7-7-2020

Comparing Athletes' Perceptions of Leadership Behaviour Frequency and Effectiveness in Relation to Cohesion and Athlete Satisfaction

Mitchell D. McCaughan
University of Windsor

COMPARING ATHLETES' PERCEPTIONS OF LEADERSHIP BEHAVIOUR FREQUENCY AND EFFECTIVENESS IN RELATION TO COHESION AND ATHLETE SATISFACTION

by

Mitchell D. McCaughan

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

2020

COMPARING ATHLETES' PERCEPTIONS OF LEADERSHIP BEHAVIOUR FREQUENCY AND EFFECTIVENESS IN RELATION TO COHESION AND ATHLETE SATISFACTION

by

Mitchell D. McCaughan

_____

K. Brykman
Odette School of Business

_____

K. Chandler
Department of Kinesiology

_____

T. Loughead, Advisor
Department of Kinesiology

May 21, 2020

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 *frequency* and the *effectiveness* of leadership behaviours have been used interchangeably by researchers using the Leadership Scale for Sports (LSS; Chelladurai & Saleh, 1980) and/or Differentiated Transformational Leadership Inventory (DTLI; Callow, Smith, Hardy, Arthur, & Hardy, 2009). The primary purpose of the present study was to determine if athletes perceive differences between the *frequency* and *effectiveness* of athlete leadership behaviours. The secondary purpose was to examine the relationships between the *frequency* and the *effectiveness* of athlete leadership behaviours, cohesion, and athlete satisfaction. The sample was 80 intercollegiate varsity athletes (34 females, 46 males) from the University of Windsor. The LSS and DTLI were administered containing response formats for both frequency and effectiveness. An overall single group repeated measures MANOVA revealed a significant multivariate effect for response format, Pillai's trace = .139, $F(1,11) = 9.38$, $p < .01$, $\eta^2 = .14$, indicating that an athlete leaders' leadership behaviours significantly differed based on the perceptions of frequency and effectiveness. The within-subject effect of response format indicated a significant difference, $F(1,58) = 3.43$, $p < .01$, $\eta^2 = .14$. Post hoc ANOVAs revealed that the frequency of athlete leadership behaviours were greater for fostering acceptance of group goals and promoting teamwork, $F(1,144) = 4.03$, $p < .05$, $\eta^2 = .03$; and high performance expectations, $F(1,144) = 7.09$, $p = .01$, $\eta^2 = .05$, compared to the effectiveness of these two leadership behaviours. In addition, multiple regressions indicated that the effectiveness of athlete leadership behaviours significantly predicted both dimensions of task cohesion, along with the task and social dimensions of athlete satisfaction.

ACKNOWLEDGEMENTS

Many individuals have helped to make this thesis possible and deserve recognition. First, I would like to thank my advisor, Dr. Todd Loughead. I would like to express my deepest gratitude for the guidance, encouragement, and support throughout my time in Windsor. I feel very fortunate to have had the opportunity to have been mentored by such a remarkable scholar and person. I look forward to the next chapter of our relationship, wherever that may lead.

I would also like to thank Dr. Krista Chandler for her help and guidance throughout my experience in the MHK program, including my thesis. Both Drs. Chandler and Loughead have shaped a supportive environment in our lab, the Sport Psychology and Physical Activity Research Collaborative (SPPARC). The passion for research, teaching and developing close relationships within the Collaborative all stem from the exemplary lead of both Drs. Chandler and Loughead. To my external committee member, Dr. Kyle Brykman, your expertise in quality of communication added great value to my thesis and your insightful questions and comments encouraged me to expand my knowledge in this area; thank you.

A big thank you to all the SPPARC lab members over the years who have created a supportive and energetic environment to work in. I am grateful for the continuous help and support throughout the MHK process. I am grateful for the many connections I have made during my time at the University of Windsor.

Thank you to my mom, dad, and step-mom, Josh, and Fallon for your encouragement and emotional support throughout my graduate studies.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

RESEARCH ARTICLE

Introduction

Research attention on athlete leadership reflects its importance assigned by athletes, coaches, spectators, and the media. The majority of research examining athlete leadership has been published within the past decade since its introduction to scholarly discourse nearly 50 years ago (Loughead, 2017). A significant reason for the increased research attention can be attributed to the advancement of a definition pertaining to the construct. Loughead, Hardy, and Eys (2006) defined athlete leadership as an athlete occupying a formal or informal role within a team who influences a group of team members to achieve a common goal. Along with this definition, researchers have utilized primarily two questionnaires to assess this construct. The first is Chelladurai and Saleh's (1980) Leadership Scale for Sports (LSS) and Callow, Smith, Hardy, Arthur, and Hardy's (2009) Differentiated Transformational Leadership Inventory (DTLI) from sport coaching and military settings, respectively. The LSS and DTLI have allowed scholars to quantitatively examine a wide variety of leadership behaviours to provide a better understanding of athlete leadership.

While originally developed for investigating coach leadership, the LSS is a 40-item questionnaire that measures the frequency of five dimensions of leadership behaviour (Chelladurai & Saleh, 1980). Grounded in the multidimensional model of leadership (MML; Chelladurai, 2007; Chelladurai & Saleh, 1980), the LSS operationalizes leadership behaviour as being composed of *training and instruction*, *democratic behaviour*, *autocratic behaviour*, *social support*, and *positive feedback*. Training and instruction is viewed as the teaching and instructing behaviours that are involved in skill acquisition, physical training, and coordinating the activities of the team. Democratic behaviour is the extent to which the leader allows member participation

in the decision-making process relating to group goals, tactics, and/or strategies. Autocratic behaviour is the extent to which the leader stresses their authority over other members by independently making decisions. Social support is the extent to which the leader is involved in satisfying the interpersonal needs of the team members. The final dimension is positive feedback and is viewed as the recognition and appreciation of an athlete's performance and contribution to the team's goals. Participants are asked to rate each item on a 5-point Likert scale with response categories of 1 (*Never*), 2 (*Seldom, 25% of the time*), 3 (*Occasionally, 50% of the time*), 4 (*Often, 75% of the time*) and 5 (*Always*).

Originally developed to study military leadership (Hardy et al., 2010), the DTLI is also used to measure athlete leadership behaviours (Callow et al., 2009). The athlete leadership version of the DTLI consists of 27 items that assess the frequency of seven leadership behaviours. Grounded in the full-range model of leadership (Bass, 1996), the DTLI operationalizes leadership behaviour into six transformational leadership dimensions and one transactional dimension. The six transformational leadership dimensions are *inspirational motivation*, *individual consideration*, *intellectual stimulation*, *appropriate role modelling*, *fostering acceptance of group goals and teamwork*, and *high-performance expectations*. The transactional leadership behaviour is *contingent reward*. Inspirational motivation is viewed as athlete leaders providing meaning and challenge for their teammates. Individualized consideration is manifested where athlete leaders encourage follower growth and autonomy by actively listening, delegating tasks appropriately, and trusting individual team members. Athlete leaders foster intellectual stimulation by approaching routine situations in creative ways and encouraging innovation from their teammates. Appropriate role modelling refers to when athlete leaders lead from the front, led by example, and provide an exemplary standard for which to act.

Fostering acceptance of group goals and promoting teamwork is viewed as encouraging and developing followers' team spirit and endorsing cooperation among teammates towards a common goal. High performance expectations refers to when athlete leaders create a competitive atmosphere by expecting and encouraging high quality performances from their teammates. Finally, contingent reward is viewed as an athlete leader providing a materialistic or psychological reward for team members performing well. Participants are asked to rate the items on a 5-point Likert scale with response categories of 1 (*Not at all*), 2 (*Once in a while*), 3 (*Sometimes*), 4 (*Fairly often*), and 5 (*All of the time*).

Through the use of the LSS (Chelladurai & Saleh, 1980) and the DTLI (Callow et al., 2009), researchers have examined several team- and individual-level outcomes. Two of the more studied outcomes of athlete leadership have been cohesion and athlete satisfaction. Cohesion is viewed as one of the most important group dynamics variable (Jowett & Chaundy, 2004) since it is related to variables such as performance (Carron, Colman, Wheeler, & Stevens, 2002). Cohesion is defined as "the tendency for group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of member affective needs" (Carron, Brawley, & Widmeyer, 1998, p. 213). As it relates to the current study, athletes view their teams as more task and socially cohesive when their athlete leaders more frequently exhibit social support, positive feedback, and fostering acceptance of group goals and promoting teamwork (Callow et al., 2009; Vincer & Loughead, 2010). Further, the athlete leadership behaviours of democratic behaviour, individualized consideration, and high performance expectations have been found to be positively related to perceptions of task cohesion within sport teams (Callow et al., 2009; Vincer & Loughead, 2010). Taken together, the findings from previous research show

that the frequent use of athlete leadership behaviours influence the perceptions of task and social cohesion.

Several researchers have investigated athlete satisfaction in relation to athlete leadership. Athlete satisfaction refers to the differences between an individual's wants or expectations and perceptions of what has been received (Chelladurai & Riemer, 1997). That is, athlete satisfaction is the degree to which experiences meet an individual's standards (Riemer & Chelladurai, 1998). Researchers have shown that when a team possesses the ideal number of athlete leaders and when an equal amount of leaders fulfill each function of leadership (operationalized as task, social, and external forms of leadership), team members report higher amounts of athlete satisfaction compared to those that perceive an unequal number of athlete leaders present on their team (Crozier, Loughead, & Munroe-Chandler, 2013; Eys, Loughead, & Hardy, 2007). Further, Paradis and Loughead (2012) found that athlete leaders who frequently use the leadership behaviours of training and instruction, democratic behaviour, social support, and positive feedback have teammates who are more satisfied with their athletic experience. Athlete satisfaction is an important outcome to examine in relation to athlete leadership because it has been linked to favourable group outcomes such as cohesion and member retention (Fraser-Thomas, Côté, & Deakin, 2008; Zacharatos, Barling, & Kelloway, 2000).

To the author's knowledge, the majority of quantitative investigations involving athlete leadership have used the LSS (Chelladurai & Saleh, 1980) and/or DTLI (Callow et al., 2009). These inventories have been used as measures of athlete leadership for two reasons. First, the leadership behaviours assessed by both the LSS and DTLI have been shown to be important for athlete leaders to display (Duguay, Loughead, & Munroe-Chandler, 2018). Second, when both inventories are used together, they measure a wide range of leadership behaviours and thus

aligns with the theoretical premise that this is essential in being an effective leader (Loughead, 2017). As noted earlier both of these inventories measure how often leadership behaviours are occurring. However, a closer examination of studies that have used these inventories have used the terms *frequency* and *effectiveness* of the leadership behaviours interchangeably (e.g., Callow et al., 2009; Price & Weiss, 2013). Even though the frequency of leadership behaviours is valuable information, it can only be interpreted as the recollection of *how often* the leaders perform each behaviour. *How often* a particular leadership behaviour is exhibited may be less important if it is used in an unskillful manner or at an inappropriate time (Yukl, 1999). Likewise, if a leadership behaviour is frequently used it may reach a point where the behaviour no longer produces any type of facilitative effects after which the desired effect will cease to be positive (Pierce & Aguinis, 2013). The use of leadership behaviours may be suboptimal unless the athlete deploying the behaviours "has the declarative understanding, thinking structures, judgement and decision making skill to mesh these behaviours in the best manner at the best time for the best aim" (Cruickshank & Collins, 2016, p. 1201). In order for an athlete leader to exhibit these leadership behaviours in the best manner at the precise time for the right aim, athlete leaders must consider more than the frequency they judge to be optimal. Therefore, perceived *effectiveness* of the leadership behaviour may be more critical than the *frequency* of the leadership behaviour because producing desirable outcomes has more important implications for athlete's experiences (Boardley, Kavussanu, & Ring, 2008). Leadership effectiveness is viewed as the extent to which leadership behaviours produce a desirable outcome within an individual or group of team members based on the perception of the response and the requirements of a situation (Boardley, Kavussanu, & Ring, 2008; Nakamura & Finck, 1980). Consequently, effective leaders engage in certain behavior, which in turn influence certain outcomes (Horn,

2002; Smoll & Smith, 1989). Further and within the context of athlete leadership, it should be noted that a key consideration in athlete leadership effectiveness is teammates' own perceptions of their athlete leaders' behaviours. It is these perceptions that are believed to influence teammates' perceptions of team (e.g., cohesion) and individual (e.g., athlete satisfaction) level outcomes. As such, for the current study, an effectiveness response format was added to the LSS (Chelladurai & Saleh, 1980) and DTLI (Callow et al., 2009).

It is important to highlight the potential benefits of an effectiveness response format to investigate whether athletes are incorporating how effective leadership behaviours are when responding to the original frequency scales of the LSS (Chelladurai & Saleh, 1980) and DTLI (Callow et al., 2009). It would stand to reason that if an athlete leader frequently used a certain leadership behaviour, they would see it as effective (Weinberg, Butt, Knight, Burke, & Jackson, 2003). If these findings are found, then the results would corroborate the use of a frequency scale for the two leadership inventories. However, if the effectiveness response format adds additional information that the frequency format does not, it is conceivable that respondents evaluate and judge their answers using the information provided in the response format (i.e., anchors), as well as the question (Schwarz, 2007). In short, the contextual variables within the questionnaire (e.g., question, Likert scale values, and response format) may influence how athletes respond to each item (Schwarz, 2007). Furthermore, in a meta-analysis, Dalal (2005) found that response formats (i.e., frequency vs. agreement) impacted the bivariate relationship between organizational citizenship behaviour and counterproductive work behavior. Specifically, Dalal found that agreement ratings resulted in a stronger bivariate relationship than frequency ratings. These findings suggest that the type of response format (e.g., frequency, agreement) influences participant interpretations of survey items, and in turn, impacts their responses. Further, Dalal

speculates when assessing agreement, the participants may evaluate the leaders' intentions to perform the behaviours or the participants' attitude towards their leader performing the behaviours. These evaluations may be important given that the situation to perform certain behaviours may not have occurred, therefore, the participants would not recall their leaders performing them. This would result in a low rating on the frequency scale even though the leader may have intended to provide these behaviours. Considering these cognitive aspects in the questionnaire methodology (i.e., changes in interpretations), it could be reasoned that administering an effectiveness response format would alter the way athletes respond to the items of the LSS and DTLI.

Therefore, the first purpose of the present study was to determine if athletes perceive a difference between the frequency and the effectiveness of athlete leadership behaviours. Based on the fact that participants rated the athlete leaders on their team (as opposed to their own leadership behaviours) coupled with frequency being rated less than agreement scales, it was hypothesized that the effectiveness of athlete leadership behaviours would be greater than the frequency. The second purpose of the current study was to examine and compare the relationships between the two independent variables (athlete leadership frequency and effectiveness) and the two outcome variables (team cohesion and athlete satisfaction). It was hypothesized that the effectiveness ratings would be a stronger predictor of the outcomes than the frequency ratings because leadership behaviors may not be as consistent as the intentions to perform them (i.e., produce desirable outcome; Dalal, 2005). Based on the social and relational nature of the following leadership behaviours (Callow et al., 2009; Paradis & Loughead, 2012; Vincer & Loughead, 2010), it is predicted that the effectiveness of democratic behaviour, social support, positive feedback, fostering acceptance of group goals and promoting teamwork would

predict the social dimensions of cohesion and athlete satisfaction. Based on the task nature of the following leadership behaviours (Callow et al., 2009; Paradis & Loughead, 2012; Vincer & Loughead, 2010), it is predicted that the effectiveness of training and instruction, democratic behaviour, autocratic behaviour, positive feedback, individualized consideration, inspirational motivation, fostering acceptance of group goals and promoting teamwork, appropriate role modelling and high performance expectation would predict the task dimensions of cohesion and athlete satisfaction.

Method

Participants

The participants were 80 intercollegiate varsity athletes (34 females, 46 males) from the University of Windsor. The mean age of the participants was 20.53 years (*SD* = 1.81). The sample is comprised of athletes competing in track and field (28.7%), football (20%), basketball (18.8%), hockey (16.3%), and volleyball (16.2%). Of the 80 participants, 56 self-identified themselves as an athlete leader with 15 (27%) identifying as a formal leader and 41 (73%) as an informal leader. The athletes had competed in their sport for an average of 9.23 years (*SD* = 4.13), while competing on their current team for an average of 2.9 years (*SD* = 1.32). Of the 80 athletes, 55 (68.8%) of the athletes self-reported as starters on their teams, while 25 (31.2%) athletes self-reported as non-starters.

Measures

Demographics. To gain a sense of the athletes' backgrounds, the first inventory used was a demographics questionnaire (see Appendix A). The athletes were asked personal information such as their age, gender, and year of academic program. The remaining questions asked about which sport they participated in, tenure in that sport, tenure on the current team, and starting

status. Finally, the demographics questionnaire asked athletes to self-identify as either a formal leader, informal leader, or non-leader.

Athlete leadership behaviours. To measure the perceptions of athlete leadership behaviour, two inventories were administered. The LSS (Chelladurai & Saleh, 1980, see Appendix B) is a 40-item inventory that uses the stem "My athlete leader(s)…" and asks participants to rate the frequency concerning five types of leadership behaviours on a 5-point Likert scale, anchored by 1 (*Never*), 2 (*Seldom, 25% of the time*), 3 (*Occasionally, 50% of the time*), 4 (*Often, 75% of the time*) and 5 (*Always*). For the current study, the participants were also asked to rate the effectiveness of each item on a 5-point Likert scale, anchored by 1 (*Not effective*), 2, 3 (*Moderately effective*), 4, and 5 (*Extremely effective*). The athlete leadership behaviours measured were training and instruction (13 items; e.g., "Explains to each athlete the techniques and tactics of the sport."), democratic behavio*ur* (9 items; e.g., "Lets his/her athletes share in decision making"), autocratic behaviours (5 items; e.g., "Works relatively independent of the athletes"), social support (8 items; e.g., "Does personal favours for athletes"), and positive feedback (5 items; e.g., "Gives credit when credit is due"). The LSS has yielded convergent and discriminant validity, as well as acceptable internality reliability, with Cronbach alpha coefficients ranging from .72 to .87 when applied to athlete leadership behaviours (e.g., Loughead & Hardy, 2005; Paradis & Loughead, 2012; Vincer & Loughead, 2010).

The second inventory used to measure athlete leadership behaviours was the DTLI (Callow et al., 2009, see Appendix C). The DTLI is a 27-item inventory that measures seven dimensions of leadership behaviours on a 5-point Likert scale, anchored by 1 (*Not at all*), 2 (*Once in a while*), 3 (*Sometimes*), 4 (*Fairly often*), and 5 (*All of the time*). For the current study the participants also rated the effectiveness of each item on a 5-point Likert agreement scale,

anchored by 1 (*Not effective*), 2, 3 (*Moderately effective*), 4, and 5 (*Extremely effective*). The athlete leadership behaviours measured were individual consideration (4 items; e.g., "Recognizes that different athletes have different needs"), inspirational motivation (4 items; e.g., "Talks optimistically about the future"), intellectual stimulation (4 items; e.g., "Gets me to re-think the way I do things"), high performance expectations (4 items; e.g., "Always expects us to do our best"), contingent reward (4 items; e.g., "Gives us praise when we do good work"), fostering acceptance of group goals and promoting teamwork (3 items; e.g., "Gets the team to work together for the same goal"), and appropriate role modelling (4 items; e.g., "Leads by example"). The DTLI has demonstrated factorial and discriminant validity as well as acceptable reliability, with Cronbach alpha coefficients greater than .64 (Arthur, Woodman, Ong, Hardy, & Ntoumanis, 2011).

Cohesion. To measure perceptions of team cohesion, the Group Environment Questionnaire (GEQ; Carron, Widmeyer, & Brawley, see Appendix D) was administered. The GEQ is an 18-item self-report questionnaire that measures four dimensions 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 GEQ asks participants to rate items regarding these four dimensions on a 9-point Likert scale ranging from 1 (*Strongly disagree*) to 9 (*Strongly agree*). GI-T contains five items with an example item being, "Our team is united in trying to reach its goals for performance". The GI-S subscale contains four items and an example item being, "Members of our team do not stick together outside of practices and games". ATG-T is comprised of four items with an example being, "I do not like the style of play on this team". The ATG-S subscale is comprised of five items and an example would be, "Some of my best friends are on this team". To improve

the internal consistency of the four dimensions of the GEQ, Eys, Carron, Bray, and Brawley (2007) found higher internal consistency values when all 18 items were positively worded compared to the original version where 12 of the 18 items were negatively worded. They found that the positively worded dimensions produced the following internal consistency values: α = .74 (ATG-S), α = .86 (GI-S), α = .84 (GI-T), and α = .83 (ATG-T).

Athlete satisfaction. The Athlete Satisfaction Questionnaire (ASQ; Riemer & Chelladurai, 1998, see Appendix E) was used to assess athlete satisfaction. The ASQ is a 56-item inventory that measures 15 dimensions of the athletic experience. The 15 dimensions include *individual performance* (3 items; e.g., "The improvement in my performance over the previous season"), *team performance* (3 items; e.g., "The team's win/loss record this season"), *ability utilization* (5 items; e.g., "The amount of time I play during competitions"), *strategy* (6 items; e.g., "The tactics used during games"), *personal treatment* (5 items; e.g., "The friendliness of my athlete leader towards me"), *training and instruction* (3 items; e.g., "The instruction I have received from my athlete leader this season"), *task contribution* (3 items; e.g., "The extent to which teammates provide me with instruction"), *social contribution* (3 items; e.g., "My social status on the team"), *ethics* (3 items; e.g., "My teammates' 'sportsmanlike' behavior"), *team integration* (4 items; e.g., "Team member's dedication to work together toward team goals"), *personal dedication* (4 items; e.g., "My dedication during practices"), *budget* (3 items; e.g., "the funding provided to my team"), *medical personnel* (4 items; e.g., "The competence of the medical personnel"), *academic support services* (3 items; e.g., "The tutoring I receive"), and *external agents* (4 items; e.g., "The supportiveness of the fans"). Items are scored on a 7-point Likert scale ranging from 1 (*Not at all satisfied*) to 7 (*Extremely satisfied*), including a median anchor at 4 (*Moderately satisfied*).

Dimensions such as academic support, budget, external agents, and medical personnel are important to consider when examining an athlete's overall satisfaction, however, for the present study these dimensions were not assessed as they were deemed not relevant (Hoffmann & Loughead, 2016). Riemer and Chelladurai (1998) conducted a confirmatory factor analysis to assess the validity of the ASQ. The results showed evidence of a reasonably good fitting model, $\chi 2/df$ (217) = 1.9, TLI = .93, BFI = .94, and RMSEA = .045, 90% CI [.043, .048]. The findings also provided internal consistencies, in the form of Cronbach's alpha values, for all subscales ranging from $\alpha = .78$ (personal dedication) to $\alpha = .95$ (team performance).

Procedure

Following clearance from the University of Windsor Research Ethics Board, nine coaches from intercollegiate varsity teams were contacted via email (see Appendix F) that were publicly available on their team's website to request permission to survey their athletes. All nine coaches replied back indicating their willingness to allow their athletes to participate in the study. Due to the Covid-19 pandemic, two methods of data collection were employed by the primary researcher. Prior to the Covid-19 pandemic, the method of data collection was a face-to-face meeting where athletes completed a pen/paper questionnaire package. The primary researcher and the coach decided on a convenient time and location (usually prior to or after a practice) to recruit the athletes (see Appendix G). While meeting with the athletes, the primary researcher administered the questionnaires in separate unmarked envelopes that also included a letter of information (see Appendix H). The athletes competed the questionnaires and placed them back into the envelope to ensure anonymity. The return of the envelope signified consent to participate in the study. A total of 31 athletes returned the questionnaires in an unmarked envelope. The questionnaire package took approximately 20-25 minutes to complete.

The second method of data collection was an online survey using Qualtrics. Once the university moved to an online model and restricted face-to-face data collection due to the COVID-19 pandemic, this option was used to provide athletes with the chance to participate without risking their health. After communicating with the coaches (N = 9), they agreed to email their athletes with a link to the survey. Consent was obtained by the participants selecting the option to consent to the study. A total of 49 athletes accessed the online survey with 28 participants completing the online survey. All participants were given the opportunity to win one of 11 $10 gift cards to a coffee shop as an incentive to participate in the study.

Data Analysis

For the current study, there were two purposes. The primary purpose of the study was to examine if the perceptions of the frequency and effectiveness of athlete leadership behaviours differ. To examine this purpose a single group repeated measure multivariate analysis of variance (MANOVA) was conducted. The 12 dimensions of athlete leadership behaviours served as the dependent variable, whereas the response format served as the independent variable operationalized along two levels: (a) frequency of the leadership behaviour and (b) effectiveness of the leadership behaviour. Due to the omnibus nature of the MANOVA, univariate one-way ANOVAs were to be used to determine which dependent variable contributes to the statistically significant MANOVA if variances were found to significantly differ. MANOVA was chosen as the statistical analysis as it performs well when dependent variables are moderately correlated (Tabachnick & Fidell, 2012).

The second purpose was to examine whether the two response formats of athlete leadership behaviour were able to predict the two outcome variables (team cohesion and athlete satisfaction). To examine this purpose, multiple linear regressions were conducted. The primary

goal of multiple linear regressions is to examine the relationship between dependent variables and several independent variables (Tabachnick & Fidell, 2012). The dependent variables were cohesion and athlete satisfaction. The 12 athlete leadership behaviours served as the independent variables, each with two levels: (a) frequency of the leadership behaviour and (b) effectiveness of the leadership behaviour. Given that the sample size was modest to conduct the regression analyses (Pituch & Stevens, 2016), the decision was made to reduce the number of predictor variables and in particular for the outcome of athlete satisfaction. That is, for reasons of parsimony, the 11 athlete satisfaction dimensions were reduced down to two dimensions (task and social athlete satisfaction). The decision to reduce athlete satisfaction into a task and a social dimension was based on Chelladurai and Riemer's (1997) development of the ASQ. Chelladurai and Riemer noted that the dimensions of athlete satisfaction could be categorized into task and social dimensions. Of the 11 dimensions assessed, eight of them are considered task-related: *individual performance, team performance, ability utilization, strategy, training and instruction, task contribution, team integration,* and *personal dedication*. The two dimensions considered socially-oriented are: *personal treatment*, and *social contribution*. The ethics dimension was omitted due to the lack of fit relating to these two classifications.

Results

Descriptive Statistics

Table 1 contains the means, standard deviations, and Cronbach's alpha values for the athlete leadership behaviours. Overall, the means in Table 1 suggest that all participants perceived their athlete leaders providing medium to high frequencies of leadership behaviours except for autocratic behaviours (means ranged from 3.41 to 4.32 on a 5-point Likert scale). Similarly, the effectiveness means of the athlete leadership behaviours suggest that all

behaviours exhibited by athlete leaders, except for autocratic behaviour, are moderately effective (means ranged from 3.43 to 4.16 on a 5-point Likert scale). Table 1 also elaborates on the number of participants that completed each measure. Pairwise deletions were conducted resulting in varying sample sizes used for each analysis. This method was selected because pairwise deletion uses as much data as possible for cases having incomplete data (Pituch & Stevens, 2016).

Table 2 displays the means, standard deviations, and Cronbach's alpha values for cohesion and athlete satisfaction. Overall, the means in Table 2 suggest that participants generally viewed their team as cohesive in all four components of cohesion (means ranged from 7.03 to 7.98, on a 9-point Likert scale). Athletes generally perceived themselves to be satisfied with all dimensions of their athletic experience, with exception of team performance (means ranged from 5.09 to 5.96, on a 7-point Likert scale).

Table 3 includes the bivariate correlations between the frequency and effectiveness of athlete leadership behaviours. Most of the correlations were positive and significant ($p < .05$) with the exception of the autocratic behaviour dimension of the LSS. The intercorrelations were not significant were between the frequency of the autocratic behaviour and all behaviour dimensions except for the frequency of training and instruction ($p < .05$) and the effectiveness of autocratic behaviour ($p < .01$). Additionally, the intercorrelations were not significant between the effectiveness of autocratic behaviour and the frequency of inspirational motivation ($p = .15$), fostering acceptance of group goals and promoting teamwork ($p = .41$), social support ($p = .12$), positive feedback ($p = .09$), the effectiveness of individual consideration ($p = .11$), inspirational motivation ($p = .59$), intellectual stimulation ($p = .12$), fostering acceptance of group goals and promoting teamwork ($p = .12$), high performance expectations ($p = .23$), and social support ($p =$

.09). Finally, the intercorrelation between the effectiveness of social support and the frequency of inspirational motivation was not significant (p = .14). Table 4 and Table 5 includes the bivariate correlations between the frequency and effectiveness of athlete leadership behaviours, cohesion, and athlete satisfaction.

Main Analysis

In order to examine the study's first purpose, a MANOVA was conducted. All assumptions for a MANOVA were tested and met except for the assumption of sphericity. Therefore, the values that were interpreted are computed using the Greenhouse-Geisser correction (Tabachnick & Fidell, 2012). The overall single group repeated measures MANOVA revealed a significant multivariate effect for response format, Pillai's trace = .139, $F(1,11)$ = 9.38, $p < .01$, $\eta^2 = .14$, indicating that athlete leaders' leadership significantly differed based on the perceptions of frequency and effectiveness. The within-subject effect of response format on leadership behaviour yielded a significant difference, $F(1,58) = 3.43$, $p < .01$, $\eta^2 = .14$. Post hoc univariate analyses of variance (ANOVA) were conducted to determine which specific athlete leadership behaviour dimensions differed with regard to each response format. The frequency of athlete leadership behaviours were greater for fostering acceptance of group goals and promoting teamwork, $F(1,144) = 4.03$, $p < .05$, $\eta^2 = .03$; and high performance expectations, $F(1,144)$ = 7.09, $p = .01$, $\eta^2 = .05$, compared to the effectiveness of athlete leadership behaviours. No significant differences were found between the frequency and effectiveness of athlete leadership behaviour dimensions of individual consideration (p = .33), inspirational motivation (p = .26), intellectual stimulation (p = .31), appropriate role modelling (p = .43), contingent reward (p = .44), democratic behaviour (p = .86), autocratic behaviour (p = .48), social support (p = .95), and positive feedback (p = .54).

In order to investigate the second purpose, multiple linear regressions were conducted to examine whether the two response formats of athlete leadership behaviour were able to predict the two outcome variables (team cohesion and athlete satisfaction). Specifically, multiple regressions were carried out to investigate whether the frequency of athlete leadership behaviours significantly predicted the four dimensions of cohesion and the two dimensions of athlete satisfaction. The results of the regression indicated that the frequency of athlete leadership behaviours significantly predicted the cohesion dimension of ATG-S. The frequency model explained 35.9% of the variance in ATG-S. The frequency model was a significant predictor of ATG-S, $F(12,47) = 2.19$, $p = .03$. In particular, the regression coefficients of the athlete leadership behaviours of intellectual stimulation ($\beta = .48$, $p = .04$) and appropriated role modelling ($\beta = -.50$, $p = .01$) indicated a significant contribution to the relationship between athlete leadership behaviours and ATG-S (see Table 6 for a summary of the regression coefficients for all variables).

Multiple regressions were also carried out to investigate whether the effectiveness of athlete leadership behaviours significantly predicted the four dimensions of cohesion and the two dimensions of athlete satisfaction. The results of the regressions indicated that the effectiveness of athlete leadership behaviours significantly predicted both dimensions of task cohesion, along with the task and social dimensions of athlete satisfaction. The effectiveness of leadership behaviours explained 34.5% of the variance in ATG-T, 60% of the variance in GI-T, 24.2% of the variance in task athlete satisfaction, and 31.5% of the variance in social athlete satisfaction. Effectiveness of athlete leadership behaviour was found to be significant predictor of ATG-T, $F(12,46) = 2.02$, $p = .04$, in which inspirational motivation ($\beta = .63$, $p < .01$) significantly contributed to the ATG-T model. Effectiveness of athlete leadership behaviour was found to be

significant predictor of GI-T, $F(12,46) = 8.24$, $p < .01$, in which individual consideration ($\beta = .42$, $p < .01$), inspirational motivation ($\beta = .34$, $p < .05$), intellectual stimulation ($\beta = -.73$, $p < .01$), high performance expectations ($\beta = .46$, $p < .01$), training and instruction ($\beta = .64$, $p < .01$), and positive feedback ($\beta = -.34$, $p < .01$) all significantly contributed to the GI-T model. Effectiveness of athlete leadership behaviour was found to be significant predictor of task athlete satisfaction, $F(12,46) = 2.54$, $p = .01$, with intellectual stimulation ($\beta = .50$, $p < .05$) being the only significant contributor to task athlete satisfaction. Finally, the effectiveness of athlete leadership behaviour was found to be significant predictor of the social athlete satisfaction, $F(12,46) = 3.23$, $p < .01$, with intellectual stimulation ($\beta = .50$, $p < .05$) as the only significant contributor.

Discussion

The aim of the current study was twofold. The first purpose of the current study was to examine whether athletes perceive a difference between the *frequency* and the *effectiveness* of athlete leadership behaviours. It was hypothesized that the effectiveness version of athlete leadership behaviours would be greater than the frequency. From the 12 athlete leadership behaviours, the findings regarding the first purpose indicated that athletes predominately perceived no difference between the *frequency* and the *effectiveness* of leadership behaviours with the exception of fostering acceptance of group goals and promoting teamwork and high performance expectations. The second purpose of this study was to examine the relationships between the *frequency* and the *effectiveness* of athlete leadership behaviours and the outcomes of cohesion and athlete satisfaction. It was hypothesized that the effectiveness of task-oriented leadership behaviours would predict the task dimensions of team cohesion and athlete satisfaction, while the effectiveness of social-oriented leadership behaviours would predict the

social dimensions of team cohesion and athlete satisfaction to a greater extent than frequency. The results regarding the second purpose revealed that the *frequency* of two athlete leadership behaviours predicted one dimension of social cohesion (i.e., ATGS), while six of the *effectiveness* athlete leadership behaviours predicted the cohesion dimension of GI-T, one *effectiveness* (i.e., inspirational motivation) predicted the cohesion dimension of ATG-T, and one *effectiveness* (i.e., intellectual stimulation) predicted both task and social athlete satisfaction.

In terms of the study's first purpose and why there were no differences, for the most part, between the *frequency* and the *effectiveness* of athlete leadership behaviours, several possible factors could have contributed to this result. The participants in the study were not provided with a definition of leadership frequency or effectiveness. Neither definition was provided in order to minimize any priming effect or response bias and allow them to answer without influence from the investigator (Litwak, 1956). Without definitions being provided, participants' interpretation of the seemingly unambiguous questions can differ from one another, affecting accuracy and variation of subscale estimates (Peytchev, Conrad, Couper, & Tourangeau, 2010; Schober, Conrad, & Fricker, 2004). Athletes may have felt embarrassed to inform the primary researcher that they did not know the meaning of *effectiveness or frequency* which may have led to them answering questions in a way that they believed to be socially desirable, or that differ from their actual attitudes or perceptions (Larson, 2019; Peytchev et al., 2010).

Another explanation for the inability to perceive a difference between effectiveness and frequency may relate to the rating scale. In the current study, participants were asked to rate the leadership behaviours for both frequency and effectiveness on a 5 point-Likert scale ranging from 1 to 5. To answer the leadership behaviour items, participants must draw on the numeric values presented to them to form a judgment (Schwarz, 1999). However, the numeric values can

impact this judgment. For instance, Schwarz, Knauper, Hippler, Noelle-Neumann, and Clark (1991) asked participants “How successful would you say you have been in life?” with rating scales ranging from “not at all successful” to “extremely successful”. Participants received either a rating scale from 0 to 10 or -5 to 5. The results indicated a significant difference between these two types of rating scales. For instance, 34% of respondents answered this question with a value between -5 and 0 on the -5 to 5 scale, while only 13% responded with an equivalent value of 0 and 5 on the 0-10 scale. As Schwarz (1999) noted rating scales assist respondents in basing the meaning of the questions posed to them. It could be the case in the current study that the rating scale impacted how participants judged both the frequency and effectiveness of the leadership behaviours

The current study is novel within the sport psychology domain examining whether there are differences in the frequency and effectiveness of athlete leadership behaviours. These initial findings align with findings from other disciplines within sport psychology such as imagery. One of the most widely used inventories to measure imagery use is the Sport Imagery Questionnaire (SIQ; Hall, Mack, Paivio, & Hausenblaus, 1998). The SIQ is similar to athlete leadership inventories (i.e., DTIL, LSS) in that they are multidimensional with the SIQ measuring five different types of imagery functions. Akin to the DTLI and LSS, the SIQ also assesses how often these five types of imagery functions are used by athletes. However, Weinberg et al. (2003) suggested that it was important to determine whether athletes perceived any differences between frequency and effectiveness of these five imagery functions. The authors reasoned that if imagery was used frequently by an athlete then it would stand to reason that they would also view it as effective. If this type of result was found, it would substantiate the claim that the frequency of imagery would be incorporating how effective imagery is to the athlete. The

researchers found athletes did not differentiate between the frequency and effectiveness response formats for imagery, and the two response formats did not differentiate on outcomes (e.g., Ross-Stewart & Short, 2009; Weinberg et al., 2003). It is evident that athlete leadership behaviours are viewed similarly to that of imagery in that there were predominately no difference between frequency and effectiveness response formats.

It should be noted that there is one important difference when measuring imagery and athlete leadership behaviours. Sackett, Berry, Wiemann, and Laczo (2006) reasoned that group-level constructs (e.g., leadership) may be more easily judgeable from an external perspective than internal constructs (e.g., imagery). In the latter, athletes self-rate themselves whereas in the former athletes are typically asked to rate their athlete leaders. The researchers speculated that there may be differences when individuals are asked to rate themselves or others. which may explain the nuances in the findings that differ from imagery. In the current study, athletes were unable to perceive a difference between most of the frequency and effectiveness of athlete leadership behaviours; however, there were two leadership behaviours that athletes perceived to be different. In particular, athletes perceived fostering acceptance of group goals and promoting teamwork and high performance expectations to be used more often than effective. This perceived difference may be a result of athletes' knowledge of the season's results. The questionnaires were administered after all teams had completed their respective seasons, in which all teams had perhaps less than successful seasons (i.e., did not make post-season or eliminated first round of the post-season). Callow et al. (2009) suggest that the fostering acceptance of group goals and promoting teamwork and high performance expectations (using a frequency rating scale) are the only two leadership dimensions to explain the variance in task cohesion in low performing teams. Therefore, athlete leaders on less successful teams may have

performed these leadership behaviours sub-optimally leading to a reduction in performance. Further, athletes may have been more critical of their athlete leaders' attempt to appropriately achieve the goals and expectations since the teams most likely did not reach their task goals given the unsuccessful seasons (Wagstaff, Martin, & Thelwell, 2017). Thus, athletes may have rated these leadership behaviours higher in terms of frequency but since these leadership behaviours did not help them achieve their goals, they were perceived as less effective.

The results regarding the second purpose partially supported the hypothesis that the effectiveness ratings were a stronger predictor of the outcomes (cohesion and athlete satisfaction) than the frequency scale ratings. In particular, the results only partially supported the hypotheses that 1) the effectiveness of social-oriented leadership behaviour would predict all social-oriented dimensions of team cohesion and athlete satisfaction, and 2) the effectiveness of task-oriented leadership behaviour would predict all task-oriented dimensions of team cohesion and athlete satisfaction to a greater extent than frequency. In terms of the number of significant relationships the findings suggest that the effectiveness of athlete leadership behaviours had more predictive abilities than the frequency rating scale. Specifically, the effectiveness of athlete leadership behaviours was able to predict four out of the six dependent variables (i.e., team cohesion and athlete satisfaction dimensions) compared to the frequency rating scale that predicted one of the six dependent variables. It is interesting to note that the task dimensions of cohesion and athlete satisfaction were significantly predicted by various athlete leadership behaviours from the effectiveness rating scale. That is, task-related outcomes were related to several leadership behaviours when athlete leaders were perceived to perform them effectively. This finding may be explained by the definition of athlete leadership, which posits an influence of team members towards a common objective (Loughead et al., 2006). Given the sample in the current study was

varsity athletes, a group of elite level athletes, it may come as no surprise that the outcomes predicted by the leadership behaviours would be predominately task-oriented. Therefore, athletes may perceive the leadership behaviours used to produce task outcomes as more effective than those used to produce social-related outcomes.

The findings also revealed that the frequency rating scale for appropriate role modeling and the effectiveness rating scale for intellectual stimulation and positive feedback negatively predicted cohesion. Hardy, Eys, and Carron (2005) showed that there are disadvantages of being on teams with high cohesion. The negative relationship between the frequency of appropriate role modelling and ATG-S could be explained by athlete leaders' frequent attempts to lead by example. Athletes becoming tired of one another's company may be a natural reaction to the athlete leaders frequently performing appropriate role modelling behaviours throughout the entirety of a season (Hardy et al., 2005). The more time athlete leaders spend leading by example the less individual members feel attracted to the social dimensions of the team. A decrease in social relationships can be a consequence of the leadership behaviours athlete leaders use to foster an environment which is strongly unified in pursuit of the team's task goals and objectives (Hardy et al., 2005).

Perhaps the high task cohesion perceived within the teams may be an explanation for the negative regression coefficients of the relationship between athlete leadership effectiveness and GI-T. When an athlete leader gives positive feedback and intellectually stimulates team members frequently, they may communicate too much which is sometimes taken the wrong way and becomes too routine (Hardy et al., 2005). Other leaders may only give positive feedback effectively to team members within their own clique, the athlete leader may appear to be a debilitative influence on the team, particularly after poor performances (i.e., less than successful

season; Wagstaff et al., 2017). Therefore, when positive feedback is performed with a higher degree of effectiveness to their teammates, the less task cohesive the rest of the team appears to be. This may result in team members disassociating from team goals as a form of boredom or resentment towards the athlete for providing redundant and possibly disingenuous feedback.

The negative relationship between intellectual stimulation and GI-T may be inherent in the definition of this leadership behaviour, which is viewed as approaching routine situations in creative ways and encouraging innovation (Bass, 1996). Athlete leaders that perform this behaviour effectively encourage team members to have unique processes to attain team goals, thereby allowing team members to deviate from following the same process as the rest of the team. The nonconformity of team members results in reducing the team's unity toward the same goal (Hardy et al., 2005). In the current study, intellectual stimulation was not performed often, nor with a high degree of effectiveness, therefore, the team's GI-T was relatively high.

Athletes' perceptions of intellectual stimulation effectiveness positively predicted both task and social dimensions of athlete satisfaction. Perhaps athlete leaders used intellectual stimulation to allow team member to work through intra-team conflict on their own or developing moral reasoning, which in turn would promote a positive social athletic experience (Newland, Newton, Podlog, Legg, & Tanner, 2015). Further, by encouraging athletes to re-think how their tasks could accomplished (i.e., using new or different skills to complete a task), athlete leaders may elicit newfound enjoyment in team members, during an unsuccessful season, via their pursuit of mastery goals (Deci & Ryan, 2000). This intrinsic drive to obtain new skills may have led to a sense of competence, in turn, leading to increased well-being and satisfaction (Deci & Ryan, 2000).

In the present study, no significant relationships were found between the frequency of athlete leadership behaviours and task cohesion. These findings contradict previous results that suggest leadership behaviours from both the LSS and DTLI positively predict task cohesion (e.g., Callow et al., 2009; Paradis & Loughead, 2012; Vincer & Loughead, 2010). Past research focusing on athlete leadership behaviour have only asked participants to rate the frequency (e.g., Callow et al., 2009; Crozier et al., 2017). In contrast, the current study is one of the first to have participants rate both the frequency and effectiveness of leadership behaviours. This may have influenced participants' memory in arriving at an answer which may have impacted subsequent judgments. That is, participants had to judge the leadership behaviour items for both the frequency and effectiveness which may have induced an estimation strategy (Schwarz, 1999). As a result, participants were forced to recall the leadership behaviour items into subparts (frequency and effectiveness), which may have influenced how participants interpreted them. In turn, this may have impacted the results in relation to cohesion.

The results of the current study have important implications for the study of athlete leadership. To date, the majority of research measuring athlete leadership behaviours has focused on the frequency rather than the effectiveness. Despite finding that there was, for the most part, no difference between ratings of frequency and effectiveness, much research is still required in learning about these two types of rating scales. Frequency ratings require participants to recall and calculate how often each leadership behaviour occurred (Schwarz & Oyserman, 2001). Whereas effectiveness ratings ask participants whether the behaviour was perceived as helpful in producing the desired outcome (Boardley et al., 2008; Weinberg et al., 2003). Consequently, researchers interested in athlete leadership should be cognizant of the nature of their research question. For instance, if a researcher is interested in knowing how often a leadership behaviour

occurred than it would be best to use a frequency rating scale. However, if a researcher is interested in the effectiveness, then an effectiveness scale is more appropriate. Theoretically, the selection of a rating scale has important consequences. For instance, if a researcher is studying the effectiveness of leadership behaviours, a single salient act may lead to strong agreement because the respondent is certain that the person has engaged in the leadership behaviour effectively even if it occurred on just one occasion. While, if the respondent was answering the question about the frequency, the individual would rate the leadership as low if it occurred only on one occasion.

The present study provides valuable insight for practitioners facilitating athlete leadership development programs. The findings suggest athlete leadership behaviours performed frequently and effectively are beneficial to desirable team and individual outcomes (i.e., team cohesion and athlete satisfaction). Practitioners should focus on education and training the entire team to be aware of what constitutes effective athlete leader behaviours are and how to perform them frequently with a high degree of effectiveness. As a caveat, athlete leaders need training on how to perform certain behaviours (i.e., fostering acceptance of group goals and promoting teamwork and high performance expectations) effectively without overusing them. Overall, athlete leadership behaviours should be taught to be performed with the intent to obtain a desired outcome and not to be performed for the sake of just performing them.

Although the findings of the current study contribute to the advancement of the athlete leadership literature, a few limitations should be noted. First, design limitations need to be taken into consideration. Due to COVID-19, data collection occurred using two methods: in-person pen/paper questionnaires and online surveys. Prior to the COVID-19 pandemic, the method of data collection was going to exclusively be a face-to-face meeting where athletes completed a

pen/paper questionnaire package. Due to the COVID-19 pandemic, the university moved to an online model and restricted face-to-face data collection. In order to continue with the current study, the data collection was forced to be administered via an online survey using Qualtrics. Using an online survey may lead to systematic bias because there is a tendency of some athletes to respond to an invitation to participate in an online study, while others ignore it (Wright, 2005). Athletes who needed a forum to voice their appreciation or critical opinion of their athlete leaders may have been more willing to participate in the study. Another limitation was the cross-sectional design of the study in which the data collection took place after the teams' seasons were completed. Given that the season had been completed, athletes may have been critical when reviewing their athlete leaders' behaviour after perceiving the outcomes of the season (e.g., win-loss record, cohesion, and satisafction). Further, without providing athletes with an operationalized definition of effectiveness, perhaps the athletes' preconceptions of effectiveness limited its ability to distinguish between frequency and effectiveness of leadership behaviours. Finally, the sample size of the present study proved to be a limiting factor. For the first purpose of the current study the ideal sample size would be 110 participants, whereas for the second purpose the ideal same size would be 178 participants (Faul, Erdfelder, Lang, & Buchner, 2007). These results of the current study should be interpreted with caution given the lack of power in the data analysis.

Future research on athlete leadership behaviours should be conducted using qualitative methods. Researchers could perform individual interviews or focus groups with athletes to further examine if there even is a perceived difference between the frequency and effectiveness of athlete leadership behaviours and if so why they perceive this difference. Furthermore, the findings presented in this thesis are correlational in nature and as a result we cannot infer

causation. Researchers could conduct an experimental design study which comprises of a group of athletes who are taught how to effectively perform leadership behaviours and another group of athletes who do not receive the training. Future researchers should also explore the possible benefits of a new athlete leadership inventory that investigates effectiveness of athlete leadership behaviours. The current athlete leadership behaviour inventories may not fully capture the broad range of leadership behaviours that make athlete leaders effective (Vincer & Loughead, 2010). Finally, it is hoped that the current study provides a foundation for athlete leadership scholars to critically review and encourage them to continue examining athlete leadership effectiveness.

References

Arthur, C., Woodman, T., Ong, C., Hardy, L., & Ntoumanis, N. (2011). The role of athlete narcissism in moderating the relationship between coaches' transformational leader behaviors and athlete motivation. *Journal of Sport and Exercise Psychology*, 33, 3-19.

Bass, B. M. (1996). Is there universality in the full range model of leadership? *International Journal of Public Administration, 19*, 731-761.

Boardley, I. D., & Kavussanu, M. (2009). The influence of social variables and moral disengagement on prosocial and antisocial behaviours in field hockey and netball. *Journal of Sports Sciences, 27*, 843-854.

Bucci, J., Bloom, G. A., Loughead, T. M., & Caron, J. G. (2012). Ice hockey coaches' perceptions of athlete leadership. *Journal of Applied Sport Psychology*, *24*, 243-259.

Callow, N., Smith, M. J., Hardy, L., Arthur, C. A., & Hardy, J. (2009). Measurement of transformational leadership and its relationship with team cohesion and performance level. *Journal of Applied Sport Psychology, 21*, 395-412.

Carron, A. V., Brawley, L. R., & Widmeyer, W. N. (1998). The measurement of cohesiveness in sport groups. In J.L. Duda (Ed.), *Advances in sport and exercise psychology measurement* (pp. 213-226). Morgantown, WV: Fitness Information Technology.

Carron, A. V., Colman, M. M., Wheeler, J., & Stevens, D. (2002). Cohesion and performance in sport: A meta analysis. *Journal of Sport and Exercise Psychology, 24*, 168-188.

Carron, A. V., Widmeyer, W. N., & Brawley, L. R. (1985). The development of an instrument to assess cohesion in sport teams: The Group Environment Questionnaire. *Journal of Sport and Exercise Psychology, 7*, 244-266.

Chelladurai, P. (2007). Leadership in sports. In Tenenbaum, G., & Eklund, R. C. (Eds.), *Handbook of sport psychology* (pp.113-135). Hoboken, NJ: John Wiley & Sons, Inc.

Chelladurai, P., & Riemer, H. A. (1997). A classification of facets of athlete satisfaction. *Journal of Sport Management, 11*, 133-159.

Chelladurai, P., & Saleh, S. D. (1980). Dimensions of leader behavior in sports: Development of a leadership scale. *Journal of Sport Psychology, 2*, 34-45.

Crozier, A. J., Loughead, T. M., & Munroe-Chandler, K. J. (2013). Examining the benefits of athlete leaders in sport. *Journal of Sport Behavior*, *36*, 346-364.

Crozier, A. J., Loughead, T. M., & Munroe-Chandler, K. J. (2017). Top-down or shared leadership? Examining differences in athlete leadership behaviours based on leadership status in sport. *Physical Culture: Journal of Sport Sciences & Physical Education*, *71*, 86-98.

Cruickshank, A., & Collins, D. (2016). Advancing leadership in sport: Time to take off the blinkers? *Sports Medicine, 46*, 1199-1204.

Dalal, R. S. (2005). A meta-analysis of the relationship between organizational citizenship behavior and counterproductive work behavior. *Journal of Applied Psychology*, *90*, 1241-1255.

Duguay, A. M., Loughead, T. M., & Munroe-Chandler, K. J. (2018). Investigating the importance of athlete leadership behaviors and the impact of leader tenure. *Journal of Sport Behavior, 41*, 129-147.

Eys, M. A., Carron, A. V., Bray, S. R., & Brawley, L. R. (2007). Item wording and internal consistency of a measure of cohesion: The Group Environment Questionnaire. *Journal of Sport and Exercise Psychology*, *29*, 395-402.

Eys, M. A., Loughead, T. M., & Hardy, J. (2007). Athlete leadership dispersion and satisfaction in interactive sport teams. *Psychology of Sport and Exercise, 8,* 281-296.

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39,* 175-191.

Fraser-Thomas, J., Côté, J., & Deakin, J. (2008). Understanding dropout and prolonged engagement in adolescent competitive sport. *Psychology of Sport and Exercise, 9,* 645-662.

Finch, H. (2005). Comparison of the performance of nonparametric and parametric MANOVA test statistics when assumptions are violated. *Methodology, 1,* 27-38.

Hall, C. R., Mack, D. E., Paivio, A., & Hausenblas, H. A. (1998). Imagery use by athletes: Development of the Sport Imagery Questionnaire. *International Journal of Sport Psychology, 29,* 73-89.

Hardy, L., Arthur, C. A., Jones, G., Shariff, A., Munnoch, K., Isaacs, I., & Allsopp, A. J. (2010). The relationship between transformational leadership behaviors, psychological, and training outcomes in elite military recruits. *The Leadership Quarterly, 21,* 20-32.

Hardy, J., Eys, M. A., & Carron, A. V. (2005). Exploring the potential disadvantages of high cohesion in sports teams. *Small Group Research, 36,* 166-187.

Hoffmann, M. D., & Loughead, T. M. (2016). A comparison of well-peer mentored and non-peer mentored athletes' perceptions of satisfaction. *Journal of Sports Sciences, 34,* 450-458.

Horn, T.S. (2002). Coaching effectiveness in the sports domain. In T.S. Horn (Ed.), *Advances in sport psychology* (pp. 309–354). Champaign, IL: Human Kinetics.

IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp.

Jowett, S., & Chaundy, V. (2004). An investigation into the impact of coach leadership and coach-athlete relationship on group cohesion. *Group Dynamics: Theory, Research, and Practice, 8,* 302-311.

Larson, R. B. (2019). Controlling social desirability bias. *International Journal of Market Research, 61,* 534-547.

Litwak, E. (1956). A classification of biased questions. *American Journal of Sociology,* 62, 182-186.

Loughead, T. M. (2017). Athlete leadership: A review of the theoretical, measurement, and empirical literature. *Current Opinion in Psychology, 16,* 58-61.

Loughead, T. M., & Hardy, J. (2005). An examination of coach and peer leader behaviors in sport. *Psychology of Sport and Exercise, 6,* 303-312.

Loughead, T. M., Hardy, J., & Eys, M. A. (2006). The nature of athlete leadership. *Journal of Sport Behavior, 29,* 142-158.

Nakamura, C. Y., & Finck, D. N. (1980). Relative effectiveness of social oriented and task-oriented children and predictability of their behaviors. *Monographs of the Society for Research in Child Development, 45* (3-4, Serial No. 185).

Newland, A., Newton, M., Podlog, L., Legg, W. E., & Tanner, P. (2015). Exploring the nature of transformational leadership in sports: A phenomenological examination with female athletes. *Qualitative Research in Sport, Exercise and Health, 7,* 663-687.

Nordin, S. M., & Cumming, J. (2008). Types and functions of athletes' imagery: Testing predictions from the applied model of imagery use by examining effectiveness. *International Journal of Sport and Exercise Psychology, 6,* 189-206.

Norman, G. R., & Streiner, D. L. (2003). *PDQ Statistics* (Vol. 1). PMPH-USA.

Paradis, K. F., & Loughead, T. M. (2012). Examining the mediating role of cohesion between athlete leadership and athlete satisfaction in youth sport. *International Journal of Sport Psychology, 43,* 117-136.

Peytchev, A., Conrad, F. G., Couper, M. P., & Tourangeau, R. (2010). Increasing respondents' use of definitions in web surveys. *Journal of Official Statistics, 26,* 633-650.

Pierce, J. R., & Aguinis, H. (2013). The too-much-of-a-good-thing effect in management. *Journal of Management, 39,* 313-338.

Pituch, K. A., & Stevens, J. (2016). *Applied multivariate statistics for the social sciences: Analyses with SAS and IBMs SPSS.* New York, NY: Routledge.

Price, M. S., & Weiss, M. R. (2013). Relationships among coach leadership, peer leadership, and adolescent athletes' psychosocial and team outcomes: A test of transformational leadership theory. *Journal of Applied Sport Psychology, 25,* 265-279.

Riemer, H. A., & Chelladurai, P. (1998). Development of the Athlete Satisfaction Questionnaire (ASQ). *Journal of Sport & Exercise Psychology, 20,* 127-156.

Ross-Stewart, L., & Short, S. E. (2009). The frequency and perceived effectiveness of images used to build, maintain, and regain confidence. *Journal of Applied Sport Psychology, 21,* S34-S47.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55,* 68-78.

Sackett, P. R., Berry, C. M., Wiemann, S. A., & Laczo, R. M. (2006). Citizenship and counterproductive behavior: Clarifying relations between the two domains. *Human Performance, 19*, 441-464.

Schober, M. F., Conrad, F. G., & Fricker, S. S. (2004). Misunderstanding standardized language in research interviews. *Applied Cognitive Psychology, 18*, 169-188.

Schwarz, N. (1999). Self-reports: How the questions shape the answers. *American Psychologist, 54*, 93-105.

Schwarz, N., Knäuper, B., Hippler, H. J., Noelle-Neumann, E., & Clark, L. (1991). Rating scales numeric values may change the meaning of scale labels. *Public Opinion Quarterly*, 55, 570-582.

Schwarz, N., & Oyserman, D. (2001). Asking questions about behavior: Cognition, communication, and questionnaire construction. *The American Journal of Evaluation, 22*, 127-160.

Smoll, F.L., & Smith, R.E. (1989). Leadership behaviors in sport: A theoretical model and research paradigm. *Journal of Applied Social Psychology*, 19, 1522–1551

Spector, P. E., Bauer, J. A., & Fox, S. (2010). Measurement artifacts in the assessment of counterproductive work behavior and organizational citizenship behavior: Do we know what we think we know? *Journal of Applied Psychology, 95*, 781-790.

Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2007). *Using multivariate statistics* (5th). Boston, MA: Pearson.

Vincer, D. J., & Loughead, T. M. (2010). The relationship among athlete leadership behaviors and cohesion in team sports. *The Sport Psychologist, 24*, 448-467.

Wagstaff, C. R., Martin, L. J., & Thelwell, R. C. (2017). Subgroups and cliques in sport: A longitudinal case study of a rugby union team. *Psychology of Sport and Exercise, 30*, 164-172.

Weinberg, R., Butt, J., Knight, B., Burke, K. L., & Jackson, A. (2003). The relationship between the use and effectiveness of imagery: An exploratory investigation. *Journal of Applied Sport Psychology, 15*, 26-40

Wright, K. B. (2005). Researching Internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of Computer-mediated Communication, 10*, JCMC1034.

Yukl, G. (1999). An evaluation of conceptual weaknesses in transformational and charismatic leadership theories. *The Leadership Quarterly, 10*, 285-305.

Zacharatos, A., Barling, J., & Kelloway, E. K. (2000). Development and effects of transformational leadership in adolescents. *The Leadership Quarterly, 11*, 211-226.

LITERATURE REVIEW

Introduction

The purpose of this thesis is twofold. The primary purpose was to investigate if athletes perceive a difference between the frequency of athlete leadership behaviours and the effectiveness of athlete leadership behaviours. The second purpose was to examine the relationship between the frequency and effectiveness of athlete leadership behaviour, cohesion, and athlete satisfaction. Accordingly, the following literature review will encompass three sections: 1) athlete leadership, 2) cohesion, and 3) athlete satisfaction.

Athlete Leadership

The first section of this review of literature will focus on athlete leadership. First, a definition will be presented, followed by a review of the theoretical approaches to study athlete leadership, and an examination of the two inventories primarily used to study this construct. This section will conclude with a review of the main findings related to athlete leadership behaviours.

Definition

Athlete leadership is defined as "an athlete occupying a formal or informal role within a team who influences a group of team members (i.e., a minimum of two team members) to achieve a common goal" (Loughead, Hardy, & Eys, 2006, p. 144). This definition of athlete leadership was developed based on Northouse's (2001) assumptions concerning the four components that are essential to effective leadership. The four components are that leadership is a process (i.e., an interactive practice between leader and follower), involves influence (i.e., impacts the followers the leaders are interacting with), occurs within a group (i.e., happens in the presence of others), and involves goal attainment (i.e., guiding team members towards an objective). When athlete leadership is viewed in this manner, it becomes available to everyone

within a team (Loughead et al., 2006). In other words, athlete leadership can be viewed as a shared process amongst teammates.

The shared nature of athlete leadership is further highlighted in the definition whereby both formal and informal leaders are present. Formal athlete leaders are those who have been appointed by the organization or group, such as the captain or assistant captains. Informal athlete leaders are athletes that emerge in a leadership role as the result of interactions with members of the team. Athlete leadership therefore is not restricted to the formal leaders of the team rather it involves both formal and informal leaders (Crozier, Loughead, & Munroe-Chandler, 2017).

Further, athlete leadership can be classified into four functions. Loughead et al. (2006) noted that athlete leaders can provide *task*, *social*, or *external* functions. Fransen et al. (2015) current the addition of a fourth function, suggesting athlete leaders can provide a *motivational* function as well. A task leader can be viewed as someone who uses their influence towards a performance related outcome, such as assisting with decision making. A social leader can be seen as an individual who is concerned with the team relations by using their influence towards behaviours such as offering support and helping solve interpersonal conflicts. An individual who represents the team at receptions, meetings, and press conferences is regarded as an external leader. Finally, a motivational leader is an athlete who encourages teammates (Fransen et al., 2015).

Theoretical Approaches Used to Study Athlete Leadership

To date, two theoretical approaches have been used to study athlete leadership. The first is Chelladurai's (2007) multidimensional model of leadership (MML; see Figure 1). The MML was developed from four pre-existing leadership theories that included Fielder's (1971) contingency model of leadership effectiveness, House's (1971) path-goal theory of leader

effectiveness, Graen and Cashman's (1975) role-making model of leadership, and Osborn and Hunt's (1975) adaptive-reactive theory. Chelladurai's (2007) reconciliation of these theories yielded an input-throughput-output conceptualization of leadership originally current to explain coaching processes that has since been adapted to the athlete leadership context. This is a linear model composed of antecedent variables (input) that determine the behaviours (throughput) which converge to influence the consequences (output). The antecedent variables include situation characteristics (e.g., sport type), leader characteristics (e.g., tenure on the team), and member characteristics (e.g., personality). The throughput variables are three states of leader behaviour which comprise those required by the situation, behaviours perceived to be exhibited by the leader, and behaviours preferred by the followers. These three leadership behaviour states impact the consequences such as team performance, cohesion, and member satisfaction.

The second theoretical approach used by researchers to examine athlete leadership has been the full-range model of leadership (Bass, 1996; see Figure 2). Bass and colleagues (e.g., Bass & Avolio, 2000; Bass & Riggio, 2006) developed this model which captures a broad range of leadership behaviours that can be classified into three dimensions: transformational, transactional, and laissez-faire leadership. *Transformational leadership* is a process that involves leaders stimulating, motivating, and inspiring followers to achieve outcomes beyond their normal expectations and immediate self-interests (Bass & Riggio, 2006). *Transactional leadership* is a process in which leaders exchange rewards, either materialistic or verbal reinforcement, for the members working towards or completing the task at hand. These transactional behaviours are contingent upon the performance of team members. Finally, *laissez-faire* are behaviours that avoid direct decisions and absence of leadership transaction with the members. According to

Bass (1996) transformational leadership behaviours are the most active and effective, followed by transactional behaviours, and finally laissez-faire behaviours.

Measuring Athlete Leadership Behaviours

In order to measure athlete leadership behaviours, two inventories have been primarily used. First, and in conjunction with the MML (Chelladurai, 2007), Chelladurai and Saleh (1980) developed the 40-item Leadership Scale for Sports (LSS) to measure the frequency of five leadership behaviours. The first version of the LSS was a 99-item inventory that had combined and modified four pre-existing leadership measures that included the Leader Behavior Description Questionnaire (Halpin, 1957), Supervisory Behavior Description Questionnaire (Fleishman, 1957a), Leadership Opinion Questionnaire (Fleishman, 1957b), and Leader Behavior Description Questionnaire-Form XII (Stogdill, 1963). After several phases of development that included removing items, including new items, and revising items, the final result was the advancement of a 40-item measure. The five leadership dimensions defined by Chelladurai and Saleh (1980) are *training and instruction* (13 items), *democratic behaviour* (9 items), *autocratic behaviour* (5 items), *social support* (8 items), and *positive feedback* (5 items). Training and instruction can be viewed as the teaching and instructing behaviours that are involved in skill acquisition, physical training and coordinating activities of the team. Democratic behaviour is the extent to which the leader allows member participation in the decision-making process relating to group goals, tactics, or strategies. Autocratic behaviour is the extent to which the leader stresses their authority over other members by independently making decisions. Social support is considered the extent to which the leader is involved in satisfying the interpersonal needs of team members. The final dimension is positive feedback. This dimension is viewed as the recognition and appreciation of an athlete's performance and contribution to the

team's goals. The LSS is scored on a 5-point Likert scale with response categories of 1 (*Never*), 2 (*Seldom, 25% of the time*), 3 (*Occasionally, 50% of the time*), 4 (*Often, 75% of the time*) and 5 (*Always*). While the LSS was originally developed to measure the frequency of leadership behaviours exhibited by coaches, it has been successfully adapted to assess the frequency of athlete leadership behaviours (Loughead, 2017). Vincer and Loughead (2010) conducted a confirmatory factor analysis for the athlete leader version of the LSS finding reasonably good fit, CFI = .99, TLI = .98, and RMSEA = .05. Their findings also provided acceptable internal consistencies (training and instruction, $\alpha = .88$; positive feedback, $\alpha = .84$; social support, $\alpha = .86$; democratic behavior, $\alpha = .79$, and autocratic behavior, $\alpha = .74$).

The second measurement tool typically used to measure athlete leadership behaviours is the 27-item Differentiated Transformational Leadership Inventory (DTLI; Callow, Smith, Hardy, Arthur, & Hardy, 2009). The DTLI was based on Podsakoff, MacKenzie, Moorman, and Fetter's (1990) Transformational Leadership Inventory (TLI) and Bass and Avolio's (2000) Multifactor Leadership Questionnaire (MLQ-5X). The DTLI assesses seven leadership dimensions including two from the MLQ-5X and five from the TLI. These seven dimensions include of six transformational leadership behaviours and one transactional leadership behaviour. The six transformational leadership dimensions are *inspirational motivation* (MLQ-5X; 4 items), *individual consideration* (MLQ-5X; 4 items), *intellectual stimulation* (TLI; 4 items), *appropriate role modelling* (TLI; 4 items), *fostering acceptance of group goals and promoting teamwork* (TLI; 3 items), and *high performance expectations* (TLI; 4 items). Inspirational motivation is viewed as athlete leaders providing meaning and challenge for their followers. Further, athlete leaders can inspire and motivate by either being enthusiastic or optimistic. Individualized consideration is manifested where athlete leaders demonstrate acceptance of individual

differences, needs, and goals. Individually considerate leaders encourage follower growth and autonomy by actively listening, delegating tasks appropriately, and trusting individual members. Athlete leaders display intellectual stimulation by approaching routine situations in creative ways and encourages innovation from their followers without the presence of punishment or public criticism. Appropriate role modelling is displayed when athlete leaders lead from the front, lead by example, and provide an exemplary standard for which to act. Fostering acceptance of group goals and promoting teamwork can be viewed as athlete leaders' encouraging and developing followers' team spirit and endorsing cooperation among teammates towards a common goal. Finally, high performance expectations refers to when athlete leaders create a competitive atmosphere by expecting the best performance or consistent high quality performances from their teammates. The transactional leadership behaviour measured on the DTLI is *contingent reward* (TLI; 4 items), where an athlete leader provides a materialistic or psychological reward for team members performing well.

Similar to the LSS (Chelladurai & Saleh, 1980), the DTLI measures the frequency of these seven dimensions on a 5-point Likert scale anchored by 1 (*Not at all*), 2 (*Once in a while*), 3 (*Sometimes*), 4 (*Fairly often*), and 5 (*All of the time*). Callow et al. (2009) conducted a confirmatory factor analysis for the athlete leader version of the DTLI finding reasonably good fit, $\chi 2$ (278) = 499.1, RMSEA = .05, SRMR = .06, NNFI = .98 and CFI = .98. Their findings also provided acceptable internal consistencies (individual consideration, α = .66; inspirational motivation, α = .75; intellectual stimulation, α = .82; fostering acceptance of group goals and teamwork, α = .73, high performance expectations, α = .86; appropriate role model, α = .81; contingent reward, α = .82).

Athlete Leadership Research

The research regarding athlete leadership behaviours can be grouped into three categories: 1) the presence of athlete leadership behaviours 2) athlete leadership behaviours in relation to team-level outcomes, and 3) athlete leadership behaviours in relation to individual-level outcomes.

One of the first studies examining athlete leadership behaviours using the LSS (Chelladurai & Saleh, 1980) was conducted by Loughead and Hardy (2005) who were interested in determining whether coaches and athlete leaders differed in their use of leadership behaviours. Athlete leaders exhibited more positive feedback, social support, and democratic behaviours than their coaches, while coaches were perceived to utilize more training and instruction, and autocratic behaviour than athlete leaders. Loughead and Hardy showed that athlete leaders were viewed as engaging in these leadership behaviours. Building on these findings, Duguay, Loughead, and Munroe-Chandler (2018) examined which leadership behaviours athletes viewed as important for their athlete leaders to exhibit. In addition to the LSS, participants also rated the leadership behaviours from the DTLI. Athletes believed it is important for athlete leaders to use 10 of the 12 leadership behaviours from the LSS and DTLI, displaying an average score of at least 3.82 (on a five-point Likert scale) for all behaviours except two. Three behaviours from the LSS athletes perceived to be at least 4 out of 5 on important were positive feedback (4.15), social support (4.44) and democratic behaviour (4.51), which translates to the behaviours perceived by the athletes reported by Loughead and Hardy (2005) quite fittingly. Peer leaders therefore seem to fulfill team functions not provided by the coach, thereby counterbalancing the influence of leadership within the team (Wheelan & Johnston, 1996).

Athlete leaders and coaches displaying different behaviours seems to be a reoccurring theme in several contexts throughout the quantitative and qualitative literature. Smith et al. (2017) interviewed professional cricket players inquiring about their captain and coaches' transformational leadership behaviours, using the DTLI as the framework. For each leadership dimension they found the captains to exhibit transformational behaviours in a different, but complementary manner to the coaches. For example, coaches were shown to display individual consideration more in training sessions and practices while the captains demonstrated these behaviours more during the matches, providing an extension of the coach's influence. Not only were athlete leaders shown to display complementary leadership behaviours to the coach's behaviours, Smith et al. note that athlete leaders use a high degree of complementary behaviours within their own behavioural pattern. Leaders in their study tended to couple high performance expectation and individualized consideration to provide social- and performance-related support to avoid team members being overwhelmed by the pressure. This coupling effect may present a starting point to investigating athlete leadership behaviours using different methods than questioning how often leaders use isolated behaviours. Frequency ratings on isolated behaviours are only part of the dynamic process embedded in complex social system that is leadership (Yukl, 1999). Athlete leadership behaviours are not exhibited in a vacuum, therefore it would be wise to investigate more components than behaviour frequency.

Athletes perceive many team related outcomes with athlete leadership. One of the most investigated consequences of sport leadership behaviours, and more specifically athlete leadership behaviours, is cohesion (Loughead, 2017). In addition, researchers have also examined the association between the frequency of specific coaching leadership behaviours, using the LSS, and team cohesion finding a positive influence on both task and social cohesion

(e.g., Shields, Gardner, Light Bredemeier, & Bostro, 1997; Spink, 1998; Westre & Weiss, 1991). The positive relationship between leadership behaviours and cohesion was also found with athlete leaders. For instance, using the LSS, Vincer and Loughead (2010) investigated athlete leadership's influence on team cohesion using varsity athletes on interdependent teams. On the one hand, athletes who demonstrated training and instruction and social support had the greatest positive influence on team cohesion, created a tight-knit, productive, yet social unit. On the other hand, athletes who demonstrate autocratic behaviours negatively impacted all four dimensions within a team, thereby reducing productivity and developing a sense of being less socially connected.

Transformational leadership behaviours were also found to be positively related to team cohesion. Using the DTLI, Callow et al. (2009) found that frequent use of the leadership behaviours of fostering acceptance of group goals and teamwork, high performance expectation and individual consideration were significantly related to the perceptions of task cohesion, while fostering acceptance of group goals and promoting teamwork and intellectual stimulation were associated with the perceptions of social cohesion. Similar results supporting the relationship between transformational leadership behaviours and team cohesion were found by Price and Weiss (2013), however, it should be noted that the authors collapsed transformational leadership behaviours and contingent reward into one factor. Altogether, the emerging consensus in the literature suggests the frequent use of the majority of leadership behaviours elicited by athlete leaders has a major influence on the perception of team cohesion.

Only recently have researchers begun to investigate more aspects of athlete leadership behaviours other than the frequency, providing a clearer picture of how athlete leadership influences team-level outcomes (e.g., Duguay et al., 2018; Loughead et al., 2016). Diversifying

the rating scales in which to investigate leadership behaviour may be the next appropriate step in advancing the athlete leadership literature. Perhaps drawing from other disciplines where they have attempted to optimize research on effective behaviours would provide some direction. For instance, the use of different imagery types has begun to differentiate the relationships between the frequency and the effectiveness of images on desired outcomes (Nordin & Cumming, 2008; Weinberg, Butt, Knight, Burke, & Jackson, 2003). Researchers have found athletes lack the ability differentiate between the frequency and effectiveness imagery, nor can they differentiate between the two rating scales in relation to certain and desired outcomes (e.g., Ross-Stewart & Short, 2009; Weinberg et al., 2003). Perhaps athlete leadership researchers can mirror the progress made in other areas, such as the imagery literature, towards understanding better effective behaviours.

Athlete satisfaction is important to examine because it has been shown to be related to leadership and is linked to group outcomes such as cohesion (Paradis & Loughead, 2012; Zacharatos, Barling, & Kelloway, 2000). However, the majority of research on the relationship between leadership and athlete satisfaction in sport has focused on coaches' behaviours. Satisfaction has not received much attention in relation to athlete leadership. Zacharatos et al. provided some insight into this relationship finding that transformational leadership behaviours exhibited by adolescent high school athletes were predictive of athlete satisfaction.

Although research on athlete leadership behaviours in relation to athlete satisfaction has not been examined extensively, several researchers have investigated satisfaction within the broad area of *athlete leadership*. Eys, Loughead, and Hardy (2007) examined varsity athletes' satisfaction compared to the dispersion of athlete leaders on their team. Their results showed that team members were most satisfied when an equal amount of leaders fulfilled three functions

(task, social, external) of leadership. These findings open the door to research concerned with the relationship between athlete leaders and individual outcomes (i.e., satisfaction). Crozier, Loughead, and Munroe-Chandler (2013) followed this path examining varsity athletes' perception of satisfaction when having the ideal number of athlete leaders on their team. Primarily their research was to determine the ideal number of athlete leaders (19% formal, 66% informal), but their results also revealed that outcomes associated with athlete leaders included several individual cognitions, such as satisfaction.

Cohesion

The second section of the literature review will focus on cohesion in sport. First, a definition will be provided, followed by an explanation of a conceptual model of the construct, and the inventories used to examine cohesion. This section will conclude with a review of the main findings related to cohesion in sport.

Definition

Carron, Brawley, and Widmeyer (1998) have advanced the most widely accepted definition of cohesion that refers to it as "a dynamic process that is reflected in the tendency for a group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of member affective needs" (Carron et al., 1998, p. 213). When cohesion is viewed in this manner, it highlights four characteristics to understanding the construct. The first characteristic of cohesion is that it is *multidimensional*. Cohesive teams may be influenced by many factors that bring the group together such as a strong commitment towards team goals or stay united as a result of strong social connections. This multidimensionality suggests two seemingly identical groups may have different perceptions of their team's cohesion or may be united around one factor more than another. The second characteristic of cohesion is related to

the *dynamic* nature of the construct. This characteristic highlights that cohesion will change over time. For example, a team may originally unite over their commitment towards task-related team goals at the start of their season but may remain united due to social connections made throughout the season. The third characteristic implies that cohesion is *instrumental* in nature. This characteristic reflects the reasons why group forms and remain united. Sport teams typically form for task-oriented reasons; therefore, the cohesiveness of the group would often reflect this task nature. The fourth characteristic is that cohesion is *affective*. The need to belong is a fundamental human motive, therefore, social relationships form over time as a result of member instrumental and social interactions creating positive affect.

Theoretical Approach Used to Study Cohesion

Cohesion can be operationalized by Carron, Brawley, and Widmeyer's (1985) conceptual model (see Figure 3). Their conceptual model was based on three foundational assumptions. First, it is assumed that cohesion can be assessed through individual group members' perceptions. Although it is a group property, the constant exposure to various task and social related situations cause certain beliefs about the group to be developed. Second, it is assumed that each member's perceptions of cohesiveness can be related to the group as a whole as well as the manner in which the group satisfies individual satisfaction. In order to address both of these perceptions the conceptual model of cohesion contains two main social cognitions: *group integration* (GI) and *individual attractions to the group* (ATG). GI reflects member's "perceptions about the group's closeness, similarity and bonding within the group as a whole" (Carron et al., 1998, p. 217). This social cognition also indicates the individual's perception of the amalgamation of the group and is represented by "us", "our", and "we" perceptions. ATG can be viewed as the individual's perceptions about personal attractions to the group and the

motivations that influence their retention in the group. ATG also reflects the individual's feelings about the group which are represented by "I" and "my" perceptions. The final assumption is that there are two orientations in which an individual member can perceive the cohesiveness of the group. The current model suggests members focus their perceptions on two orientations; task or social. Task orientation represents motivation towards accomplishing the group's goals and objectives whereas social orientation represents motivation towards developing and maintaining social relationships.

Therefore, when cohesion is viewed this way, the conceptual model identifies four constructs that are labelled *group integration-task* (GI-T), *group integration-social* (GI-S), *individual attractions to the group-task* (ATG-T), and *individual attractions to the group-social* (ATG-S). GI-T is viewed as a team member's perceptions about the unity of the team as a whole around the group's objective whereas GI-S focuses around the group's social relationships. ATG-T represents an "individual's feelings about [their] personal involvement with the group task productivity, goals, and objectives" (Carron et al., 1998, p. 217). In contrast, ATG-S represents their feelings about their personal acceptance and social interaction with the group.

Measurement of Cohesion

Carron et al. (1985) developed the Group Environment Questionnaire (GEQ) to measure the four dimensions of cohesion. The GEQ is an 18-item self-report questionnaire that is scored on a 9-point Likert scale ranging from 1 (*Strongly disagree*) to 9 (*Strongly agree*). Of the 18-items, 12 of them are negatively worded and need to be reversed scored. GI-T contains five items with an example item being: "Our team is united in trying to reach its goals for performance". The GI-S subscale contains four items and an example item being: "Members of our team do not stick together outside of practices and games". ATG-T is comprised of four

items with an example being: “I do not like the style of play on this team”. The ATG-S subscale is comprised of five items and an example would be: “Some of my best friends are on this team”.

In their initial research on the GEQ, Carron et al. (1985) reported Cronbach alpha values for GI-T (α = .70), GI-S (α = .76), ATG-T (α = .75), and ATG-S (α = .64). While some studies have reported similar or larger values, it must be noted that there are several studies with varied internal consistencies. For example, Westre and Weiss (1991) found moderate Cronbach alpha values: α = .44 (GI-S), α = .54 (ATG-S), α = .66 (GI-T), and α = .68 (ATG-T). Given the poor internal consistency, the authors of the GEQ endorsed the continuous refinement of the GEQ to address potential psychometric concerns that may arise. One factor that may contribute to the variability in the internal consistency is the mix of positively and negatively worded items (Eys, Carron, Bray, & Brawley, 2007). The use of positive and negative items may reduce the tendency to agree to all statements regardless of the content (i.e., response acquiescence). However, items phrased using negation may not be considered exactly opposite of positive worded items, which may negatively affect the reliability and validity of scales using mixed items (Barnette, 2000). To address the internal consistency of the GEQ, Eys et al. (2007) current that a version of the GEQ with all positively worded items may help yield higher Cronbach alpha values than the original mixed item scales. An example of an original item, such as “I do not enjoy being part of the social activities of this team” was altered to “I enjoy being part of the social activities of this team” in the positively worded version of the questionnaire. They found that the positively worded version of the GEQ produced greater internal consistency values across all dimensions compared to the original version of the GEQ. In their study, Eys et al. found that the original version of the GEQ produced Cronbach alpha values of α = .46 (ATG-S),

α = .70 (GI-S), α = .73 (GI-T), and α = .78 (ATG-T); whereas the positively worded GEQ had larger values of α = .74 (ATG-S), α = .86 (GI-S), α = .84 (GI-T), and α = .83 (ATG-T).

Research on Cohesion in Sport

There is a wealth of research within the sport domain regarding the association to both antecedents and consequences of cohesion. One of the areas that is of interest to the current thesis is leadership. This construct has been noted as possibly the most important because the leaders on a team, including players and coaches, are in the best position to influence change in cohesion (Gardner, Shields, Bredemeier, & Bostrom, 1996).

In this section, the influence that coaching leadership has on team social- and task cohesion will be discussed. It is very beneficial for a coach to facilitate social cohesion as it has a strong relation to team performance (Carron, Colman, Wheeler, & Stevens, 2002). As mentioned in the previous section, there are positive relationships between the frequency of coaching leadership behaviours, using the LSS, and social cohesion. Specifically, when coaches exhibit a high frequency of training and instruction and social support leadership behaviours, these have been found to be positively related to social cohesion (Gardner et al. 1996; Jowett & Chaundy, 2004). Other coaching leadership behaviours, such as democratic behaviour and positive feedback, have been shown to have an inconsistent association with social cohesion (Kim & Cruz, 2016). Turman (2003) suggests the inconsistencies of the strength of these relationships may be due to the coach-athlete interpersonal relationship. In other words, if the athlete is on the same page as the coach and agrees with their actions, the athlete may perceive a greater sense of belonging.

Task cohesion (as opposed to social cohesion) has been found to be a stronger contributor to the relationship between coaching leadership behaviours, as defined by the LSS, and team cohesion (Gardner et al., 1996; Kim & Cruz, 2016). This result may be explained since the

coach's role is to guide the athletes toward the ultimate task objective—winning. Coaches who are perceived to show a higher frequency in training and instruction, democratic behaviours, positive feedback and social support were found to have more task cohesive teams (Jowett & Chaundy, 2004). Since athletes' perceptions of cohesion can be affected by the coach's leadership behaviours, understanding the degree of team cohesion in regards to each leadership behaviour is essential for being able to predict and design appropriate coaching interventions that facilitate the development of team cohesion.

Athlete Satisfaction

The third section of this literature review will focus on athlete satisfaction in sport. In this section a definition of the construct will be provided, followed by an explanation of the theory regarding the construct, and the predominant inventory used to examine athlete satisfaction. This section will conclude with a review of the main findings related to athlete satisfaction in sport.

Definition

Satisfaction has possibly been the most popular outcome in the organizational literature due to the belief that satisfaction is associated with positive benefits such as the amount of effort an individual will be put into a task, longevity within an organization, and overall happiness (Locke, 1969; Riemer & Chelladurai, 1998; Saal & Knight, 1988). Some sport researchers argue that athlete satisfaction must be given the same level of recognition as job satisfaction from the organizational literature (Riemer & Chelladurai, 1998). Chelladurai and Riemer (1997) noted that the importance in studying athlete satisfaction was supported by the fact that the construct is featured prominently in conceptual models including the MML (Chelladurai, 2007) and the conceptual model of cohesion (see Figure 3; Carron, 1982). As such, Chelladurai and Riemer defined athlete satisfaction as "a positive affective state resulting from a complex evaluation of

the structures, process, and outcomes associated with the athletic experience" (p. 135). The definition by Chelladurai and Riemer was developed based on three assumptions. First, athlete satisfaction is an attitude that is based on judgements regarding what is wanted and the value of which it is received (Riemer & Chelladurai, 1998). Second, the definition is multidimensional that includes components regarding the structures, processes, and outcomes, which allow an athlete to be satisfied to a different extent within each of these three components. Third, the overall satisfaction of an athlete is not the summation of these three components. For instance, an athlete may judge the process benefits to be more valuable than the outcome benefits, thereby perceiving greater satisfaction from the process than the outcome.

Measurement of Athlete Satisfaction

The study of satisfaction in sport has utilized different inventories to assess this construct. Inventories such as the Sport Satisfaction Inventory (SSI; Whittal & Orlick, 1978) and the Satisfaction Scale (Chelladurai et al., 1988) were accompanied by major limitations. First, while the SSI showed adequate reliability, there was no evidence of any type of validity. Second, the Satisfaction Scale focuses on satisfaction with leadership and personal outcome, therefore, lacking comprehensiveness with respect to aspects of the athletic experience. Knowing the limitations of the previous scales and the need for a comprehensive and psychometrically sound instrument, Riemer and Chelladurai (1998) developed the Athlete Satisfaction Questionnaire (ASQ). The ASQ is a 56-item inventory measuring15 dimensions of athlete satisfaction. The 15 dimensions of the scale include *individual performance* (3 items), *team performance* (3 items), *ability utilization* (5 items), *strategy* (6 items), *personal treatment* (5 items), *training and instruction* (3 items), *task contribution* (3 items), *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). Participants are asked to rate these various dimensions on a 7-point Likert scale ranging from 1 (*Not at all satisfied*) to 7 (*Extremely satisfied*).

Riemer and Chelladurai (1998) also conducted a confirmatory factor analysis to assess the validity of the ASQ. The results of the confirmatory factor analysis showed a reasonably good fit, $\chi 2/df$ (217) = 1.9, TLI = .93, BFI = .94 and RMSEA = .045, 90% CI [.043, .048]. Their findings also provided acceptable internal consistencies, in the form of Cronbach's alpha values, for all dimensions ranging from α = .78 (personal dedication) to α = .95 (team performance).

Research on Athlete Satisfaction in Sport

Satisfaction has not received much attention in relation to athlete leadership and even less in relation to athlete leadership behaviours. Athlete leadership has been related to athletes being more satisfied with their sporting experience (Eys et al., 2007) and it is suggested that transformational leadership behaviours were contributors of their satisfaction (Price & Weiss, 2013; Zacharatos et al., 2000). Additionally, the athlete leadership behaviours of training and instruction, democratic behaviour, social support, and positive feedback were found to positively predict athlete satisfaction (Paradis & Loughead, 2012). Further investigation into the relationship between athlete leadership behaviours and athlete satisfaction would be beneficial given athlete satisfaction has shown to influence several aspects of sport participation (e.g., Matosic & Cox, 2014; Price & Weiss, 2013).

References

Barnette, J. J. (2000). Effects of stem and Likert response option reversals on survey internal consistency: If you feel the need, there is a better alternative to using those negatively worded stems. *Educational and Psychological Measurement, 60,* 361-370.

Bass, B. M. (1996). Is there universality in the full range model of leadership? *International Journal of Public Administration, 19,* 731-761.

Bass, B. M., & Avolio, B. J. (2000). *MLQ, Multifactor Leadership Questionnaire sampler set: Technical report, leader form, rater form, and scoring key for MLQ form 5x-short.* Palo Alto: Mind Garden.

Bass, B. M., & Riggio, R. E. (2006). *Transformational leadership*. Mahwah, NJ; Psychology Press.

Callow, N., Smith, M. J., Hardy, L., Arthur, C. A., & Hardy, J. (2009). Measurement of transformational leadership and its relationship with team cohesion and performance level. *Journal of Applied Sport Psychology, 21,* 395-412.

Carron, A. V., Brawley, L. R., & Widmeyer, W. N. (1998). The measurement of cohesiveness in sport groups. *Advances in Sport and Exercise Psychology Measurement, 23,* 213-226.

Carron, A. V., Colman, M. M., Wheeler, J., & Stevens, D. (2002). Cohesion and performance in sport: A meta analysis. *Journal of Sport and Exercise Psychology, 24,* 168-188.

Carron, A. V., Widmeyer, W. N., & Brawley, L. R. (1985). The development of an instrument to assess cohesion in sport teams: The Group Environment Questionnaire. *Journal of Sport Psychology, 7,* 244-266.

Chelladurai, P. (2007). Leadership in sports. *Handbook of sport psychology* (pp. 113-135). Hoboken, NJ: John Wiley & Sons, Inc.

Chelladurai, P., & Riemer, H. A. (1997). A classification of facets of athlete satisfaction. *Journal of Sport Management, 11*, 133-159.

Chelladurai, P., & Saleh, S. D. (1980). Dimensions of leader behavior in sports: Development of a leadership scale. *Journal of Sport Psychology, 2*, 34-45.

Crozier, A. J., Loughead, T. M., & Munroe-Chandler, K. J. (2013). Examining the benefits of athlete leaders in sport. *Journal of Sport Behavior, 36*, 346-364.

Crozier, A. J., Loughead, T. M., & Munroe-Chandler, K. J. (2017). Top-down or shared leadership? Examining differences in athlete leadership behaviours based on leadership status in sport. *Physical Culture: Journal of Sport Sciences & Physical Education, 71*, 86-98.

Cruz, A. B., & Kim, H. D. (2017). Leadership preferences of adolescent players in sport: influence of coach gender. *Journal of Sports Science & Medicine, 16*, 172-179.

Duguay, A. M., Loughead, T. M., & Munroe-Chandler, K. J. (2018). Investigating the importance of athlete leadership behaviors and the impact of leader tenure. *Journal of Sport Behavior, 41*, 129-147.

Eys, M. A., Carron, A. V., Bray, S. R., & Brawley, L. R. (2007). Item wording and internal consistency of a measure of cohesion: The Group Environment Questionnaire. *Journal of Sport and Exercise Psychology, 29*, 395-402.

Eys, M. A., Loughead, T. M., & Hardy, J. (2007). Athlete leadership dispersion and satisfaction in interactive sport teams. *Psychology of Sport and Exercise, 8*, 281-296.

Fiedler, F. E. (1971). Validation and extension of the contingency model of leadership effectiveness: A review of empirical findings. *Psychological Bulletin, 76*, 128-148.

Fleishman, E. A. (1957a). A leader behavior description for industry. *Leader behavior: Its description and measurement, 103,* 10-119. Columbus: The Ohio State University, Bureau of Business Research.

Fleishman, E.A. (1957b). The Leadership Opinion Questionnaire. *Leader behavior: Its description and measurement.* Columbus: The Ohio State University, Bureau of Business Research.

Fransen, K., Van Puyenbroeck, S., Loughead, T. M., Vanbeselaere, N., De Cuyper, B., Broek, G. V., & Boen, F. (2015). Who takes the lead? Social network analysis as a pioneering tool to investigate shared leadership within sports teams. *Social Networks, 43,* 28-38.

Gardner, D. E., Shields, D. L. L., Bredemeier, B. J. L., & Bostrom, A. (1996). The relationship between perceived coaching behaviors and team cohesion among baseball and softball players. *The Sport Psychologist, 10*, 367-381.

Graen, G., & Cashman, J. F. (1975). A role-making model of leadership in formal organizations: A developmental approach. In J.G. Hunt & L.L. Larson (Eds.), *Leadership frontiers* (pp.143-165). Kent, OH: Kent State University Press.

Halpin, A.W. (1957). The leader behavior and effectiveness of aircraft commanders. *Leader behavior: Its description and measurement,* 52-64. Columbus: The Ohio State University, Bureau of Business Research.

House, R. J. (1971). A path-goal theory of leader effectiveness. *Administrative Science Quarterly*. 16, 321-338.

Jowett, S., & Chaundy, V. (2004). An investigation into the impact of coach leadership and coach-athlete relationship on group cohesion. *Group Dynamics: Theory, Research, and Practice, 8,* 302-311.

Light Shields, D. L., Gardner, D. E., Light Bredemeier, B. J., & Bostro, A. (1997). The relationship between leadership behaviors and group cohesion in team sports. *The Journal of Psychology*, *131*, 196-210

Locke, E. A. (1969). What is job satisfaction? *Organizational Behavior and Human Performance*, *4*, 309-336.

Loughead, T. M. (2017). Athlete leadership: A review of the theoretical, measurement, and empirical literature. *Current Opinion in Psychology*, *16*, 58-61.

Loughead, T. M., & Hardy, J. (2005). An examination of coach and peer leader behaviors in sport. *Psychology of Sport and Exercise*, *6*, 303-312.

Loughead, T. M., Hardy, J., & Eys, M. A. (2006). The nature of athlete leadership. *Journal of Sport Behavior*, *29*, 142-158

Northouse, P. G. (2001). *Leadership: Theory and practice* (2nd ed.). Thousand Oaks, CA: Sage

Osborn, R. N., & Hunt, J. G. (1975). An adaptive-reactive theory of leadership: The role of macro variables in leadership research. In J.G. Hunt & L.L. Larson (Eds.), *Leadership frontiers* (pp. *27*-44). Kent, OH: Kent State University Press.

Paradis, K. F., & Loughead, T. M. (2012). Examining the mediating role of cohesion between athlete leadership and athlete satisfaction in youth sport. *International journal of Sport Psychology*, *43*, 117-136.

Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *The Leadership Quarterly*, *1*, 107-142.

Price, M. S., & Weiss, M. R. (2013). Relationships among coach leadership, peer leadership, and adolescent athletes' psychosocial and team outcomes: A test of transformational leadership theory. *Journal of Applied Sport Psychology, 25*, 265-279.

Riemer, H. A., & Chelladurai, P. (1998). Development of the Athlete Satisfaction Questionnaire (ASQ). *Journal of Sport and Exercise Psychology*, *20*, 127-156.

Saal, F. E., & Knight, P. A. (1988). *Industrial/organizational psychology: Science and practice*. Pacific Grove, CA: Thomson Brooks/Cole Publishing Co.

Sackett, P. R., Berry, C. M., Wiemann, S. A., & Laczo, R. M. (2006). Citizenship and counterproductive behavior: Clarifying relations between the two domains. *Human Performance, 19,* 441-464.

Smith, M. J., Young, D. J., Figgins, S. G., & Arthur, C. A. (2017). Transformational leadership in elite sport: A qualitative analysis of effective leadership behaviors in cricket. *The Sport Psychologist, 31*, 1-15.

Spink, K. S. (1998). Mediational effects of social cohesion on the leadership behavior–intention to return relationship in sport. *Group dynamics: Theory, research, and practice* (pp. 92-100).

Stogdill, R.M. (1963). *Manual for the Leader Behavior Description Questionnaire-Form XII*. Columbus: The Ohio State University, Bureau of Business Research.

Turman, P. D. (2003). Coaches and cohesion: The impact of coaching techniques on team cohesion in the small group sport setting. *Journal of Sport Behaviour*, *26*, 86-104.

Vincer, D. J., & Loughead, T. M. (2010). The relationship among athlete leadership behaviors and cohesion in team sports. *The Sport Psychologist, 24*, 448-467.

Westre, K. R., & Weiss, M. R. (1991). The relationship between perceived coaching behaviors and group cohesion in high school football teams. *The Sport Psychologist, 5,* 41-54.

Wheelan, S. A., & Johnston, F. (1996). The role of informal member leaders in a system containing formal leaders. *Small Group Research*, *27*, 33-55.

Whittal, N. R., & Orlick, T. D. (1978). The sport satisfaction inventory. *Psychology of motor behavior and sport,* 144-155. Champaign, IL*:* Human Kinetics.

Yukl, G. (1999). An evaluation of conceptual weaknesses in transformational and charismatic leadership theories. *The Leadership Quarterly*, *10,* 285-305.

Zacharatos, A., Barling, J., & Kelloway, E. K. (2000). Development and effects of transformational leadership in adolescents. *The Leadership Quarterly, 11*, 211-226.

TABLES

Table 1

Descriptive Statistics for the Frequency and Effectiveness of Athlete Leadership Behaviours

	Frequency			Effectiveness		
Leadership Behaviour	n	M (SD)	α	n	M (SD)	α
DTLI						
Individual Consideration	80	3.98 (.57)[a]	.69	66	3.88 (.63)[b]	.77
Inspirational Motivation	80	4.01 (.58)[a]	.74	66	3.99 (.58)[b]	.74
Intellectual Stimulation	80	3.70(.75)[a]	.84	66	3.56 (.71)[b]	.83
Fostering Acceptance of Group Goals and Promoting Teamwork	80	4.23 (.64)[a]	.82	66	4.02 (.65)[b]	.72
High Performance Expectations	80	4.32 (.63)[a]	.78	66	4.05 (.67)[b]	.77
Appropriate Role Modelling	80	4.07 (.72)[a]	.81	66	3.98 (.69)[b]	.79
Contingent Reward	80	4.09 (.62)[a]	.79	66	4.16 (.62)[b]	.79
LSS						
Training and Instruction	71	3.47 (.70)[a]	.92	59	3.43 (.69)[b]	.92
Democratic Behaviour	71	3.41 (.76)[a]	.87	59	3.44 (.74)[b]	.87
Autocratic Behaviour	71	2.82 (.76)[a]	.76	59	2.90 (.87)[b]	.85
Social Support	71	3.67 (.69)[a]	.82	59	3.66 (.73)[b]	.86
Positive Feedback	71	3.88 (.75)[a]	.88	59	3.94 (.69)[b]	.86

Note. DTLI = Differentiated Transformational Leadership Inventory (Callow et al., 2009); LSS = Leadership Scale for Sport (Chelladurai & Saleh, 1980). [a] Variables were rated on a scale from 1-5, with higher numbers representing a greater perceived frequency. [b] Variables were rated on a scale from 1-5, with higher numbers representing greater perceived effectiveness.

Table 2
Descriptive Statistics for the Perceptions of Team Cohesion and Athlete Satisfaction

	n	M (SD)	α
GEQ			
Individual Attraction to Group - Task	60	7.10 (1.26)[a]	.62
Individual Attraction to Group - Social	60	8.00 (.97)[a]	.83
Group Integration - Task	60	6.93 (1.21)[a]	.86
Group Integration - Social	60	7.39 (1.20)[a]	.75
ASQ			
Individual Performance	60	5.20 (1.19)[b]	.78
Team Performance	60	3.76 (1.23)[b]	.80
Ability Utilization	60	5.33 (1.19)[b]	.93
Strategy	60	4.89 (1.13)[b]	.90
Personal Treatment	60	5.34 (1.24)[b]	.89
Training and Instruction	60	5.43 (1.22)[b]	.80
Team Task Contribution	60	5.44 (.91)[b]	.76
Team Social Contribution	60	5.52 (1.03)[b]	.84
Ethics	60	5.42 (.95)[b]	.73
Team Integration	60	6.02 (.87)[b]	.81
Personal Dedication	60	5.41 (.94)[b]	.81
Task Satisfaction	60	5.20 (.82)[b]	.94
Social Satisfaction	60	5.52 (.99)[b]	.87

Note. GEQ = Group Environment Questionnaire (Eys, Carron, Bray, & Brawley, 2007); ASQ = Athlete Satisfaction Questionnaire (Riemer & Chelladurai, 1998). [a] Variables were rated on a scale from 1-9, with higher numbers representing a greater perceived cohesion. [b] Variables were rated on a scale from 1-7, with higher numbers representing a greater perceived satisfaction.

Table 3.

Intercorrelations between the frequency and effectiveness of athlete leadership behaviours

Variable		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Frequency																									
	1. IC	-																							
	2. IM	.69**	-																						
	3. IS	.78**	.64**	-																					
	4. AGG	.69**	.75**	.62**	-																				
	5. HPE	.64**	.55**	.65**	.60**	-																			
	6. ARM	.74**	.61**	.75**	.59**	.63**	-																		
	7. CR	.57**	.53**	.53**	.46**	.45**	.39**	-																	
	8. TI	.65**	.45**	.73**	.52**	.65**	.65**	.55**	-																
	9. DB	.73**	.49**	.72**	.45**	.55**	.64**	.62**	.77**	-															
	10. AB	.07	.01	.19	-.08	.01	.01	.16	.24*	.16	-														
	11. SS	.58**	.37**	.60**	.42**	.53**	.54**	.47**	.80**	.84**	.12	-													
	12. PF	.56**	.43**	.52**	.50**	.44**	.45**	.70**	.66**	.73**	-.01	.66**	-												
Effectiveness	13. IC	.75**	.47**	.65**	.52**	.37**	.49**	.39**	.52**	.59**	-.01	.48**	.57**	-											
	14. IM	.54**	.65**	.55**	.52**	.39**	.44**	.43**	.47**	.51**	-.11	.43**	.55**	.72**	-										
	15. IS	.70**	.45**	.83**	.49**	.50**	.69**	.34**	.73**	.68**	.07	.60**	.48**	.73**	.65**	-									
	16. AGG	.44**	.36**	.41**	.55**	.41**	.41**	.41**	.60**	.45**	-.04	.47**	.49**	.55**	.63**	.56**	-								
	17. HPE	.53**	.25*	.53**	.32**	.66**	.51**	.34**	.67**	.61**	-.03	.59**	.46**	.55**	.57**	.63**	.66**	-							
	18. ARM	.64**	.46**	.73**	.46**	.50**	.91**	.34**	.60**	.55**	-.02	.49**	.44**	.62**	.60**	.75**	.53**	.58**	-						
	19. CR	.39**	.40**	.42**	.36**	.33**	.42**	.71**	.51**	.56**	-.03	.42**	.73**	.41**	.62**	.44**	.51**	.43**	.48**	-					
	20. TI	.69**	.37**	.73**	.45**	.63**	.60**	.47**	.88**	.75**	-.01	.77**	.68**	.65**	.59**	.77**	.58**	.64**	.65**	.52**	-				
	21. DB	.70**	.36**	.63**	.39**	.56**	.59**	.45**	.72**	.82**	-.04	.77**	.61**	.64**	.57**	.64**	.51**	.68**	.61**	.47**	.85**	-			
	22. AB	.48**	.19	.39**	.11	.35**	.38**	.34**	.41**	.35**	.53**	.21	.22	.21	.07	.21	.12	.23	.33*	.29*	.41**	.44**	-		
	23. SS	.56**	.20	.52**	.34**	.47**	.53**	.31*	.68**	.71**	-.12	.86**	.59**	.57**	.45**	.62**	.52**	.53**	.55**	.38**	.81**	.85**	.22	-	
	24. PF	.51**	.30*	.45**	.40**	.37**	.37**	.49**	.57**	.64**	-.10	.61**	.90**	.57**	.55**	.47**	.46**	.48**	.45**	.67**	.72**	.68**	.27*	.68**	-

Note. IC = Individual Consideration; IM = Inspirational Motivation; IS = Intellectual Stimulation; AGG = Fostering Acceptance of Group Goals and Promoting Teamwork; HPE = High Performance Expectations; CR = Contingent Reward; TI = Training and Instruction; DB = Democratic Behaviour; AB = Autocratic Behaviour; SS = Social Support; PF = Positive Feedback. Pearson correlation coefficients for athlete leadership behaviours of the Differentiated Transformational Leadership Inventory (Callow et al., 2009) and the Leadership Scale for Sports (Chelladurai & Saleh, 1980). Asterisk(s) denote a significant relationship. *p < .05; **p < .01.

Table 4.

Pearson correlations for the relationships between the frequency and effectiveness of athlete leadership behaviours on the Differentiated Transformational Leadership Inventory and team cohesion and athlete satisfaction variables

		IC	IM	IS	AGG	HPE	ARM	CR
GEQ								
	Individual Attraction to Group - Task	.22* (.41**)	.23* (.49**)	.28* (.23*)	.19 (.15)	.21* (.24*)	.11 (.24*)	.22* (.22*)
	Individual Attraction to Group -	.16 (.33**)	.27* (.32**)	.26* (.23*)	.36** (.14)	.18 (.12)	-.05 (.07)	.18 (.14)
	Group Integration - Task	.35** (.53**)	.26* (.50**)	.31** (.27*)	.26* (.36**)	.43** (.57**)	.17 (.24*)	.22* (.21)
	Group Integration - Social	.04 (.25*)	.12 (.14)	.01 (-.10)	.20 (-.04)	-.09 (-.10)	-.14 (-.11)	-.13 (-.10)
ASQ								
	Individual Performance	.12 (.23*)	.20 (.18)	.17 (.04)	.11 (.00)	.06 (-.02)	.05 (.09)	-.03 (.03)
	Team Performance	.10 (.18)	.25* (.14)	.06 (-.08)	.01 (.12)	-.01 (-.09)	-.01 (-.04)	.17 (.20)
	Ability Utilization	.16 (.16)	.14 (.15)	.15 (.05)	.10 (.07)	.14 (.01)	.10 (.15)	.09 (.12)
	Strategy	.55** (.49**)	.33** (.54**)	.53** (.48**)	.35** (.44**)	.51** (.44**)	.51** (.55**)	.36** (.40**)
	Personal Treatment	.46** (.48**)	.34** (.48**)	.41** (.39**)	.32** (.39**)	.33** (.28*)	.40** (.47**)	.27* (.27*)
	Training and Instruction	.39** (.47**)	.32** (.46**)	.36** (.28**)	.25* (.37**)	.28* (.19)	.32** (.38**)	.36** (.30**)
	Team Task Contribution	.27* (.33**)	.20 (.25*)	.22* (.08)	.29* (.24*)	.26* (.22*)	.12 (.15)	.15 (.16)
	Team Social Contribution	.15 (.23*)	.18 (.15)	.19 (.06)	.31** (.17)	.23* (.13)	.03 (.03)	.08 (-.02)
	Ethics	.03 (.25*)	.22* (.34**)	.06 (.04)	.11 (.21)	.07 (.17)	-.11 (.01)	.00 (.00)
	Team Integration	.24* (.45**)	.33** (.54**)	.34** (.26*)	.31** (.39**)	.29* (.38**)	.08 (.21)	.22* (.27*)
	Personal Dedication	.11 (.32**)	.30** (.32**)	.02 (-.01)	.30** (.15)	-.04 (-.10)	-.08 (.08)	.15 (.08)

Note. GEQ = Group Environment Questionnaire (Eys, Carron, Bray, & Brawley, 2007); ASQ = Athlete Satisfaction Questionnaire (Riemer & Chelladurai, 1998); IC = Individual Consideration; IM = Inspirational Motivation; IS = Intellectual Stimulation; AGG = Fostering Acceptance of Group Goals and Promoting Teamwork; HPE = High Performance Expectations; CR = Contingent Reward. Pearson correlation coefficients between athlete leadership behaviours and the dependent variables are presented above.The dependent variables are listed on the left-hand column while the independent variables are listed in the first row. Coefficients not bound by parentheses represent the relationship between the frequency of the athlete leadership behaviour and the dependent variable. Coefficients bound by parentheses represent the relationship between the effectiveness of the athlete leadership behaviour and the dependent variable. Asterisk(s) denote a significant relationship. $*p < .05$; $**p < .01$.

Table 5.
Pearson correlations for the relationships between the frequency and effectiveness of athlete leadership behaviours on the Leadership Scale for Sports and team cohesion and athlete satisfaction variables

	TI		DB		AB		SS		PF	
GEQ										
Individual Attraction to Group - Task	.13	(.28*)	.30*	(.30*)	-.23*	(.00)	.20	(.28*)	.35**	(.28*)
Individual Attraction to Group - Social	.13	(.28*)	.23*	(.28*)	-.04	(.05)	.23*	(.25*)	.35**	(.28*)
Group Integration - Task	.42**	(.52**)	.49**	(.60**)	-.12	(.12)	.50**	(.46**)	.41**	(.36**)
Group Integration - Social	-.24	(-.04)	-.04	(.09)	-.25	(-.13)	-.01	(.10)	.03	(.08)
ASQ										
Individual Performance	-.05	(.03)	-.06	(.06)	-.22*	(.08)	.14	(-.06)	.02	(-.06)
Team Performance	.10	(.06)	.16	(.08)	.22*	(.21)	.09	(.07)	.20	(.14)
Ability Utilization	.04	(.07)	.14	(.14)	-.10	(.13)	.05	(.08)	.05	(.03)
Strategy	.57**	(.69**)	.58**	(.75**)	-.10	(.38**)	.57**	(.69**)	.47**	(.49**)
Personal Treatment	.35**	(.56**)	.30**	(.58**)	-.26*	(.21)	.35**	(.55**)	.38**	(.43**)
Training and Instruction	.32**	(.47**)	.30**	(.48**)	-.09	(.27*)	.30**	(.46**)	.39**	(.37**)
Team Task Contribution	.25*	(.33**)	.37**	(.48**)	-.15	(.25*)	.34**	(.36**)	.27*	(.27*)
Team Social Contribution	.18	(.28*)	.22*	(.36**)	-.08	(.07)	.28*	(.29*)	.18	(.17)
Ethics	.09	(.22*)	.28*	(.32**)	-.12	(-.07)	.29*	(.26*)	.11	(.07)
Team Integration	.35**	(.43**)	.46**	(.45**)	-.11	(.03)	.43**	(.36**)	.39**	(.30**)
Personal Dedication	-.11	(.13)	-.07	(.16)	-.22*	(-.01)	-.10	(.15)	.16	(.13)

Note. GEQ = Group Environment Questionnaire (Eys, Carron, Bray, & Brawley, 2007); ASQ = Athlete Satisfaction Questionnaire (Riemer & Chelladurai, 1998); TI = Training and Instruction; DB = Democratic Behaviour; AB = Autocratic Behaviour; SS = Social Support; PF = Positive Feedback. Pearson correlation coefficients between athlete leadership behaviours are presented above. The dependent variables are listed on the left-hand column and the independent variables are listed in the first row. Coefficients not bound by parentheses represent the relationship between the frequency of the athlete leadership behaviour and the dependent variable. Coefficients bound by parentheses represent the relationship between the effectiveness of the athlete leadership behaviour and the dependent variable. Asterisk(s) denote a significant relationship. $*p < .05$; $**p < .01$.

Table 6.
Regression coefficients for the relationships between the frequency and effectiveness of athlete leadership behaviours, team cohesion dimensions and athlete satisfaction

		ATG-T		ATG-S		GI-T		GI-S		AS-T		AS-S	
DTLI													
	Individual Consideration	-.02	(-.26)	-.14	(0.26)	.11	(.42**)	.22	(.56)	.20	(.30)	.21	(.17)
	Inspirational Motivation	.10	(.63**)	.09	(0.35)	.21	(.34*)	.06	(.22)	.28	(.38)	.15	(.17)
	Intellectual Stimulation	.42	(-.34)	.48*	(-.30)	.01	(-.73**)	.33	(-.41)	.20	(.50*)	.25	(.50*)
	Fostering Acceptance of Group Goals and Promoting Teamwork	-.07	(-.37)	.29	(-.10)	-.06	(-.20)	.24	(-.09)	-.09	(.09)	.02	(.16)
	High Performance Expectations	.06	(.15)	.10	(-.09)	.17	(.46**)	-.13	(-.21)	-.08	(-.31)	-.04	(-.32)
	Appropriate Role Modelling	-.27	(.00)	-.50*	(-.21)	-.33	(-.20)	-.38	(-.15)	-.24	(-.02)	-.19	(.07)
	Contingent Reward	.04	(-.03)	-.08	(-.10)	-.13	(-.07)	-.14	(-.14)	.06	(-.06)	.05	(-.22)
LSS	Training and Instruction	-.25	(.12)	-.29	(.37)	.10	(.64**)	-.59	(-.21)	.05	(.24)	.02	(.49)
	Democratic Behaviour	.19	(-.23)	-.01	(.00)	.15	(.25)	-.07	(.29)	-.01	(.32)	-.39	(.60)
	Autocratic Behaviour	-.26	(.01)	.00	(-.01)	-.13	(-.13)	-.15	(-.11)	-.16	(.11)	-.23	(-.12)
	Social Support	-.01	(.34)	.20	(.08)	.26	(.05)	.39	(.17)	.10	(-.11)	.48	(-.08)
	Positive Feedback	.22	(-.10)	.30	(.01)	.13	(-.34*)	.13	(.00)	.10	(-.31)	.08	(-.10)

Note. ATG-T = Attraction to group-task; ATG-S = Attraction to group-social; GI-T = Group integration-task; GI-S = Group integration-social; AS-T = Athlete satisfaction-task; AS-S = Athlete satisfaction-social. Above are the standardized beta coefficients representing the relationship between athlete leadership behaviours and dependent variables. Standardized beta coefficient range from -1 to +1. The closer the beta is to +/- 1, the stronger relationship. Standardized beta coefficients not bound by parentheses represent the relationship between the frequency of the athlete leadership behaviour and the dependent variable. Standardized beta coefficient bound by parentheses represent the relationship between the effectiveness of the athlete leadership behaviour and the dependent variable. Asterisk(s) denote a significant relationship. *$p < .05$; **$p < .01$.

FIGURES

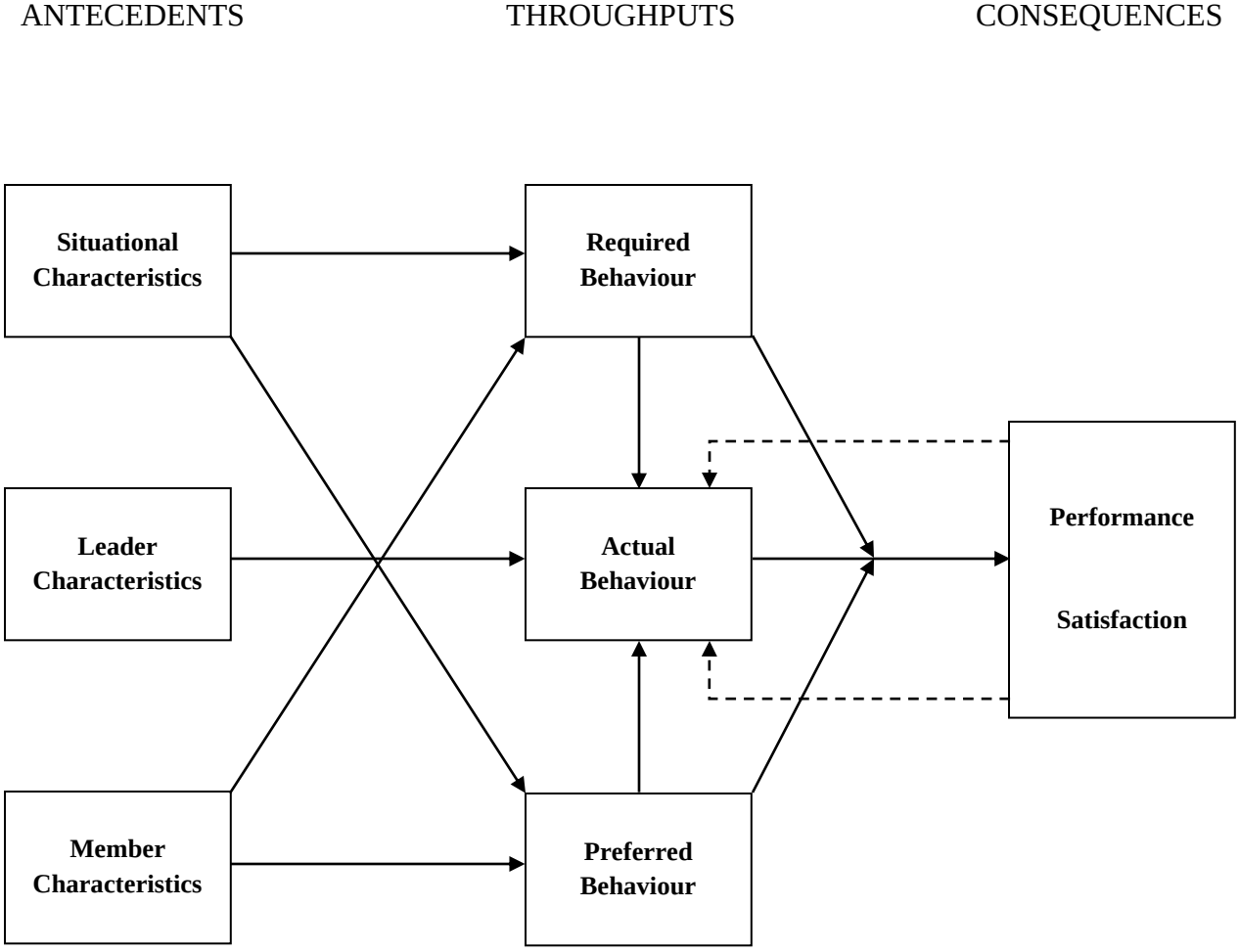

Figure 1. Multidimensional model of leadership. Adapted from "Leadership in sports" by Chelladurai, P., 2007, *Handbook of Sport Psychology*, *3*, 113-135.

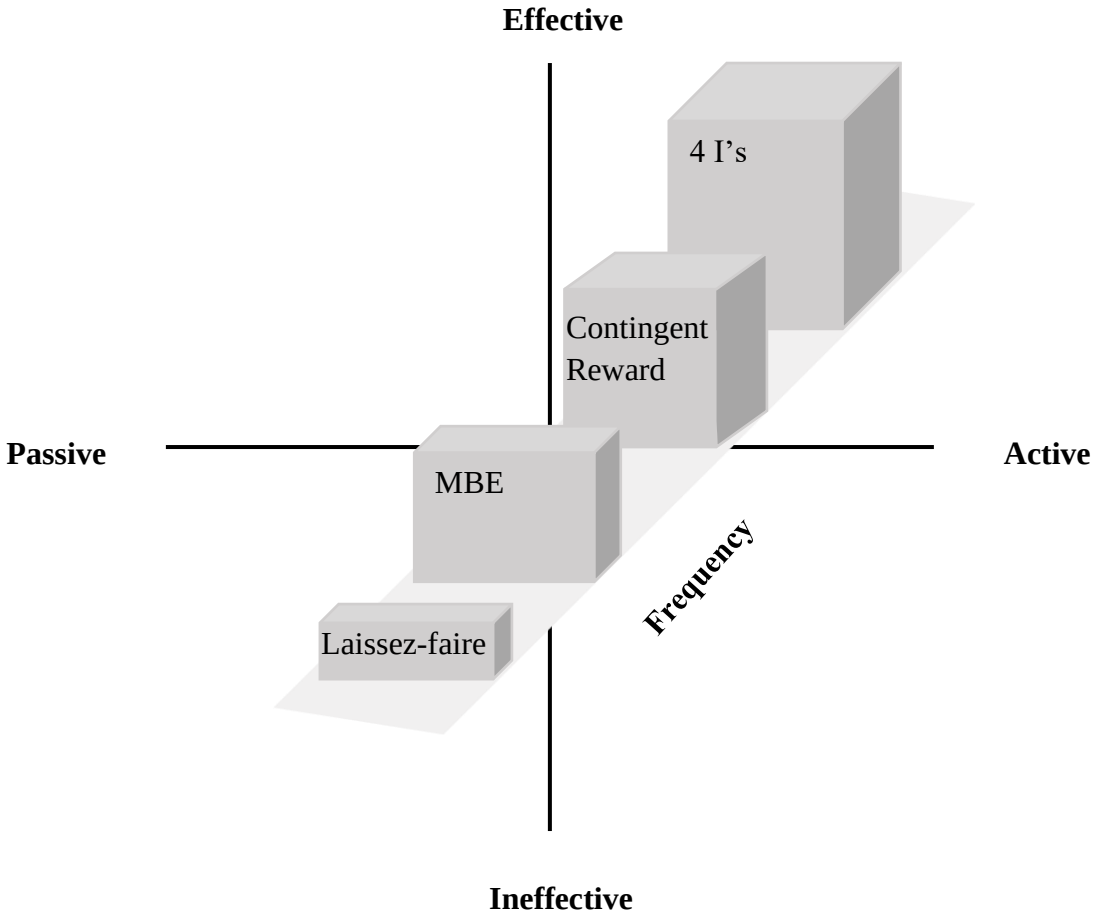

Figure 2. Full range model of leadership. Adapted from "Is there universality in the full range model of leadership?" by Bass, B. M., 1996, *International Journal of Public Administration, 19,* 731-761.

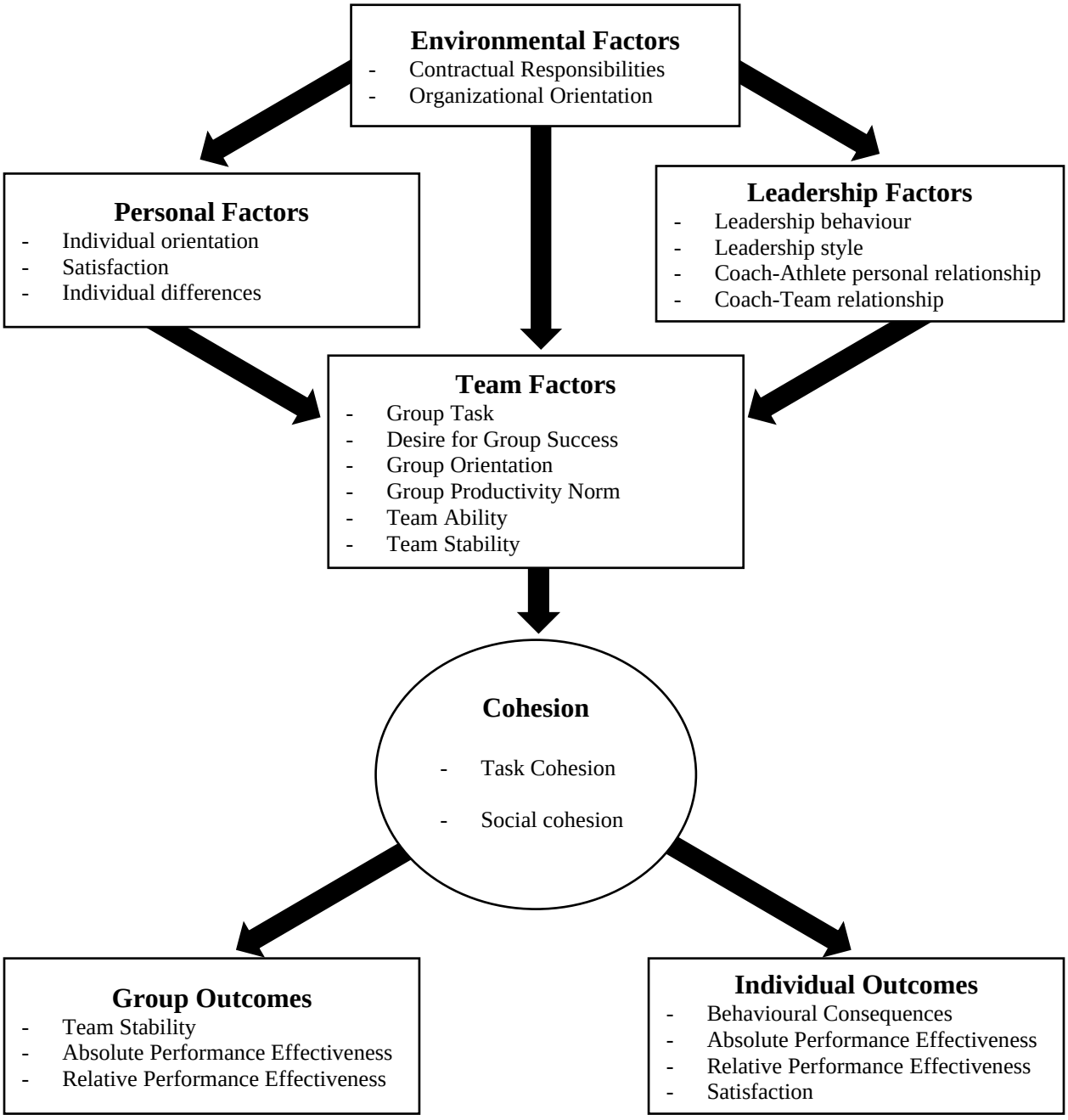

Figure 3. A conceptual model of group cohesion in sport. Adapted from "Cohesiveness in Sport Groups: Interpretations and Considerations" by A. V. Carron, 1982, *Journal of Sport Psychology, 4,* 123-138.

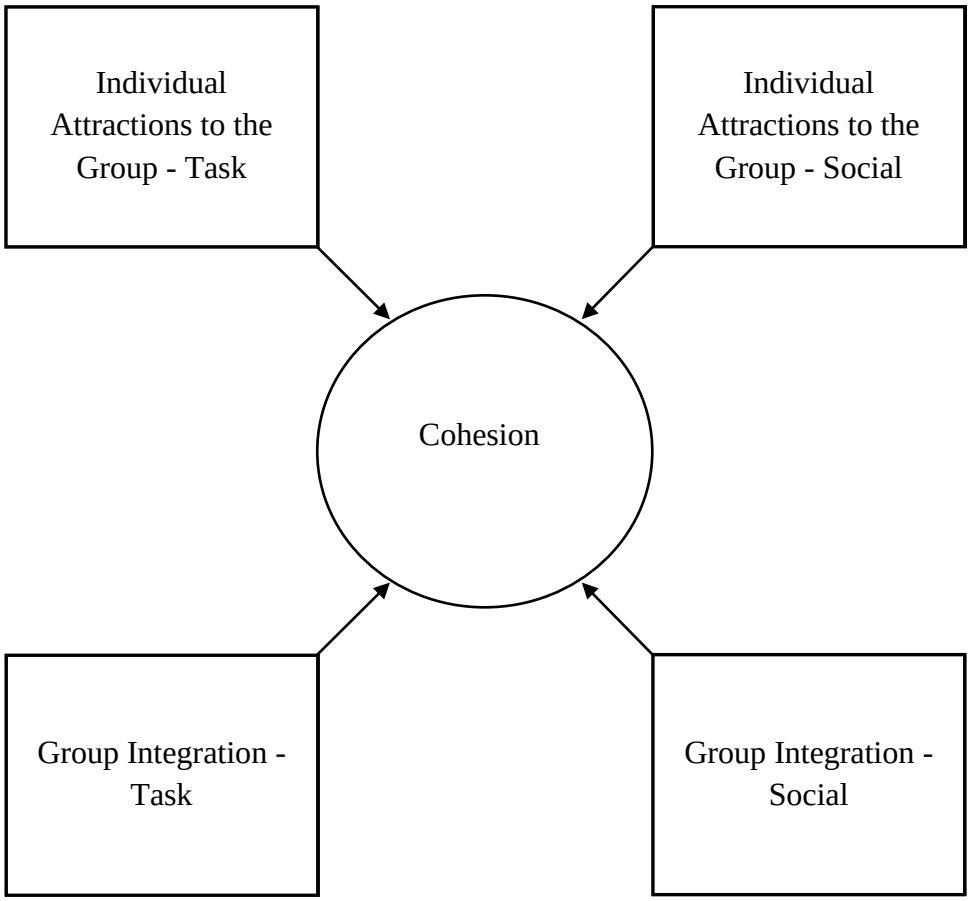

Figure 4. A framework of group cohesion in sport. Adapted from "The development of an instrument to assess cohesion in sport teams: The Group Environment Questionnaire" by A. V. Carron, L. R. Brawley, & N. W. Widmeyer, 1985, *Journal of Sport Psychology, 7*, 244-266.

APPENDIX A

Athlete Demographics

Tell us a little bit about yourself by answering the questions below.

Age: ____ years.

Gender: _____

Year of program (circle one): 1 2 3 4+ Graduate

What university sport do you currently participate in? _____

How many years have you been playing the sport written above? _____ years.

How many years have you played with this team (including the current season)? _____ years.

Do you normally start in games/competitions? (circle one): Yes No

Please read the two definitions below. Please select the option that describes which option reflects your current status on the team. If neither apply to you, please leave it blank and proceed to the next page.

Formal Leader ☐	**Informal Leader** ☐
A formal leader can be viewed as an individual who has been prescribed that position by the organization or group.	An informal leader emerges as a result of the interactions that occur among group members. (e.g., team clown, social planner)
If you have selected this option, please circle the option below that applies to your formal leadership position.	
Captain Assistant Captain	

APPENDIX B

For each statement regarding your athlete leader(s), please rate them on two separate qualities. The first one you will assess *how often* they perform the leadership behaviour <u>AND</u> on the second you will assess *how effective* they are at performing the behaviour. Both are scored on a 1 to 5 scale.

1	**2**	**3**	**4**	**5**
Never	Seldom 25% of the time	Occasionally 50% of the time	Often 75% of the time	Always

1	**2**	**3**	**4**	**5**
Not effective		Moderately effective		Extremely effective

My athlete leader(s)…

1. Sees to it that every athlete is working to their capacity	1	2	3	4	5	
	Never				Always	
	1	2	3	4	5	
	Not effective				Extremely effective	
2. Points out each athlete's strengths and weaknesses	1	2	3	4	5	
	Never				Always	
	1	2	3	4	5	
	Not effective				Extremely effective	
3. Encourages athletes to make suggestions for ways of conducing practices	1	2	3	4	5	
	Never				Always	
	1	2	3	4	5	
	Not effective				Extremely effective	
4. Refuses to compromise a point	1	2	3	4	5	
	Never				Always	
	1	2	3	4	5	
	Not effective				Extremely effective	
5. Encourages the athlete to confide in them	1	2	3	4	5	
	Never				Always	
	1	2	3	4	5	
	Not effective				Extremely effective	
6. Explains to each athlete the techniques and tactics of the sport	1	2	3	4	5	
	Never				Always	
	1	2	3	4	5	
	Not effective				Extremely effective	

1 Never	2 Seldom 25% of the time	3 Occasionally 50% of the time	4 Often 75% of the time	5 Always

1 Not effective	2	3 Moderately effective	4	5 Extremely effective

My athlete leader(s)…

7. Gives specific instructions to each athlete's contribution fits into the total picture	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective
8. Lets the group set its own goals	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective
9. Keeps to themselves	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective
10. Encourages close and informal relations with athletes	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective
11. Pays special attention to correcting athlete's mistakes	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective
12. Sees to it that the efforts are coordinated	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective
13. Lets the athletes try their own way even if the make mistakes	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective

1 Never	2 Seldom 25% of the time	3 Occasionally 50% of the time	4 Often 75% of the time	5 Always

1 Not effective	2	3 Moderately effective	4	5 Extremely effective

My athlete leader(s)…

14. Speaks in a manner not to be questioned	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective
15.Invites athletes to their house	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective
16. Makes sure that team members' roles on the team are understood	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective
17. Explains how each athlete's contribution fits into the total picture	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective
18. Asks for the opinion of the athletes on important team matters	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective
19. Helps the athletes with their personal problems	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective
20. Compliments an athlete for their performance in front of others	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective

1 Never	2 Seldom 25% of the time	3 Occasionally 50% of the time	4 Often 75% of the time	5 Always

1 Not effective	2	3 Moderately effective	4	5 Extremely effective

My athlete leader(s)…

21. Instructs every athlete individually in the skills of the sport	1	2	3	4	5	
	Never				Always	
	1	2	3	4	5	
	Not effective			Extremely effective		
22. Specifies in detail what is expected of each athlete	1	2	3	4	5	
	Never				Always	
	1	2	3	4	5	
	Not effective			Extremely effective		
23. Lets athletes work at their own speed	1	2	3	4	5	
	Never				Always	
	1	2	3	4	5	
	Not effective			Extremely effective		
24. Helps members of the group settle their conflicts	1	2	3	4	5	
	Never				Always	
	1	2	3	4	5	
	Not effective			Extremely effective		
25. Tells an athlete when they do a particularly good job	1	2	3	4	5	
	Never				Always	
	1	2	3	4	5	
	Not effective			Extremely effective		
26. Figures ahead of time on what should be done	1	2	3	4	5	
	Never				Always	
	1	2	3	4	5	
	Not effective			Extremely effective		
27. Asks for the opinion of the athletes on strategies for specific competitions	1	2	3	4	5	
	Never				Always	
	1	2	3	4	5	
	Not effective			Extremely effective		

1 Never	2 Seldom 25% of the time	3 Occasionally 50% of the time	4 Often 75% of the time	5 Always

1 Not effective	2	3 Moderately effective	4	5 Extremely effective

My athlete leader(s)…

28. Lets the athletes decide on the plays to be used in a game	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective
29. Looks out for the personal welfare of the athletes	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective
30. Sees that an athlete is rewarded for a good performance	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective
31. Explains to every athlete what they should and what they should not do	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective
32. Gets group approval on important matters before going ahead	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective
33. Works relatively independent of the athletes	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective
34. Does personal favors for the athletes	1 Never	2	3	4	5 Always
	1 Not effective	2	3	4	5 Extremely effective

1	2	3	4	5
Never	Seldom 25% of the time	Occasionally 50% of the time	Often 75% of the time	Always

1	2	3	4	5
Not effective		Moderately effective		Extremely effective

My athlete leader(s)…

35. Expresses appreciation when an athlete performs well	1	2	3	4	5	
	Never				Always	
	1	2	3	4	5	
	Not effective			Extremely effective		
36. Expects every athlete to carry out their assignment to the last detail	1	2	3	4	5	
	Never				Always	
	1	2	3	4	5	
	Not effective			Extremely effective		
37. Does not explain their actions	1	2	3	4	5	
	Never				Always	
	1	2	3	4	5	
	Not effective			Extremely effective		
38. Lets the athletes share in decision making	1	2	3	4	5	
	Never				Always	
	1	2	3	4	5	
	Not effective			Extremely effective		
39. Expresses affection they feel for their athletes	1	2	3	4	5	
	Never				Always	
	1	2	3	4	5	
	Not effective			Extremely effective		
40. Gives credit when credit is due	1	2	3	4	5	
	Never				Always	
	1	2	3	4	5	
	Not effective			Extremely effective		

APPENDIX C

For each statement regarding your athlete leader(s), please rate them on two separate qualities. The first one you will assess *how often* they perform the leadership behaviour <u>AND</u> on the second you will assess *how effective* they are at performing the behaviour. Both are scored on a 1 to 5 scale.

1	**2**	**3**	**4**	**5**
Not at all	Rarely	Occasionally	Often	All of the time

1	**2**	**3**	**4**	**5**
Not effective		Moderately effective		Extremely effective

My athlete leader(s)…

1. Recognizes that different athletes have different needs	1	2	3	4	5
	Not at all				All of the time
	1	2	3	4	5
	Not effective				Extremely effective
2. Talks in a way that makes us believe we can succeed	1	2	3	4	5
	Not at all				All of the time
	1	2	3	4	5
	Not effective				Extremely effective
3. Gets others to re-think the way they do things	1	2	3	4	5
	Not at all				All of the time
	1	2	3	4	5
	Not effective				Extremely effective
4. Encourages athletes to be team players	1	2	3	4	5
	Not at all				All of the time
	1	2	3	4	5
	Not effective				Extremely effective
5. Expects the team to achieve high standards	1	2	3	4	5
	Not at all				All of the time
	1	2	3	4	5
	Not effective				Extremely effective
6. Is a good role model for the team to follow	1	2	3	4	5
	Not at all				All of the time
	1	2	3	4	5
	Not effective				Extremely effective
7. Considers that athletes have different strengths and abilities from others	1	2	3	4	5
	Not at all				All of the time
	1	2	3	4	5
	Not effective				Extremely effective

1	2	3	4	5
Not at all	Rarely	Occasionally	Often	All of the time

1	2	3	4	5
Not effective		Moderately effective		Extremely effective

My athlete leader(s)…

8. Talks optimistically	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	
9. Challenges others to think about problems in new ways	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	
10. Gets the team to work together for the same goal	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	
11. Expects a lot from the team	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	
12. Leads by example	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	
13. Always recognized the teams' achievements	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	
14. Helps team members to develop their strengths	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	
15. Talks enthusiastically	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	

1	2	3	4	5
Not at all	Rarely	Occasionally	Often	All of the time

1	2	3	4	5
Not effective		Moderately effective		Extremely effective

My athlete leader(s)…

16. Show athletes how to look at difficulties from a new angle	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	
17. Develops a strong team attitude and spirit among athletes	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	
18. Always expects the team to do their best	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	
19. Leads by “doing” rather than simply “telling”	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	
20. Gives praise when the team does good work	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	
21. Treats each team member as an individual	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	
22. Expresses confidence that goals will be achieved	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	

1	2	3	4	5
Not at all	Rarely	Occasionally	Often	All of the time

1	2	3	4	5
Not effective		Moderately effective		Extremely effective

My athlete leader(s)…

23. Tries to help the team work out how to solve problems	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	
24. Will not settle for second best	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	
25. Leads from the front whenever they can	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	
26. Praises athletes when they show improvement	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	
27. Gives athletes special recognition when they do very good work	1	2	3	4	5	
	Not at all				All of the time	
	1	2	3	4	5	
	Not effective				Extremely effective	

APPENDIX D

The following questions are designed to assess your feelings about <u>YOUR PERSONAL INVOLVEMENT</u> with this team. Please <u>CIRCLE</u> a number from 1 to 9 to indicate your level of agreement with each of the statements.

1 Strongly Disagree	2	3	4	5 Neither Agree nor Disagree	6	7	8	9 Strongly Agree

1. I enjoy being a part of the social activities of this team.	1 2 3 4 5 6 7 8 9 Strongly Disagree Strongly Agree
2. I'm happy with the amount of playing time I get.	1 2 3 4 5 6 7 8 9 Strongly Disagree Strongly Agree
3. I am going to miss the members of this team when the season ends.	1 2 3 4 5 6 7 8 9 Strongly Disagree Strongly Agree
4. I'm happy with my team's level of desire to win.	1 2 3 4 5 6 7 8 9 Strongly Disagree Strongly Agree
5. Some of my best friends are on this team.	1 2 3 4 5 6 7 8 9 Strongly Disagree Strongly Agree
6. This team gives me enough opportunities to improve my personal performance.	1 2 3 4 5 6 7 8 9 Strongly Disagree Strongly Agree
7. I enjoy team parties more than other parties.	1 2 3 4 5 6 7 8 9 Strongly Disagree Strongly Agree
8. I like the style of play on this team.	1 2 3 4 5 6 7 8 9 Strongly Disagree Strongly Agree
9. For me, this team is one of the most important social groups to which I belong.	1 2 3 4 5 6 7 8 9 Strongly Disagree Strongly Agree

The following questions are designed to assess your perceptions of YOUR TEAM AS A WHOLE. Please CIRCLE a number from 1 to 9 that best indicates your level of agreement with each of the statements.

1 Strongly Disagree	2	3	4	5 Neither Agree nor Disagree	6	7	8	9 Strongly Agree

10. Our team is united in trying to reach its goals for performance.

1 2 3 4 5 6 7 8 9

Strongly Disagree Strongly Agree

11. Members of our team would rather go out together than go out on their own.

1 2 3 4 5 6 7 8 9

Strongly Disagree Strongly Agree

12. We all take responsibility for any loss or poor performance by our team.

1 2 3 4 5 6 7 8 9

Strongly Disagree Strongly Agree

13. Our team members often party together.

1 2 3 4 5 6 7 8 9

Strongly Disagree Strongly Agree

14. Our team members have consistent aspirations for the team's performance

1 2 3 4 5 6 7 8 9

Strongly Disagree Strongly Agree

15. Our team would like to spend time together in the off season.

1 2 3 4 5 6 7 8 9

Strongly Disagree Strongly Agree

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

1 2 3 4 5 6 7 8 9

Strongly Disagree Strongly Agree

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

1 2 3 4 5 6 7 8 9

Strongly Disagree Strongly Agree

1	2	3	4	5	6	7	8	9
Strongly Disagree				Neither Agree nor Disagree				Strongly Agree

18. Our team members communicate freely about each athlete's responsibilities during competition and practice.

1 2 3 4 5 6 7 8 9

Strongly Disagree Strongly Agree

APPENDIX E

The following questions are designed to assess your feelings about your personal satisfaction with this team. Please CIRCLE a number from 1 to 7 to indicate your level of satisfaction with each of the statements.

1 Not at all Satisfied	2	3	4 Moderately Satisfied	5	6	7 Extremely Satisfied

I am satisfied with....

1. how the team works (worked) to be the best.

1 2 3 4 5 6 7
Not at all Satisfied — Extremely Satisfied

2. my social status on the team.

1 2 3 4 5 6 7
Not at all Satisfied — Extremely Satisfied

3. the athlete leader's choice of plays during competitions.

1 2 3 4 5 6 7
Not at all Satisfied — Extremely Satisfied

4. the degree to which I do (did) my best for the team.

1 2 3 4 5 6 7
Not at all Satisfied — Extremely Satisfied

5. the degree to which I have reached (reached) my performance goals during the season.

1 2 3 4 5 6 7
Not at all Satisfied — Extremely Satisfied

1 Not at all Satisfied	2	3	4 Moderately Satisfied	5	6	7 Extremely Satisfied

6. the degree to which my abilities are (were) used.	1 2 3 4 5 6 7	
	Not at all Satisfied	Extremely Satisfied
7. the extent to which all team members are (were) ethical.	1 2 3 4 5 6 7	
	Not at all Satisfied	Extremely Satisfied
8. the extent to which teammates provide (provided) me with instruction.	1 2 3 4 5 6 7	
	Not at all Satisfied	Extremely Satisfied
9. the recognition I receive (received) from my athlete leader.	1 2 3 4 5 6 7	
	Not at all Satisfied	Extremely Satisfied
10. the team's win/loss record this season.	1 2 3 4 5 6 7	
	Not at all Satisfied	Extremely Satisfied
11. the training I receive (received) from the coach during the season.	1 2 3 4 5 6 7	
	Not at all Satisfied	Extremely Satisfied
12. my dedication during practices.	1 2 3 4 5 6 7	
	Not at all Satisfied	Extremely Satisfied
13. my teammates' sense of fair play.	1 2 3 4 5 6 7	
	Not at all Satisfied	Extremely Satisfied
14. the degree to which teammates share (shared) the same goal.	1 2 3 4 5 6 7	
	Not at all Satisfied	Extremely Satisfied

1 Not at all Satisfied	2	3	4 Moderately Satisfied	5	6	7 Extremely Satisfied

15. the friendliness of the athlete leader towards me.

1 2 3 4 5 6 7

Not at all Satisfied Extremely Satisfied

16. the guidance I receive (received) from my teammates.

1 2 3 4 5 6 7

Not at all Satisfied Extremely Satisfied

17. the improvement in my performance over the previous season.

1 2 3 4 5 6 7

Not at all Satisfied Extremely Satisfied

18. the instruction I have received from the athlete leader this season.

1 2 3 4 5 6 7

Not at all Satisfied Extremely Satisfied

19. the level to which my talents are (were) employed.

1 2 3 4 5 6 7

Not at all Satisfied Extremely Satisfied

20. the role I play (played) in the social life of the team

1 2 3 4 5 6 7

Not at all Satisfied Extremely Satisfied

21. the tactics used during games.

1 2 3 4 5 6 7

Not at all Satisfied Extremely Satisfied

22. the team's overall performance this season

1 2 3 4 5 6 7

Not at all Satisfied Extremely Satisfied

23. athlete leader’s choice of strategies during games.

1 2 3 4 5 6 7

Not at all Satisfied Extremely Satisfied

1 Not at all Satisfied	2	3	4 Moderately Satisfied	5	6	7 Extremely Satisfied

24. my enthusiasm during competitions	1 2 3 4 5 6 7 Not at all Satisfied Extremely Satisfied	
25. my teammates' 'sportsmanlike' behavior.	1 2 3 4 5 6 7 Not at all Satisfied Extremely Satisfied	
26. team member's dedication to work together toward team goals.	1 2 3 4 5 6 7 Not at all Satisfied Extremely Satisfied	
27. the athlete leader's teaching of the tactics and techniques of my position.	1 2 3 4 5 6 7 Not at all Satisfied Extremely Satisfied	
28. the constructive feedback I receive (received) from my teammates	1 2 3 4 5 6 7 Not at all Satisfied Extremely Satisfied	
29. the degree to which my teammates accept (accepted) me on a social level	1 2 3 4 5 6 7 Not at all Satisfied Extremely Satisfied	
30. the extent to which my role matches (matched) my potential.	1 2 3 4 5 6 7 Not at all Satisfied Extremely Satisfied	
31. the extent to which the team is meeting (has met) its goals for the season.	1 2 3 4 5 6 7 Not at all Satisfied Extremely Satisfied	

1 Not at all Satisfied	2	3	4 Moderately Satisfied	5	6	7 Extremely Satisfied

32. the improvement in my skill level.	1 2 3 4 5 6 7 Not at all Satisfied Extremely Satisfied
33. the level of appreciation my athlete leader shows (showed) when I do (did) well.	1 2 3 4 5 6 7 Not at all Satisfied Extremely Satisfied
34. how my athlete leader makes (made) adjustments during competitions.	1 2 3 4 5 6 7 Not at all Satisfied Extremely Satisfied
35. my athlete leader's loyalty towards me.	1 2 3 4 5 6 7 Not at all Satisfied Extremely Satisfied
36. my commitment to the team.	1 2 3 4 5 6 7 Not at all Satisfied Extremely Satisfied
37. the amount of time I play (played) during competitions.	1 2 3 4 5 6 7 Not at all Satisfied Extremely Satisfied
38. the extent to which teammates play (played) as a team.	1 2 3 4 5 6 7 Not at all Satisfied Extremely Satisfied
39. My athlete leader's game plans.	1 2 3 4 5 6 7 Not at all Satisfied Extremely Satisfied
40. the degree to which my role on the team matches (matched) my preferred role	1 2 3 4 5 6 7 Not at all Satisfied Extremely Satisfied
41. the extent to which the athlete leader is (was) behind me.	1 2 3 4 5 6 7 Not at all Satisfied Extremely Satisfied

1 Not at all Satisfied	2	3	4 Moderately Satisfied	5	6	7 Extremely Satisfied

42. the manner in which athlete leader combines (combined) the available talent.	1 2 3 4 5 6 7 Not at all Satisfied Extremely Satisfied	

APPENDIX F

Recruitment Script for Coaches

Hello [coach's name],

My name is Mitchell McCaughan and I am a second year Master of Human Kinetics Student under the supervision of Dr. Todd Loughead. I am currently in the process of recruiting for a research project that I am conducting for my Master's thesis. In short, my study will examine the relationships between athlete leaders' behaviours, cohesion, and athlete satisfaction. If you are able to, I would appreciate access to your team in order to recruit your athletes to participate in the study. I would require about 25 minutes of your time in order to give the athletes enough time to receive instructions and complete the questionnaire package.

If you have any questions or concerns about the study, feel free to contact me at mccaughm@uwindsor.ca or at 519-253- 3000 ext. 4850.

Thank you,

Mitch McCaughan

APPENDIX G

Athlete Instructions Script

Hello everyone,

I would like to start by thanking your coach [coach's name] for letting me come in to talk to you all. My name is Mitchell McCaughan and I am a second year Master of Human Kinetics student in the Applied Human Performance stream under the supervision of Dr. Todd Loughead. My specialization is in sport psychology, and more specifically, athlete leadership and group dynamics. Right now, I am doing my thesis study looking at how athlete leadership behaviours relate to team cohesion and athlete satisfaction. I will be looking to see if cohesive teams and satisfied athletes are more commonly associated in teams that have athlete leaders that perform specific leadership behaviours. I have handed out questionnaire packages inside an open envelope to you all. If you would like to participate in the study, please read over the Letter of Information and complete the questionnaire package independently. It should take about 25 minutes to complete. Once complete please put it back into the envelope and seal it. In order to maintain unidentifiable please do not leave any identifying marks or information on the questionnaires or envelops. By completing the questionnaire package, you are implying that you consent to participate in the study. If you feel uncomfortable answering any questions, you are not forced to answer them. If you do not wish to participate in the study you can return the questionnaire package blank in the unsealed envelope. If you wish to withdraw completing the questionnaire package you can stop at any time, and your questionnaire package can be returned in an unsealed envelop and will be shredded. Once you submit a sealed envelope with the questionnaire package inside, withdrawing from the study is not possible since all

submissions will be anonymous. You also have received a separate ballot; you may fill out a ballot with contact information for a draw that is for one of eleven $10 gift cards for select stores. This contact information will not be associated with your questionnaire package submission. The draw will take place after all data collection is complete. Winners will be emailed. Results of the study will be used for academic publishing and presentations. It will also be posted on the website listed on the Letter of Information. If you have any questions you can ask them now or throughout the time it takes to fill out the questionnaire package.

APPENDIX H

LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: Comparing athletes' perceptions of leadership behaviour frequency and perceptions of effectiveness in relation to team cohesion and athlete satisfaction

You are asked to participate in a research study conducted by Mitch McCaughan (Master's candidate) and Todd Loughead (Ph.D., Faculty Supervisor), from the Department of Kinesiology at the University of Windsor. The results of this study will contribute to the completion of a Master's level thesis dissertation. This study has received clearance from the University of Windsor Research Ethics Board at the University of Windsor**.**

If you have any questions or concerns about the research, please feel to contact Mitch McCaughan at 519-253- 3000 ext. 4850 ormccaughm@uwindsor.ca, or Dr. Todd Loughead at 519-253- 3000 ext. 2450 or loughead@uwindsor.ca.

PURPOSE OF THE STUDY

The purpose of this study is to determine if there are relationships between athlete leaders' behaviours, cohesion and athlete satisfaction.

PROCEDURES

If you volunteer to participate in this study, you will be asked to complete a questionnaire package regarding your perceptions of your athlete leaders' behaviours. This questionnaire package should take approximately 25 minutes to complete.

POTENTIAL RISKS AND DISCOMFORTS

Every effort has and will be made to minimize any potential risks and discomforts; however, there may be potential emotional or social discomforts associated with participation in this study. This includes the current or past enrolment in a course in which Mitchell McCaughan is the Graduate Assistant, or current or past enrolment in Dr. Longhead's courses.

As previously mentioned, every effort has and will be made to minimize any potential risks and discomforts. This includes, collecting unidentifiable data, providing an envelope for all documents to be returned in, and separating participants if possible, to provide privacy when completing questionnaires. Additionally, we ask that you do not discuss your responses with teammates, coaches, or others during or following the completion of your survey.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

Through the completion of the questionnaire and the associated process of reflection that it will entail, you may gain insight into understanding more about yourself and how to acknowledge leadership potential within others during interaction providing opportunity for improved relationships.

Results of the current study may help researchers, and athletes better understand how athlete leaders influence their peers. From a theoretical perspective, it is hoped that this information will encourage future research examining athlete leadership behaviours from every perspective. From an applied perspective, it is hoped that a deeper understanding of how effective leadership behaviours are will augment applied practitioners' work with athlete leaders.

COMPENSATION FOR PARTICIPATION

After completing the surveys, each participant is allowed one entry into a draw for one of 11 gift cards worth $10 to select stores and/or restaurants**.**

CONFIDENTIALITY

Any information that is obtained in connection with this study will remain confidential. All data will be kept on a password-protected

USB drive in a locked office, only accessible by the research team. Data will be kept indefinitely and may be used for future studies. In addition, all data will be aggregated when included in academic presentations or publications. This means that no individual data will be presented in isolation.

PARTICIPATION AND WITHDRAWAL

Participation in this study is voluntary. If you volunteer to participate in this study, you may withdraw your participation at any time (prior to or during completion of the questionnaire) without penalty of any kind. If you choose not to participate, please leave the package blank and return it in the envelope. If you choose to participate, you will not be able to withdraw once you have handed in your questionnaire. You may also refuse to answer any questions and still remain in the study. Consent will be implied with submission of a completed questionnaire package.

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 Kinesiology Research website *by 2020/12/18* (https://scholar.uwindsor.ca/research-result-summaries/). If you have any additional concerns or questions, you can contact the investigators at the phone numbers or emails 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

VITA AUCTORIS

NAME: Mitchell D. McCaughan

PLACE OF BIRTH: Guelph, ON

YEAR OF BIRTH: 1993

EDUCATION: Guelph Collegiate Vocational Institute, Guelph, ON, 2012

Laurentian University, B.A. in Sport Psychology, Sudbury, ON, 2016

University of Windsor, M.H.K., Windsor, ON, 2020