness (Kilburg, 1996).

**Mentoring.** Mentoring is a process in which a more experienced and knowledgeable individual, known as the mentor, acts as a role model and provides
support and guidance to a developing novice, known as the protégé. Specifically, through observing and interacting with their protégé, a mentor assists in that person’s development (Weaver & Chelladurai, 1999). This practice can be fostered formally or informally within teams (Day & Harrison, 2006).

**Networking.** Through various development activities and social events aimed at building broader individual networks, networking aims to break down barriers and facilitate communication between units within teams (Day, 2001). Day and Harrison (2006) assert that by expanding social networks, individuals can increase their resources (e.g., knowing who has certain expertise), develop broader ways of viewing problems, and shape new ways of working with others. Consequently, networking is believed to be an excellent means of enhancing social capital within teams (Day, 2001).

**Outdoor challenges.** Outdoor training such as high-ropes obstacle courses and white-water rafting have become popular leadership development practices (Conger, 1992; Day & Harrison, 2006). Such programs are designed to develop intrapersonal (e.g., overcoming risk-taking fears) and interpersonal skills (e.g., teamwork) through participation, trust, and collaboration (Conger, 1992; Day & Harrison, 2006).

**Job assignments.** Hands-on, experiential learning has long been recognized as important to the development of leadership abilities, especially when assignments are matched with individuals’ developmental needs (Day, 2001). As discussed by Day and Harrison (2006), providing individuals with challenging assignments that are developmental and learning oriented encourage the development of new skills (e.g., team building and strategic thinking). Importantly, these assignments can fall within an individual’s current role or outside of it through role rotation (Day & Harrison, 2006).
**Action learning.** Action learning is a practice that has received increased attention in leadership development literature (Conger, 1992; Day, 2001). Described as learning directed at real problems within the context where participants will be employing these newly acquired leadership skills, action learning may provide more meaningful leadership developmental experiences (Day, 2001; Day & Harrison, 2006).

**Additional recommendations.** In addition to the above techniques, further recommendations regarding the implementation of leadership development programs have been offered. For instance, Conger (1992) recommended making pre- and post-course contact with participants. This may come in the form of assignments or providing participants with information packets. It has also been suggested that learning and development can be enriched by encouraging instructors to incorporate a number of different learning strategies (e.g., lecture, case study, multimedia; Conger, 1992; Gould & Voelker, 2012). In addition, it is important to emphasize that leader development is a process (Conger, 1992; Gould & Voelker, 2012). As such, it is recommended to reinforce this process by incorporating multiple sessions (Conger 1992). Lastly, irrespective of the techniques used, it is vital to link the development of intrapersonal skills (i.e., human capital) with the development of interpersonal skills (i.e., social capital; Day & Harrison, 2006).

**Leader Development in Sport**

Within sport, no research has yet to examine leadership development. As such, only extant leader development research will be discussed. Research examining athlete leadership has identified a number of positive associations such as increases in collective efficacy (Price & Weiss, 2011), team cohesion (Vincer & Loughead, 2010), and athlete
satisfaction (Eys et al., 2007). Despite these benefits, athlete leader development programs are scarce. While there is research suggesting that leadership qualities develop when athletes are afforded opportunities to lead (Grandzol, Perlis, & Draina, 2010), other research has revealed conflicting results. For instance, in their sample of high school sport team captains, Voelker, Gould, and Crawford (2011) found these individuals received little to no training for their leadership positions. As a result, these captains did not feel prepared to fulfill their responsibilities. The scarcity of athlete leader development programs is not surprising given the relative infancy of athlete leadership research. However, this shortcoming is significant given that mere participation in sport does not automatically foster leadership (Gould & Voelker, 2012), nor does it correlate to an individual becoming a leader as an adult (Extejt & Smith, 2009).

In one of the few studies examining athlete leader development, Gould and Voelker (2010) used a formal educational approach to implement a team captain training program that consisted of a one-day in-person clinic and a self-study captain’s guide. Participants included sophomore and junior high school athletes who were purposefully selected to attend the intervention by their high school athletic departments. These participants were either currently serving as a captain or were identified as “possessing the leadership potential to become one in the future” (Gould & Voelker, 2010, p. 4). The results of this study focused on what has been learned. Specifically, Gould and Voelker discussed successes of the program (e.g., athletes have viewed the instructional staff as knowledgeable), changes that have been made to the program (e.g., increased use of a facilitation approach), and present challenges (e.g., involving the right student athletes). In addition, future directions (e.g., developing a concurrent program for coaches) and
implications for future practice (e.g., bringing attention to athlete leadership development) are discussed. Importantly, the focus on facilitating athlete driven discussions, the use of a self-study captain’s guide, and the emphasis of leadership as a skill that can be learned and developed are major strengths of this program. However, along with these strengths, there are several limitations. Primarily, the program is not clear regarding its theoretical foundation. Also, as mentioned above, participation was restricted to athletes who were either current team captains or were identified as possessing leadership potential to be a future captain. While Gould and Voelker note the importance of including athletes who are motivated to be in the program, it has been reported by coaches that poor selection practices (i.e., choosing the wrong person as captain) are problematic (Gould, Voelker, & Griffes, 2013). Consequently, it is conceivable that athletes who would potentially benefit from the leadership training program may have been overlooked. In addition, current research has advocated all team members be included in leadership training, as it has been demonstrated that a high proportion of team members actually fill formal and informal leadership roles (Crozier et al., 2013).

Using a case study approach, Voight (2012) also sought to implement an athlete leader development program. Participants for this study included two NCAA Division I volleyball teams. Each team participated in a separate leadership development intervention that included 15 stages developed by the author. These stages covered topics such as Leadership 101: Reality Check (i.e., responsibilities of being a team leader), Sharing of Reflective Responses/Discussion (i.e., open exchange of responses with co-captains, assistant captains, apprentices, coaching staff, and leadership consultant), and
Education-How Best to Accomplish Responsibilities (i.e., discussion with captains, coaches, and leadership consultant regarding the way in which leadership responsibilities should be carried out). The objectives of the program, which were similar for both teams, included: (1) return to the Final Four; (2) improve team communication and functioning; (3) assist in leading the team on a day to day basis; and (4) leadership development of captains, assistant captains, and captain apprentices. The intervention included emails, visits by the author, and video conferences with the author. The results of individual interviews with the team captains of both teams highlighted important information for future leadership development programs to consider, including the perceived benefits of the intervention (e.g., seasonal goals and intervention objectives were accomplished), perceived impact of leadership on team and teammates (e.g., team cohesion), challenges of leading the team (e.g., difficult to ensure all teammates’ contributions were recognized), leadership lessons learned (e.g., individual leadership skills), and suggestions for how the intervention could be improved (e.g., involve more team members).

Although this study highlighted important information regarding the implementation of an athlete leader development program, limitations remain. Primarily, similar to Gould and Voelker (2010), the program does not appear to be theoretically grounded. Rather Voight (2012) simply states that the program is grounded in leadership research and organizational psychology. In addition, while the interviews resulted in important information garnered from the captains, there were no debriefing interviews conducted with other team members or the coaching staff. Also, although the four objectives of the program were stated to be accomplished, other than for the first
objective (i.e., help the team return to the final four), there were no quantitative measures put in place to objectively substantiate those assertions.
References


doi:10.1016/j.leaqua.2006.02.002


doi:10.1016/j.psychsport.2006.04.005


doi:10.1016/j.psychsport.2004.02.001


Price, M. S., & Weiss, M. R. (2013). Relationships among coach leadership, peer leadership, and adolescent athletes’ psychosocial and team outcomes: A test of


Figure 1. Adapted from “Leadership in Sports,” by P. Chelladurai, 2007. In G. Tenenbaum and R. C. Eklund (Eds.), *Handbook of sport psychology* (pp. 113-135). Hoboken, NJ: John Wiley & Sons, Inc.
Figure 3. Adapted from “Full range leadership development: Pathways for people, profit, and planet,” by J. J. Sosik and D. I. Jung, 2010. New York: Taylor & Francis.
APPENDICES

Appendix A

Athlete Descriptives

Please tell us a little about yourself by answering the questions below.

First name: ________________________ Last name: ________________________

Age: ____ yrs.

Gender: Male: ____ Female: ____ Other: ____

What university sport do you currently participate in?  Volleyball  Basketball

How many years have you played with this team (include this season)?

  1st  2nd  3rd  4th  5th

What position do you usually play on this team? ________________________

Have you ever received any type of leadership training?  Yes  No

If you answered yes to the above question, please explain the type of training you received:

This section deals with the leadership you provide. Please read the descriptions below and select one **ONLY** if it applies to you. If it does not apply to you, please proceed to the next page.

<table>
<thead>
<tr>
<th>Formal Leader</th>
<th>Informal Leader</th>
</tr>
</thead>
<tbody>
<tr>
<td>(An athlete that is selected by the team or coach to be in a leadership position. Such as captain, co-captain, or assistant coach)</td>
<td>(Established through interactions with team members, not formally appointed by coach or team selection)</td>
</tr>
</tbody>
</table>

If you have selected this option, please circle the option below that applies to your formal leadership position.

  Captain  Assistant Captain
Appendix B

Leadership Scale for Sports (LSS; Chelladurai & Saleh, 1980)

Using the following scale, please circle a number from 1 to 5 to indicate your level of agreement with each of the following statements regarding yourself.

<table>
<thead>
<tr>
<th>1 Never</th>
<th>2 Seldom</th>
<th>3 Occasionally</th>
<th>4 Often</th>
<th>5 Always</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>25% of the time</td>
<td>50% of the time</td>
<td>75% of the time</td>
</tr>
</tbody>
</table>

I …

1. See to it that every team member is working to his/her capacity. 1 2 3 4 5
2. Explain to team members the techniques and tactics of the sport. 1 2 3 4 5
3. Pay attention to correcting team members’ mistakes. 1 2 3 4 5
4. Make sure that team members’ roles on the team are understood. 1 2 3 4 5
5. Instruct team members individually in the skill of the sport. 1 2 3 4 5
6. Figure ahead on what should be done. 1 2 3 4 5
7. Explain to team members what they should and what they should not do. 1 2 3 4 5
8. Expect team members to carry out their assignment to the last detail. 1 2 3 4 5
9. Point out team members’ strengths and weaknesses. 1 2 3 4 5
10. Give specific instructions to team members as to what they should do in every situation. 1 2 3 4 5
11. See to it that the efforts are coordinated. 1 2 3 4 5
12. Explain how team members’ contributions fit into the total picture.  
13. Specify in detail what is expected of team members.  
14. Ask for the opinion of team members on strategies for specific competitions.  
15. Get team members’ approval on important matters before going ahead.  
16. Let fellow team members share in decision making.  
17. Encourage team members to make suggestions for ways of conducting practices.  
18. Let team members share in discussion about goals for the team as a whole (e.g., the number of wins over the following month).  
19. Let team members try their own way even if they make mistakes.  
20. Ask for the opinion of team members on important team matters.  
21. Let team members work at their own speed.  
22. Let team members decide on the plays to be used in the game.  
23. Work relatively independent of other team members.  
24. Not explain his/her/their actions(s).  
25. Refuse to compromise a point.  
27. Speak in a manner not to be questioned.  
28. Help team members with their personal problems.
<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>29. Help team members settle their conflicts.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>30. Look out for the personal welfare of team members.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>31. Do favors for team members.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>32. Express care for other team members.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>33. Encourage team members to confide in him/her/them.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>34. Encourage close and informal relations with team members.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>35. Invite team members to his/her/their home(s).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>36. Compliment a team member for his/her performance in front of others.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>37. Tell a team member when he/she does a particularly good job.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>38. See that a team member is rewarded for a good performance.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>39. Express appreciation when a team member performs well.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>40. Give credit when credit is due.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix C

Differentiated Transformational Leadership Inventory (DTLI; Callow et al., 2009)

Using the following scale, please circle a number from 1 to 5 to indicate your level of agreement with each of the statements regarding yourself.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at All</td>
<td>Seldom</td>
<td>Occasionally</td>
<td>Often</td>
<td>All of the Time</td>
</tr>
<tr>
<td>25% of the time</td>
<td>50% of the time</td>
<td>75% of the time</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

I ...

<table>
<thead>
<tr>
<th></th>
<th>Not at All</th>
<th>All the Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Recognize that different team members have different needs.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2. Consider that different team members have different strengths and abilities from others.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>3. Help team members to develop their strengths.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4. Talk in a way that makes my teammates believe they can succeed.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>5. Talk optimistically about the future.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>6. Talk enthusiastically about what needs to be accomplished.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>7. Express confidence that goals will be achieved.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>8. Get team members to re-think the way they do things.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>9. Challenge team members to think about problems in new ways.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>10. Show team members how to look at difficulties from a new angle.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>
11. Try to help team members work out how to solve problems.

12. Encourage team members to be team players.

13. Get the team to work together for the same goal.

14. Develop a strong team attitude and spirit among athletes.

15. Will not settle for second best.

16. Expect my teammates to achieve high standards.

17. Expect a lot from my teammates.

18. Always expect us to do our best.

19. Lead from the front whenever I can.

20. Am a good role model for my teammates to follow.

21. Lead by example.

22. Lead by “doing” rather than simply “telling”.

23. Praise team members when they show improvement.


25. Give my teammates praise when they do good work.

26. Give my teammates special recognition when they do very good work.
Appendix D

Group Environment Questionnaire (GEQ; Eys et al., 2007)

Using the following scale, please circle a number from 1 to 9 to indicate your level of agreement with each of the following statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I enjoy being a part of the social activities of this team.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>2. I am happy with the amount of playing time I get.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>3. I am going to miss my teammates when the season ends.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>4. I am happy with my team’s level of desire to win.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>5. Some of my best friends are on this team.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>6. This team gives me enough opportunities to improve my personal performance.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>7. I enjoy team parties more than other parties.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>8. I like the style of play on this team.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>9. For me, this is one of the most important social groups to which I belong.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>10. Our team is united in trying to reach its goals for performance.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>11. Members of our team would rather get together as a team than hang out on their own.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>12. We all take responsibility for any loss or poor performance by our team.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
</tbody>
</table>
13. Our team members party together often.

14. Our team members have the same aspirations regarding the team’s performance.

15. Members of our team would like to spend time together in the off season.

16. If members of our team have problems in practice, everyone wants to help them so we can get back together again.

17. Members of our team stick together outside of practices and games.

18. Members of our team communicate freely about each athlete’s responsibilities during competition or practice.
Appendix E

Athlete Satisfaction Questionnaire (ASQ; Riemer & Chelladurai, 1998)

Using the following scale, please circle a number from 1 to 7 to indicate your level of agreement with each of the following statements.

<table>
<thead>
<tr>
<th>I am satisfied with …</th>
<th>Not at All Satisfied</th>
<th>Moderately Satisfied</th>
<th>Extremely Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How the team works (worked) to be the best.</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>2. My social status on the team.</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>3. The degree to which I do (did) my best for the team.</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>4. The degree to which I have reached (reached) my performance goals during the season.</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>5. The extent to which all team members are (were) ethical.</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>6. The extent to which teammates provide (provided) me with instruction.</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>7. The team’s win/loss record this season.</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>8. My dedication during practices.</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>9. My teammate’s sense of fair play.</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>10. The degree to which teammates share (shared) the same goal.</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>11. The guidance I receive (received) from my teammates.</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>12. The improvement in my performance over the previous season.</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>13. The role I play (played) in the social life of the team.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14. The team’s overall performance this season.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15. My enthusiasm during competitions.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16. My teammates’ ‘sportsmanlike’ behavior.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>17. Team member’s dedication to work together toward team goals.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>18. The constructive feedback I receive (received) from my teammates.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>19. The degree to which my teammates accept (accepted) me on a social level.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>20. The extent to which the team is meeting (has met) its goals for the season.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>21. The improvement in my skill level.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>22. My commitment to the team.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>23. The extent to which teammates play (played) as a team.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Appendix F

Peer Motivational Climate in Youth Sport Questionnaire (PeerMCYSQ; Ntoumanis & Vazou, 2005)

Using the following scale, please circle a number from 1 to 7 to indicate your level of agreement with each of the following statements.

<table>
<thead>
<tr>
<th></th>
<th>1 Strongly Disagree</th>
<th>2 Disagree</th>
<th>3 Slightly Disagree</th>
<th>4 Neutral</th>
<th>5 Slightly Agree</th>
<th>6 Agree</th>
<th>7 Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Help each other improve.</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Encourage each other to outplay their teammates.</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Offer to help their teammates develop new skills.</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Care more about the opinion of the most able teammates.</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Make their teammates feel valued.</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Work together to improve the skills they don’t do well.</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Make negative comments that put their teammates down.</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Try to do better than their teammates.</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Criticize their teammates when they make mistakes.</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Teach their teammates new things.</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
11. Encourage their teammates to try their hardest.  
12. Look pleased when they do better than their teammates.  
13. Make their teammates feel accepted.  
14. Want to be with the most able teammates.  
15. Praise their teammates who try hard.  
16. Complain when the team doesn’t win.  
17. Are pleased when their teammates try hard.  
18. Care about everyone’s opinion.  
19. Set an example on giving forth maximum effort.  
20. Laugh at their teammates when they make mistakes.  
21. Encourage their teammates to keep trying after they make a mistake.
Appendix G

Scale of Effective Communication in Team Sports-2 (SECTS-2; Sullivan & Short, 2011)

Using the following scale, please circle a number from 1 to 7 to indicate your level of agreement with each of the following statements. Please keep in mind that they refer to any situation in which the team interacts, not just games or practices. Also, please consider the team as a whole when answering.

**When our team communicates, we ...**

<table>
<thead>
<tr>
<th></th>
<th>Hardly Ever</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Use nicknames.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>2. Shout when upset.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>3. Get all problems out in the open.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>4. Trust each other.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>5. When disagreements arise, we try to communicate directly with those [with whom] we have a problem.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>6. Communicate our feelings honestly.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>7. Use slang that only team members would understand.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>8. Get in “each other’s faces” when we disagree.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>9. Use gestures that only team members would understand.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>10. Communicate anger through body language.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>11. Share thoughts with one another.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>12. Show that we lose our temper.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>
13. Are willing to discuss our feelings.
14. Try to make sure all players are included.
15. Compromise with each other when we disagree.
Appendix H

LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

Developing Leadership Behaviors in Athletes

You are asked to participate in a research study conducted by Dr. Todd Loughead (PhD), from the Faculty of Human Kinetics at the University of Windsor. This study has received University of Windsor REB clearance. Your participation is completely voluntary and will have no bearing on your on-going participation in your current sport.

If you have any questions or concerns about the research, please feel to contact Dr. Todd Loughead (loughead@uwindsor.ca; 519-253-3000 ext. 2450).

PURPOSE OF THE STUDY
The purpose of this research is to develop and test the effectiveness of a targeted athlete leadership development program.

PROCEDURES
If you volunteer to participate in this study, you will be asked to take part in a four-session athlete leadership development program using a workshop format. Once a month for 4 months you will meet for one hour with my co-investigator and other athletes from your group to participate in discussions and activities related to leadership. Additionally, you will be required to meet once before the beginning of the program and once following the completion of the program to fill out questionnaires pertaining to leadership behaviors and outcomes, which will take approximately 30 minutes.

POTENTIAL RISKS AND DISCOMFORTS
The current study contains minimal risks to participants. Surveys will be conducted to ensure answers are completed independently and voluntarily. In addition, no deception will be used. Participants will not be exposed to physical risks. All activities (i.e., workshop sessions and questionnaire completion) were chosen for their leadership relevance and low physical demands placed on the participants. Participants will not be exposed to psychological/emotional risks. All activities are optional and precautions have been taken to ensure confidentiality (e.g., de-identification). Responses to the questionnaires will remain confidential. All data will be kept in a password-protected file, which will only be accessible by the listed investigators.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY
The information gained from this study will advance research in the field of sport psychology. Specifically, the results will aid in the creation and implementation of an athlete leadership development program. In addition, athletes involved in the program will gain valuable insight into the importance of leadership while having the opportunity to develop their own personal leadership skills and behaviors.
COMPENSATION FOR PARTICIPATION
You will not be compensated for your participation in this study.

CONFIDENTIALITY
Responses to the questionnaires will remain confidential. All data will be kept in a password-protected file, which will only be accessible by the primary investigators. Potentially the data may also be utilized in subsequent studies conducted by the researchers. All participant data will be password-protected to ensure that only the listed investigators are able to access the data. Also, this data will be de-identified. Data will be kept indefinitely.

PARTICIPATION AND WITHDRAWAL
Participation in this study is completely voluntary. If you volunteer to participate in this study, you may withdraw at any time while completing the program, without penalties or consequences. If you withdraw from the study, you may continue participating in the leadership workshops. You may refuse to answer any questions in the questionnaires and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS
The results will be posted at the University of Windsor’s Research Ethics Board website by July 1, 2014 (http://www.uwindsor.ca/reb). If you have any additional concerns or questions, you can contact the primary investigators at the numbers listed above.

SUBSEQUENT USE OF DATA
These data may be used in subsequent studies in publications and in presentations.

RIGHTS OF RESEARCH PARTICIPANTS
If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF INVESTIGATOR
These are the terms under which I will conduct research.

_______________________________   __________________
Signature of Investigator      Date
Appendix I

CONSENT TO PARTICIPATE IN RESEARCH
Developing Leadership Behaviors in Athletes

You are asked to participate in a research study conducted by Dr. Todd Loughead (PhD), from the Faculty of Human Kinetics at the University of Windsor. This study has received University of Windsor REB clearance. Your participation is completely voluntary and will have no bearing on your on-going participation in your current sport.

If you have any questions or concerns about the research, please feel to contact Dr. Todd Loughead (loughead@uwindsor.ca; 519-253-3000 ext. 2450).

PURPOSE OF THE STUDY
The purpose of this research is to develop and test the effectiveness of a targeted athlete leadership development program.

PROCEDURES
If you volunteer to participate in this study, you will be asked to take part in a four-session athlete leadership development program using a workshop format. Once a month for 4 months you will meet for one hour with my co-investigator and other athletes from your group to participate in discussions and activities related to leadership. Additionally, you will be required to meet once before the beginning of the program and once following the completion of the program to fill out questionnaires pertaining to leadership behaviors and outcomes, which will take approximately 30 minutes.

POTENTIAL RISKS AND DISCOMFORTS
The current study contains minimal risks to participants. Surveys will be conducted to ensure answers are completed independently and voluntarily. In addition, no deception will be used. Participants will not be exposed to physical risks. All activities (i.e., workshop sessions and questionnaire completion) were chosen for their leadership relevance and low physical demands placed on the participants. Participants will not be exposed to psychological/emotional risks. All activities are optional and precautions have been taken to ensure confidentiality (e.g., de-identification). Responses to the questionnaires will remain confidential. All data will be kept in a password-protected file, which will only be accessible by the listed investigators.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY
The information gained from this study will advance research in the field of sport psychology. Specifically, the results will aid in the creation and implementation of an
athlete leadership development program. In addition, athletes involved in the program will gain valuable insight into the importance of leadership while having the opportunity to develop their own personal leadership skills and behaviors.

COMPENSATION FOR PARTICIPATION
You will not be compensated for your participation in this study.

CONFIDENTIALITY
Responses to the questionnaires will remain confidential. All data will be kept in a password-protected file, which will only be accessible by the primary investigators. Potentially the data may also be utilized in subsequent studies conducted by the researchers. All participant data will be password-protected to ensure that only the listed investigators are able to access the data. Also, this data will be de-identified. Data will be kept indefinitely.

PARTICIPATION AND WITHDRAWAL
Participation in this study is completely voluntary. If you volunteer to participate in this study, you may withdraw at any time while completing the program, without penalties or consequences. If you withdraw from the study, you may continue participating in the leadership workshops. You may refuse to answer any questions in the questionnaires and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS
The results will be posted at the University of Windsor’s Research Ethics Board website by July 1, 2014 (http://www.uwindsor.ca/reb). If you have any additional concerns or questions, you can contact the primary investigators at the numbers listed above.

SUBSEQUENT USE OF DATA
These data may be used in subsequent studies in publications and in presentations.

RIGHTS OF RESEARCH PARTICIPANTS
If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF RESEARCH PARTICIPANT/LEGAL REPRESENTATIVE
I understand the information provided for the study Leadership Development Program for Varsity Athletes as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.
Name of Participant

Signature of Participant       Date

SIGNATURE OF INVESTIGATOR
These are the terms under which I will conduct research.

Signature of Investigator       Date
VITA AUCTORIS

NAME:        Ashley M. Duguay
PLACE OF BIRTH:  Quispamsis, NB
YEAR OF BIRTH:  1986
EDUCATION:     St. Thomas University, B. A. in Psychology, Fredericton, NB, 2008
                St. Thomas University, B. Ed., Fredericton, NB, 2009
                Virginia Commonwealth University, M. Ed. in Sport Leadership, Richmond, VA, 2012
                University of Windsor, M. H. K., Windsor, ON, 2014