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Coaches' Impact on Youth Athletes' Intentions to Continue Sport Participation: The Mediation Influence of the Coach-Athlete Relationship

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COACHES' IMPACT ON YOUTH ATHLETES' INTENTIONS TO CONTINUE
SPORT PARTICIPATION: THE MEDIATIONAL INFLUENCE OF THE COACH-
ATHLETE RELATIONSHIP

by

MEREDITH M. WEKESSE

(Under the Direction of Brandonn Harris)

ABSTRACT

Approximately 60 million youth participate in sports each year, however about 70% of these youth athletes drop out of sport by age 13 despite the numerous positive benefits of sport participation (National Alliance for Youth Sports, 2016; National Council for Youth Sports, 2008). Self-determination theory is a framework that has been utilized to investigate athletes' motivations for behaviors including sport persistence and suggests that the coach can be an influence on such motivations (Rocchi, Pelletier, & Desmarais, 2017; Ryan & Deci, 2000). Coach-athlete relationship quality and interpersonal coaching behaviors that emphasize the satisfaction of basic needs have been found to be positively associated (Felton & Jowett, 2013; Jowett, et al., 2017; Riley & Smith, 2011). Further, interpersonal coaching behaviors that satisfy athletes' basic psychological needs have been shown to impact sport persistence (Curran, Hill, Hall, & Jowett, 2014; Curran, Hill, Ntoumanis, Hall, & Jowett, 2016). A positive coach-athlete relationship has also been found to be related to higher levels of sport persistence (Gardner, Magee, & Vella, 2016; Rottensteiner, Konttinen, & Laakso, 2015). The purpose of the current study was to determine if the quality of the coach-athlete relationship mediates the relationship between interpersonal coaching behaviors and intentions to continue sport participation. A sample of 125 youth athletes ages 11 to 16 were recruited from organized sports teams in Nebraska and southeast Georgia. No significant mediations could be established. Significant

positive relationships were shown among supportive coach interpersonal behaviors and coach-athlete relationship quality while negative relationships were demonstrated among thwarting coach interpersonal behaviors and coach-athlete relationship quality. A significant linear regression was found that predicted intentions based on competence-supportive coaching behaviors ($F(1,123) = 5.373, p = .022, \text{adjusted } R^2 = .034$). The results supported that coaches' behaviors can impact coach-athlete relationship quality and intentions to continue sport participation in youth athletes.

INDEX WORDS: Youth sport, Coaching, Self-determination theory, Sport psychology

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B.S., Truman State University, 2017

A Thesis Submitted to the Graduate Faculty of Georgia Southern University in Partial
Fulfillment of the Requirements for the Degree

MASTER OF SCIENCE

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DEDICATION

I dedicate this thesis to my friends and family. They have been a constant source of support and love throughout my journey at Georgia Southern University. I would like to give a special shout-out to my cohort and Chris Tomczyk for their inspiration, motivation, encouragement, and guidance along the way.

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CHAPTER 1

INTRODUCTION

Approximately 60 million youth ages six to eighteen participate in organized sports each year (National Council of Youth Sports, 2008). There are several positive consequences associated with participation in organized youth sport including positive youth development, increased physical fitness and health benefits, positive social relationships, interpersonal skills, and emotional growth and development (Côté & Fraser-Thomas, 2007; Fraser-Thomas, Côté, Deakin, 2005; Zarrett et al., 2008). Despite the numerous benefits of youth sport participation, around 70 percent of youth athletes drop out of sport by age 13 (National Alliance for Youth Sports, 2016). Attrition can be difficult to measure as it necessitates longitudinal research to track participation rates over time; however, another way to measure attrition is by examining one's intentions to continue sport participation, as behavioral intentions have been shown to predict attrition in an adolescent sport population (Gardner, Vella, & Magee, 2017).

Many studies have investigated youth sport adherence and attrition using self-determination theory (SDT; Curran, Hill, Hall, & Jowett, 2014, 2015; Curran, Hill, Ntoumanis, Hall, & Jowett, 2016), which involves the study of human motivation and the social processes and environments that promote healthy psychological development (Deci & Ryan, 1985; Ryan & Deci, 2000). Social environments have a large impact on individuals and play a key role in sustaining optimal functioning, social development, and facilitating intrinsic motivation via fulfillment of the three basic psychological needs (Ryan & Deci, 2000).

SDT addresses three basic psychological needs including competence, autonomy, and relatedness. Competence is the perceived ability and knowledge over one's behavior. Autonomy is the freedom to make one's own choices and act according to one's own volition, and

relatedness is feeling connected to others. One's social environment is an important factor in the satisfaction and/or thwarting of an individual's basic psychological needs (Ryan & Deci, 2000). If one's basic psychological needs are fulfilled, the individual will have greater internalization and integration leading to more self-determined motivation and behaviors; however, the thwarting of basic needs leads to more extrinsic forms of motivation and lesser well-being (Ryan & Deci, 2000). Since fulfillment of basic needs leads to more self-determined motivation, it would be expected that when an individual's basic needs are met, he/she will be more motivated to continue sport participation.

Various SDT constructs have been studied with regards to attrition and sport persistence, including those related to the antecedents of motivation. A systematic review of dropout from organized youth sports found that one of the major factors influencing attrition rates was decreased perceptions of competence (Crane & Temple, 2013). Youth athletes exhibiting higher levels of perceived competence reported more autonomous motivation (i.e. intrinsic motivation, identified regulation, integrated regulation), and these scores predicted sport persistence one year later (Rottensteiner, Tolvanen, Laakso, & Kontinnen, 2015). Autonomy-supportive environments have demonstrated more athlete engagement (Fenton, Duda, & Barrett, 2016) as well as closeness and connectedness to teammates (Jõesaar, Hein, & Hagger, 2012).

There are several stakeholders invested in the youth sport experience including athletes, teammates, coaches, parents, siblings, and sport psychology practitioners. Each of these stakeholders has the capacity to impact the social context and environment. The coach in particular has been identified as a stakeholder that interacts with and develops relationships with youth athletes, and a coach's behavioral approach to working with youth athletes can affect a child's sport experience (Blom, Visek, & Harris, 2013). Indeed, coaching behaviors influence

many parts of the sport experience including athletes' self-esteem, motivation, attitudes, relationships, skill development, and sport attrition (Smith & Smoll, 2017). More specifically, Rocchi, Pelletier, and Desmarais (2017) identified six dimensions of a coach's interpersonal behaviors that can influence athletes' basic psychological needs including those that are autonomy-supportive (AS), competence-supportive (CS), relatedness-supportive (RS), autonomy-thwarting (AT), competence-thwarting (CT), and relatedness-thwarting (RT). Mageau and Vallerand's (2003) motivational model of the coach-athlete relationship also highlight factors that influence coaching behaviors including a coach's personal orientation (autonomy supportive or controlling), the coaching context, and perceptions of athletes' motivation and behavior. These coaching behaviors are believed to impact an athlete's perception of autonomy, competence, and relatedness, which then influence their motivation levels and type.

Vissek et al. (2015) cited positive coaching as one of the main determinants of fun in youth sports contributing to enjoyment and youths' intentions to continue in sport. Some positive coaching attributes include being easy to talk to, treating players with respect, and encouraging the team. Positive and supportive relationships with adults have been linked to higher youth attendance and engagement in sport settings (Roth & Brooks-Gunn, 2016). Thus, the relationship that the coach has with their athletes appears to be critical to the fulfillment of autonomy, competence, and relatedness in youth athletes as well as influencing more self-determined motivation and sport persistence.

More specifically, the coach-athlete relationship has been referred to as "a situation in which a coach's and an athlete's cognitions, feelings, and behaviors are mutually and causally interrelated relationships," (Jowett & Poczwardowski, 2007, p. 4). The quality of this relationship is quantified by *commitment* which is the coach or athlete's intention to maintain their athletic

relationship over time; *closeness* which is being able to trust one another and feeling cared for, valued, and respected; and *complementarity* or the extent to which behaviors are reciprocal and co-operative (Jowett & Ntoumanis, 2004; Jowett & Poczwardowski, 2007). Increased perceptions of these constructs indicate a more favorable perception of the coach-athlete relationship.

While the fulfillment of basic psychological needs through coaching behaviors, the coach-athlete relationship, and sport persistence are each vital aspects of youth sport, the associations among these areas have important implications. The quality of the coach-athlete relationship and interpersonal coaching behaviors that emphasize the satisfaction of basic needs have been found to be positively associated among one another (Felton & Jowett, 2013; Jowett, Adie, Bartholomew, Yang, Gustafsson, Lopez-Jiménez, 2017; Riley & Smith, 2011). The coach-athlete relationship has also been found to be related to sport persistence through the identification of social profiles, where profiles that included high levels of coach-athlete relationship quality yielded the greatest levels of continued sport participation or intentions to continue (Gardner, Magee, & Vella, 2016; Rottensteiner, Kontinen, & Laakso, 2015). Interpersonal coaching behaviors have also been shown to impact sport persistence as a product of coaches' motivational styles (Curran, Hill, Hall, & Jowett, 2014; Curran, Hill, Ntoumanis, Hall, & Jowett, 2016). More specifically, autonomy supportive motivational styles were associated with basic need satisfaction and predicted sport engagement whereas controlling motivational styles thwarted basic needs and predicted disaffection. Coach-created motivational climates also impacted sport engagement. Further, mastery climates were positively associated with higher engagement while performance climates were associated with lower levels of athlete engagement (Curran, Hill, Hall, & Jowett, 2015).

The impact of interpersonal coaching behaviors on basic need satisfaction, the coach-athlete relationship, and intentions to continue sport participation have been examined independently and are well-understood. However, these variables have not been examined collectively to date. While the coach-athlete relationship and basic need satisfaction have been studied collectively, the direction of this relationship has not been established unequivocally. Some researchers have investigated the ways in which the coach-athlete relationship impacts basic needs satisfaction (Felton & Jowett, 2013; Riley & Smith, 2011), yet no studies have examined the way in which interpersonal coaching behaviors impact basic need satisfaction to predict the quality of the coach-athlete relationship (Choi, Cho, & Huh, 2013). The coach-athlete relationship, intentions (Gardner, Magee, & Vella, 2016), and sport persistence (Rottensteiner, Kontinnen, & Laakso, 2015) have been examined collectively with other variables through the identification of social profiles; however, coach-athlete relationship quality and intentions to continue sport participation have not been examined through a direct relationship. Further, coaching behaviors have been examined to predict engagement and disaffection in sport (Curran, Hill, Hall, & Jowett, 2014; Curran, Hill, Ntoumanis, Hall, & Jowett, 2016), yet interpersonal coaching behaviors that satisfy an athlete's basic psychological needs have not been directly associated with intentions to continue sport participation.

Therefore, the purpose of the present study is to examine these relationships through two mediation models linking the six interpersonal coaching behaviors grounded in the self-determination theory framework, the quality of the coach-athlete relationship, and intentions to continue sport participation within the youth population (see Figures 1 and 2). It is hypothesized that perceptions of the quality of the coach-athlete relationship will mediate the relationship between supportive coach interpersonal behaviors and intentions to continue sport participation

in youth athletes. Further, it is hypothesized that perceptions of the quality of the coach-athlete relationship will mediate the relationship between thwarting coach interpersonal behaviors and intentions to continue sport participation in youth athletes.

CHAPTER 2 METHODS

Participants

The sample consisted of 125 athletes ranging from 11 to 16 years of age ($M = 13.62$, $SD = 1.58$). To be eligible for participation, athletes were required to be between the ages of 11 and 16 while currently participating in an organized sport. In total, there were 132 participants who completed the measures, yet seven were removed prior to data analysis. Three participants were excluded from the study for not meeting the age or participation requirements, and four participants were excluded for inconsistent survey responses. Athletes were recruited from middle and high schools as well as club sport teams located in Nebraska and southeast Georgia. Participants represented a variety of sports including basketball ($n = 38$), baseball ($n = 22$), swimming ($n = 16$), soccer ($n = 14$), football ($n = 7$), track and field ($n = 7$), cheer ($n = 5$), tennis ($n = 4$), wrestling ($n = 4$), volleyball ($n = 3$), softball ($n = 2$), diving ($n = 1$), and golf ($n = 1$), with one participant declining to answer. The gender distribution was relatively even with 53.6% ($n = 67$) of the athletes being male while 46.4% ($n = 58$) were female. Most participants identified as non-Hispanic ($n = 116$) with seven identifying as Hispanic and two electing not to answer. The majority of participants were White or Caucasian ($n = 81$) with other races including Black or African American ($n = 29$), Asian ($n = 1$), American Indian or Alaska Native ($n = 1$), multiple races/biracial ($n = 9$), while four participants declined to answer. The amount of time participants had spent playing their respective sports ranged from less than one month to 14 years of participation ($M = 5.03$ years, $SD = 3.33$). The amount of time athletes spent with their current coach ranged from less than one month to 84 months ($M = 21.25$ months, $SD = 19.55$).

Instrumentation

Demographic questionnaire. A demographic questionnaire was given to guardians along with consent forms to obtain information regarding participants' age, ethnicity, race, gender identity, sport type, years of sport experience, and months spent playing their sport with their current coach (see Appendix B). Guardians completed the demographics questionnaire for their child.

Coach-athlete relationship. The Coach-Athlete Relationship Questionnaire (CART-Q; Jowett & Ntoumanis, 2004) was utilized to assess athletes' perceptions of the quality of the coach-athlete relationship (see Appendix C). The 11-item CART-Q utilizes a seven-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree) measuring three constructs. Three of the 11 items measure commitment (e.g. I feel committed to my coach); four items measure closeness (e.g. I respect my coach); and four items measure complementarity (e.g. When I am coached by my coach, I feel at ease). Scores from each subscale are averaged with higher scores indicating a more favorable perception of the coach-athlete relationship while lower scores indicate less favorable perceptions of the coach-athlete relationship. The CART-Q has demonstrated strong internal reliability for the overall scale ($\alpha = .93$) and for each of the subscales (commitment $\alpha = .82$; closeness $\alpha = .87$; complementarity $\alpha = .88$; Jowett & Ntoumanis, 2004). Further, the CART-Q has demonstrated predictive and convergent validity. Although the CART-Q was developed and validated with athletes ages 16 and older (Jowett & Ntoumanis, 2004), the scale has also been used with athletes as young as age 11 (Gardner, Magee, & Vella, 2017; Vella, Oades, & Crowe, 2013). In the current study, the Cronbach's alpha for each of the subscales demonstrated adequate reliability with commitment ($\alpha = .75$), closeness ($\alpha = .80$), and complementarity ($\alpha = .73$).

Coach interpersonal behaviors. Athletes' perceptions of coach interpersonal behaviors were assessed using the 24-item Interpersonal Behaviors Questionnaire (IBQ; Rocchi, Pelletier, Cheung, Baxter, & Beaudry, 2017). The IBQ (see Appendix D) uses a seven-point Likert-type scale ranging from 1 (do not agree at all) to 7 (completely agree) with six subscales of interpersonal behaviors including autonomy-supportive (AS; e.g. My coach gives me the freedom to make my own choices), competence-supportive (CS; e.g. My coach encourages me to improve my skills), relatedness-supportive (RS; e.g. My coach takes the time to get to know me), autonomy-thwarting (AT; e.g. My coach pressures me to do things their way), competence-thwarting (CT; e.g. My coach points out that I will likely fail), and relatedness-thwarting (RT; e.g. My coach does not care about me). Mean scores are calculated for each subscale.

The IBQ has demonstrated strong internal consistency ($\alpha > .74$) as a whole and for each of the six subscales (AS $\alpha = .88$; AT $\alpha = .88$; CS $\alpha = .82$; CT $\alpha = .84$; RS $\alpha = .87$; RT $\alpha = .89$; Rocchi, Pelletier, Cheung, Baxter, & Beaudry, 2017). The IBQ in Sport has demonstrated convergent, discriminant, and divergent validity based on average variance extracted and average shared squared variance values (Rocchi, Pelletier, & Desmarais, 2017). While the IBQ was originally developed and validated with an undergraduate population (Rocchi & Pelletier, 2016), the scale has also been used with athletes as young as age 14 (Rocchi & Pelletier, 2017).

Because the scale has not been validated with athletes as young as age 11, a pilot study was conducted to examine reliability with that age group. All subscales had acceptable measures of reliability except competence-supportive. One item was deleted from this subscale to achieve acceptable reliability. In the current study, Cronbach's alpha for each of the subscales were as follows: AS $\alpha = .81$; AT $\alpha = .68$; CS $\alpha = .69$; CT $\alpha = .62$; RS $\alpha = .79$; RT $\alpha = .62$. The RT subscale was included after item deletion which increased the Cronbach's alpha to $\alpha = .66$. While

the AT, CS, CT, and RT subscales did not reach the acceptable levels ($\alpha = .70$), all subscales were still included in analysis. Those subscales with lower Cronbach's alpha levels that approached acceptable levels could potentially be attributed to the low number of questions within each subscale (Tavakol & Dennick, 2011). While a Cronbach's alpha of .70 is indicative of acceptable reliability (Nunnally, 1978), scales with lower thresholds are sometimes used in the literature (Santos, 1999).

Intentions to continue sport participation. Intentions to continue sport participation was assessed using three questions (see Appendix E). The construction of these items is consistent with recommendations from Fishbein and Ajzen (2010) who suggested that item creation should be self-directed and consistent with behavioral criteria. In addition, respondents should circle the number that best describes their personal opinions with inventory items rated on a seven-point scale. The three questions included, "I intend to participate in this sport one year from now," "I plan to participate in this sport one year from now," and "I am determined to participate in this sport one year from now." Items are rated on a seven-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree) with the mean score calculated from the three items. Behavioral intentions have demonstrated predictive validity across many studies while scales following these guidelines have also demonstrated strong reliability ($\alpha = .98$; Fishbein & Ajzen, 2010). For the current study, Cronbach's alpha for the intentions scale was good ($\alpha = .83$).

Procedures

School districts, individual schools, and sports programs were contacted for permission to recruit participants. Next, letters of cooperation were obtained from administrators of those programs willing to participate. After the study was approved by the IRB and letters of

cooperation from each of the organizations were obtained, recruitment began. Since the target population included participants younger than 18 years of age, parental/guardian consent and child assent forms were distributed prior to data collection. Guardians were instructed to complete the consent form and demographics questionnaire. On the demographic questionnaire, guardians were prompted to respond to questions based upon their child's current sport in which they participate. If the child was participating in more than one sport at the time of data collection, guardians were instructed to respond to demographic questions by considering the sport their child spends the most time in each week. After obtaining consent, assent forms were administered to athletes along with the paper and pencil questionnaires comprised of the inventories. After assent was provided, athletes were instructed to think about the sport their guardian listed on the demographic form and respond to the questions with that coach in mind. Measures were counterbalanced to account for fatigue effects and loss of interest.

Data Analysis

After collection, data were entered into SPSS and analyzed for normality by checking for skewness and kurtosis. Normality was not achieved for all variables within the IBQ (skewness range: -10.56 to 7.06; kurtosis range: -1.56 to 19.02) which is consistent with the original (Rocchi, Pelletier, Cheung, Baxter, & Beaudry, 2017) and subsequent scale validation studies (Rocchi, Pelletier, & Desmarais, 2017). The variables of commitment, closeness, complementarity, and intentions were also skewed while closeness and intentions were kurtotic. Norris and Aroian (2004) posit that data transformation is not always needed or advisable when calculating Cronbach's alpha and Pearson's Product Moment correlations. Thus, commitment, closeness, complementarity, and intentions were not transformed. Descriptive statistics were calculated for the various measures (see Table 1). In addition, Pearson's Product Moment

correlations were calculated to examine the relationships between Interpersonal Behaviors Questionnaire subscales (autonomy-supportive, autonomy-thwarting, competence-supportive, competence-thwarting, relatedness-supportive, and relatedness-thwarting), Coach-Athlete Relationship Questionnaire subscales (closeness, commitment, and complementarity), and intentions. Relationships that were significant ($\alpha < .05$) between predictor and mediator variables, predictor and criterion variables, as well as mediator and criterion variables were to be included in mediation analysis.

In order to run a mediation analysis, the predictor variable(s) (AS, AT, CS, CT, RS, and RT subscales) must be significantly correlated with the mediation variable(s) (closeness, commitment, and complementarity subscales). Next, the mediation variable(s) must have significant correlations with the outcome variable (intentions). Last, the predictor variable(s) must be significantly correlated to the outcome variable. If these three conditions are not satisfied, then mediation analysis cannot occur. Significant relationships between predictor, mediator, and outcome variables were not achieved in the current study. Therefore, mediation analysis was not conducted. A simple linear regression analysis was run on variables that demonstrated a significant correlation with intentions to determine the influence those variables have on intentions to continue sport participation. Competence-supportive coaching behaviors served as the only predictor variable in the regression, and intentions was the criterion variable.

The first hypothesis suggested that perceptions of the quality of the coach-athlete relationship would mediate the relationship between supportive coach interpersonal behaviors and intentions to continue sport participation in youth athletes. The second hypothesis was that perceptions of the quality of the coach-athlete relationship would mediate the relationship between thwarting coach interpersonal behaviors and intentions to continue sport participation in

youth athletes. These hypotheses could not be tested due to lack of significant relationships between constructs to run a mediation analysis.

CHAPTER 3

RESULTS

Competence Support and Intentions

Descriptive statistics and correlations are presented in Tables 1 and 2, respectively. While mediation was not able to be examined, one variable was found to be significantly related to intentions. A positive, significant relationship was found between competence-supportive coaching behaviors and intentions to continue sport participation ($r = .21, p = .05$). A linear regression was calculated to predict intentions based on competence-supportive coaching behaviors. A significant regression was found ($(F(1,123) = 5.373, p = .022, \text{adjusted } R^2 = .034)$).

Coach Interpersonal Behaviors and Coach-Athlete Relationship

While only one variable in the study was significantly correlated with intentions, there were still other significant relationships between the variables. Supportive coach interpersonal behaviors were correlated with positive coach-athlete relationship quality. More specifically, autonomy-supportive coach behaviors were positively correlated with commitment ($r = .53, p = .01$), closeness ($r = .57, p = .01$), and complementarity ($r = .57, p = .01$). Competence-supportive coach behaviors were positively correlated with commitment ($r = .38, p = .01$), closeness ($r = .54, p = .01$), and complementarity ($r = .50, p = .01$). Relatedness-supportive behaviors were also positively correlated with commitment ($r = .60, p = .01$), closeness ($r = .59, p = .01$), and complementarity ($r = .53, p = .01$). Thwarting coach interpersonal behaviors were negatively correlated with positive coach-athlete relationship quality. Specifically, autonomy-thwarting coach behaviors were negatively correlated with complementarity ($r = -.25, p = .01$). Competence-thwarting coach behaviors were negatively correlated with closeness ($r = -.21, p = .05$) and complementarity ($r = -.24, p = .01$). Relatedness-thwarting coach behaviors were

negatively correlated with commitment ($r = -.33, p = .01$), closeness ($r = -.40, p = .01$), and complementarity ($r = -.38, p = .01$).

CHAPTER 4

DISCUSSION

The purpose of the present study was to examine the relationships between interpersonal coaching behaviors grounded in the SDT framework, the quality of the coach-athlete relationship, and intentions to continue sport participation within the youth population through two mediation models. It was hypothesized that perceptions of the quality of the coach-athlete relationship would mediate the relationship between supportive coach interpersonal behaviors and intentions to continue sport participation in youth athletes. Further, it was hypothesized that perceptions of the quality of the coach-athlete relationship would mediate the relationship between thwarting coach interpersonal behaviors and decreased intentions to continue sport participation in youth athletes. These hypotheses could not be tested due to lack of significant relationships among constructs to meet the assumptions necessary for mediation analysis.

Drawing from the existing literature base, it was expected that there would be a greater number of significant relationships between intentions and coaching behaviors or the coach-athlete relationship as these connections have been established in previous works (Curran, Hill, Hall, & Jowett, 2014; Curran, Hill, Ntoumanis, Hall, & Jowett, 2016; Gardner, Magee, & Vella, 2016; Rottensteiner, Konttinen, & Laakso, 2015). This, however, was not true for the current project.

Self-determination theory addresses the fulfillment of three basic psychological needs including autonomy, competence, and relatedness (Ryan & Deci, 2000). It is important to acknowledge the extent to which youth athletes regard the role of coaches in fulfilling these basic needs through their behaviors and relationships. Further, one should explore the possibility of other sources that may contribute to an athlete's satisfaction of autonomy, competence, and

relatedness. For example, a child may not consider his or her coach as a viable source to one's perceived competence. Athletes' self-perceptions of competence may be evaluated using several internal or external criteria such as coaches, parents, teammates, social comparison, subjective performance, improvement, or effort (Harter, 1978). Further, the criteria youth rely on for assessing competence varies developmentally. Weiss and Amorose (2005) found that youth athletes' perceptions of the importance of parental and coach feedback as sources of competence was dependent upon age, actual competence, and perceived competence. For children, the parents are typically the most important social influence, but in adolescence, the parent influence lessens, and peer relationships become more influential (Wiese-Bjornstal, Lavoie, & Omli, 2009). Further, the relationship an athlete has with his or her coach may complement or provide another source of support. The current study concentrated on the role of coaches as athletes' primary source of basic need satisfaction, and in this sample, athletes' BNS may have come from other sources that were not assessed.

Additionally, the lack of significant relationships could be attributed to the lower reliabilities of certain subscales that were utilized, specifically in the IBQ. At the time of the study, the IBQ had yet to be used with athletes younger than 14 years of age. A pilot study was conducted with younger athletes (ages 11 to 13) to determine if the measure would be appropriate to use for the study sample. While the reliabilities of the subscales were acceptable for this group, there is the potential for the emergence of psychometric concerns specifically for the younger athletes taking the survey, as this group may display different cognitive development than the athletes ranging from 14 to 16 years of age. This signifies the importance of validating the measure with younger athletes.

There were a lack of associations among CART-Q constructs and intentions. Other factors not included in the model may have explained intentions to continue in this sample more than the factors that were included. One study investigating factors related to youth sport dropout found that there was a significant inverse relationship among coach-athlete relationship quality and dropout; however, when enjoyment and intentions were added to the model, the coach-athlete relationship was non-significant, whereas enjoyment and intentions were inversely related to dropout (Gardner, Magee, & Vella, 2017). These results support previous research that youth sport dropout is complex and can be influenced by several factors (Crane & Temple, 2015). While mediation could not be examined, there were still significant relationships among study constructs worth addressing.

Interpersonal Coaching Behaviors and the Coach-Athlete Relationship

There were significant relationships between interpersonal coaching behaviors and the quality of the coach-athlete relationship which has been previously supported in the literature (Felton & Jowett, 2013; Jowett et al., 2017; Riley & Smith, 2011). Autonomy-supportive, competence-supportive, and relatedness-supportive coaching behaviors were all positively associated with the quality of the coach-athlete relationship while autonomy-thwarting, competence-thwarting, and relatedness-thwarting coaching behaviors were all negatively associated with the quality of the coach-athlete relationship. Researchers examining coach-athlete dyads found high quality relationships between athletes and coaches through coaches' autonomy-supportive behaviors (Lafrenière, Jowett, Vallerand, & Carbonneau, 2011). Others have demonstrated that perceived coaching behaviors that included providing frequent information and encouragement following performances were significantly related to positive affect, perceptions of ability, and motivation in an adolescent swimmer population (Black &

Weiss, 1992). These findings further the notion that coaches' behaviors are significant in establishing and maintaining an effective, high-quality relationship with their athletes.

Competence-Supportive Coaching Behaviors and Intentions

Competence-supportive coach behaviors was the only variable that emerged as significantly related to intentions. Therefore, competence-supportive coaching behaviors was the most important factor to explain intentions to continue sport participation in this sample of youth athletes. This finding is consistent with previous research from a systematic review of dropout from youth sport showing that the second most dominant factor related to youth sport dropout was decreased perceptions of competence (Crane & Temple, 2015). This also aligns with Harter's (1978) competence motivation theory in which individuals are attracted to participate in activities where they feel competent and capable. In the present study, competence-supportive coaching behaviors ($\beta = .21, p = .022$) predicted intentions to continue sport participation. Other studies have found similar results, such that perception of ability ($\beta = -.36, p < .001$) was a significant predictor of dropout (Cervelló, Escartí, & Guzmán, 2007), and perceived competence ($\beta = .16, p < .01$) was a significant predictor of perceived value of sport, a proximal factor relating to dropout (Boiché & Sarrazin, 2009). In addition, a study examining social and motivational predictors of youth sport participation found that athletes with greater perceived competence were more likely to continue playing their sport one year later than those with less perceived competence (Ullrich-French & Smith, 2009).

The coach is an important stakeholder in the youth sport context that has the capacity to positively or negatively impact one's perceptions of competence. Thus, coaches should strive to create environments that enhance athletes' perceptions of competence. Some positive coaching behaviors aimed to increase athletes' perceptions of competence might include providing

positive and informational feedback, using positive reinforcement behaviors, and creating and employing opportunities for athletes to experience success.

In this sample of youth athletes, participants had high levels of intention to continue in their respective sports ($M = 6.54$, $SD = 0.99$) with a score of seven as the highest possible ranking. Data analysis found the intentions subscale was negatively skewed. One potential explanation for this distribution is that one of the inclusion criteria was current participation in an organized sport. The sampling method utilized obtained participants that were actively participating in their sport, which could explain their high intentions to continue at that moment in time. Further, if athletes intended to quit participating in their sport, they may have already dropped out instead of continuing to persist. By and large, the current sample had high intentions to persist which may have contributed to the lack of significant relationships between coach interpersonal behaviors, coach-athlete relationship quality, and intentions to continue because the athletes had high intentions to continue despite their responses on the other survey subscales. This lack of variability in the sample may have contributed to non-significant relationships.

Limitations

One limitation of the current study was the high levels of skewness and kurtosis for many of the subscales included in analysis. While no data transformations were made, which is in accordance with Norris and Aroian's (2004) recommendations, many participants in the sample answered similarly in that they generally exhibited high coach-athlete relationship quality and high intentions to continue in their sport. Another limitation is that actual retention rates were not gathered to determine if participants continued their sport participation. Intentions were utilized instead of following up with participants one year later. It has been shown that intentions to

participate in sport is correlated with actual dropout rates (Balish et al., 2014); however, examining true attrition rates is most ideal yet difficult to accomplish methodologically.

Implications and Future Directions

This study sought to extend the research in this domain by examining coach interpersonal behaviors, the coach-athlete relationship, and intentions to continue sport participation concurrently. It was shown that competence-supportive coaching behaviors predicted intentions, providing additional support for these findings in the literature. This has important implications for coaches, as these stakeholders should aim to engage in behaviors that increase athletes' perceptions of competence with the intent to keep athletes involved in sport participation. Coach education programs can focus on raising awareness and implementing training techniques and strategies that help foster positive behaviors such as those that are competence-supportive.

Future research should continue to explore interpersonal coaching behaviors, the coach-athlete relationship, and other factors that may influence youth attrition rates. Further, longitudinal studies can be conducted to gather retention rates instead of predicting retention rates by examining one's intentions to continue in his/her sport. In addition, future studies should aim to test the psychometric properties of the IBQ, specifically with athletes younger than 14 years of age. Another important consideration is the extent to which the youth athletes could accurately examine and reflect on the experiences with their coaches based on their current stage of cognitive development. Previous studies have assessed a wide age range of youth athletes' perceptions of the relationship with their coach (Gardner, Magee, & Vella, 2017; Vella, Oades, & Crowe, 2013). Further, one study examining school children from grades one through six demonstrated that children's interpersonal perceptions of their peers were consistent with their teachers' perceptions of observed behaviors, cognitive ability, affect, and popularity (Malloy,

Yarlas, Montvilo, & Sugarman, 1996). Therefore, in the present study, it would be reasonable to assume the athletes could accurately perceive their coach's interpersonal behaviors and the quality of the coach-athlete relationship.

Future research should examine the coach-athlete relationship in both the beginning and later stages of the athletic relationship. Three of the participants had spent less than one month with their coach while ten athletes had only spent about one month with their coach. It is uncertain whether the length of one's relationship with their coach may impact survey responses (Jowett & Ntoumanis, 2004), however this may be a possibility.

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APPENDIX A

LITERATURE REVIEW

Youth Sport Participation

Approximately 60 million youth ages six to eighteen participate in organized sports each year (National Council of Youth Sports, 2008). Youth participate in sports for many reasons. For example, parents may enroll their children in sports for the potential to acquire individual growth and increase youth development opportunities. Côté and Fraser-Thomas (2007) cite three important benefits of youth sport participation to guide in children's development including opportunities to become physically active and improve overall physical health, contribution to psychosocial development by presenting circumstances to learn and practice important life skills and learning motor skills that can serve as building blocks for future sport participation.

Consequences of Youth Sport Involvement

Positive youth development. A study conducted by Zarrett and colleagues (2008) sought to explore the relationship between sport participation and positive youth development (PYD). This study defined PYD as the psychological, behavioral, and social characteristics that embody Lerner et al.'s (2005) "Five Cs". Researchers found that youth who participated in sports reported significantly higher levels of PYD than those who did not take part in sports. However, significant differences were only found for youth with intense involvement (longer amounts of time spent taking part in sport each week) and continuity of sport participation, meaning they continued to participate for more than one year. That said, participation in sport must be sustained to reap the most influential benefits.

Physical benefits. The benefits of youth sport participation have been categorized into four main dimensions including physical, social, intellectual, and psychological/emotional development that contribute to PYD and overall, a valuable youth sport experience (Fraser-

Thomas, Côté, Deakin, 2005). Some physical benefits that can be attributed to involvement in youth athletics include increased cardiovascular fitness; weight control; skill development (i.e. flexibility, muscular endurance); and a decreased likelihood of developing diseases such as obesity, diabetes, osteoporosis, heart disease, etc. later in life (Côté & Fraser-Thomas, 2007; Fraser-Thomas, Côté, Deakin, 2005). Children who engage in sports have been shown to possess better physical fitness, less body fat, and increased physical activity rates in adulthood than those youth not involved in sports (Holt & Sehn, 2008). These physical benefits contribute to an individual's overall health and well-being.

Social/intellectual benefits. Participation in youth athletics has also been shown to impact social growth (Fraser-Thomas, Côté, Deakin, 2005). From a social approach, youth sport participation can foster lifelong skills that are further refined as youth approach adulthood. Youth sport environments bring peers together and serve as an important agent of socialization. These environments connect youth to develop positive peer relationships, leadership skills, citizenship, and responsibility (Fraser-Thomas, Côté, Deakin, 2005). Youth involved in athletics have also demonstrated intellectual benefits such as better school attendance, decreased school dropout, and increased academic performance (Balish, McLaren, Rainham, & Blanchard, 2014; Côté & Fraser-Thomas, 2007; Fraser-Thomas, Côté, Deakin, 2005).

Psychological/emotional benefits. Last, participation in sport programs is an avenue for youth to encounter challenging and enjoyable experiences that support psychological and emotional growth. Youth participating in sport have shown increased feelings of self-esteem, happiness, and life satisfaction in addition to decreased levels of stress (Côté & Fraser-Thomas, 2007).

Youth Sport Attrition

Among the several benefits that youth sport provides, youth may not experience all the positive outcomes that sport has to offer unless participation is maintained. A poll conducted by the National Alliance for Youth Sports found that around 70 percent of youth athletes drop out of sport by age thirteen (National Alliance for Youth Sports, 2016).

Studying sport attrition necessitates longitudinal research in order to track youth sport participation rates over time, however, another method researchers have utilized to examine attrition is intentions to continue sport participation. According to Ajzen's (1991) theory of planned behavior, intentions refer to one's motivations and amount of effort invested in performing a behavior. One study employing a prospective design exhibited that behavioral intentions predicted attrition in an adolescent sport population (Gardner, Vella, Magee, 2017). Therefore, the use of intentions to continue in sport may be a useful tool in studying youth sport persistence and attrition.

Youth engage in sport for a variety of reasons, but children noted that the leading reason why they participate in sports is because it is fun, and lack of fun is the main reason for youth sport attrition (Visek, Achrafi, Mannix, McDonnell, Harris, & DiPietro, 2015). Additionally, athlete engagement in sports that is built upon fun and enjoyment has been shown to be an important factor contributing to sport persistence and performance (Vallerand & Rousseau, 2001).

A study by Visek and colleagues (2015) found that youth ranked positive team dynamics, trying hard, and positive coaching as the three most important dimensions of fun within sport. Considering this, youth sport stakeholders should note the importance of these areas and aim to

increase experiences of team dynamics, trying hard, and positive coaching that lead to fun experiences within sport to maintain youth sport persistence and decrease attrition rates.

Self-determination Theory

Several studies have examined youth sport persistence by means of engagement and disaffection through the self-determination theory framework (Curran, Hill, Hall, & Jowett, 2014, 2015; Curran, Hill, Ntoumanis, Hall, & Jowett, 2016). Self-determination theory (SDT) is a framework involving the study of human motivation and the social processes and environments that promote healthy psychological development (Ryan & Deci, 2000).

Basic needs satisfaction. Self-determination theory addresses three innate psychological needs--competence, autonomy, and relatedness (Ryan & Deci, 2000). Competence is having the perceived ability, knowledge, and skill over one's behavior. Autonomy involves freedom in making one's own choices and acting independently and in accordance with one's own volition without being controlled by outside influences or internal pressures. Relatedness involves feeling connected to others in one's social environment.

When one's basic psychological needs are met, the individual will have greater internalization and integration leading to more self-determined motivation and behaviors (Ryan & Deci, 2000). Individuals demonstrating need fulfillment have also shown greater well-being, however, if basic needs are thwarted, individuals will have decreased motivation and well-being. Since fulfillment of basic needs leads to more self-determined motivation, it would be expected that when an individual's basic needs are met, he/she will be more motivated to continue sport participation.

Behavioral regulation. There are different types of motivation that form a continuum from amotivation to extrinsic motivation to intrinsic motivation (Ryan & Deci, 2000). The types

of motivation are categorized based on their regulatory styles and locus of causality. Regulatory styles are based upon the ways people interpret their social values and manage their behaviors to coincide with their self-motivations. The six regulatory styles include non-regulation, external regulation, introjected regulation, identified regulation, integrated regulation, and intrinsic regulation where non-regulation is the least self-determined, and intrinsic regulation has the most self-determined or autonomous behavior. Locus of causality is “the perceived source of initiation and regulation of behavior” (Deci & Ryan, 1985, p. 113) in essence, why a person behaves in the way he/she does. The perceived loci of causality ranges from impersonal to external to internal as behaviors become more self-determined.

Amotivation is the least self-determined type of motivation (Ryan & Deci, 2000). It has an impersonal locus of causality, meaning a person lacks control over their behavior initiation. It is characterized by unwillingness, lacking intention to act, going through the motions, and devaluing an activity. Athletes who display amotivation may continue to play sports, however there is no purpose in their actions because their motivations do not come from the self.

Extrinsic motivation is more self-determined than amotivation but not as self-determined as intrinsic (Ryan & Deci, 2000). It involves engaging in an activity to attain some other external outcome. When behavior is driven by extrinsic motivation, the underlying reason for participation may be more internal and align with one’s value system and sense of self or it can be more external and imposed or coerced (Mageau & Vallerand, 2003). Extrinsic motivation has several types of regulatory styles including external regulation, introjected regulation, identified regulation, and integrated regulation that have increasingly more internal perceived loci of causality respectively (Ryan & Deci, 2000).

External regulation is the least self-determined form of extrinsic motivation where individuals' actions have an external locus of causality (Ryan & Deci, 2000). These behaviors are performed out of compliance or to achieve/avoid external rewards and punishments. One's reason(s) for participating in a behavior is unrelated to the activity itself. For instance, a person may compete in a 5K run to receive a T-shirt and medal. Introjected regulation is more self-determined than external regulation with a locus of causality that is somewhat external. This type of regulatory style involves engaging in a behavior for ego-involvement purposes. An individual may behave in a way to demonstrate ability or avoid failure to maintain feelings of worth. An example of introjected regulation would be signing up for the swim team so others will think you are athletic. Identified regulation is more self-determined than external and introjected regulation. It has a locus of causality that is somewhat internal, meaning behaviors are more in line with the self. In identified regulation, actions are fueled by values and the personal importance the behaviors have to the individual in order to achieve intended outcomes. An example of identified regulation is an individual lifting weights because he values a strong body and knows the training is good for him. Integrated regulation is the most self-determined form of extrinsic motivation with an internal locus of causality. Individuals motivated by this regulatory style engage in behaviors because they are in agreement and congruence with one's self. An example of integrated regulation is an athlete who plays soccer because he identifies as a soccer player and believes it is an important part of who he is. Although integrated regulation is more self-determined, it is still separate from intrinsic motivation because the goal is focused on attaining an outcome rather than personal enjoyment (Ryan & Deci, 2000).

Intrinsic motivation is the most self-determined form of motivation, and it has an internal locus of causality where the initiation of behavior truly comes from the self (Ryan & Deci,

2000). Individuals who are intrinsically motivated engage in an activity because they find inherent satisfaction, interest, and enjoyment from the activity. Intrinsically motivated individuals also have more confidence and excitement which is exhibited by enhanced performance, higher self-esteem, and increased well-being. An example of intrinsic motivation is an athlete who competes in figure skating because he loves participating in the sport and the way it makes him feel.

The satisfaction of basic needs ultimately impacts athletes' intrinsic and self-determined extrinsic motivation (Mageau & Vallerand, 2003). When athletes experience more self-determined forms of extrinsic motivation, such as identified and introjected regulation, they engage in an activity because it is important to their values and self even though they may not find the activity inherently enjoyable.

Associations Among SDT, Enjoyment, and Burnout/Sport Persistence

Research has shown increased rates of burnout and other negative sport outcomes when athletes exhibit amotivation and extrinsic motivation (Lemyre, Roberts, & Stray-Gundersen, 2007; Raedeke & Smith, 2001). Raedeke and Smith (2001) conducted a series of three studies to develop and validate an athletic burnout measure. In examining the psychometric properties of the measure, there was a moderate, positive correlation between burnout and amotivation ($r = .45$ to $.68$). Burnout was also negatively correlated with intrinsic motivation ($r = -.18$ to $-.45$). Lemyre and colleagues (2007) found that athletes with less self-determined motivation were more likely to experience burnout at the end of their season compared to athletes with more self-determined forms of motivation. This furthers the notion that not only is motivation important, but the quality of the motivation is also significant to reduce burnout and potentially attrition.

Much of the athlete burnout literature has focused on college and elite populations, but there is a lack of research that has studied burnout in youth athletes (Harris & Watson, 2014). Harris and Watson (2014) sought to bridge this gap by investigating the relationship between burnout and motivation in adolescent swimmers. Researchers created a model that examines youth sport burnout through SDT framework. Results indicated amotivation and extrinsic motivation were positively associated with burnout ($r = .56, p < .01$) and ($r = .12, p < .05$) respectively, while intrinsic motivation was negatively associated with burnout ($r = -.12, p < .01$). This provides evidence that self-determination theory is valuable in examining burnout in adolescent athletes.

The three basic needs of autonomy, competence, and relatedness impact intrinsic motivation, and several studies have examined how the individual constructs relate to intrinsic motivation, enjoyment, and sport persistence. First, intrinsic motivation is characterized by participating in an activity because of interest, enjoyment, and inherent satisfaction in the activity. Reeve (1989) explained the distinction between interest and enjoyment with regards to intrinsic motivation, “Interest contributes to intrinsic motivation by arousing the initiation and direction of attention and exploratory behavior, while enjoyment contributes to intrinsic motivation by sustaining the willingness to continue and persist in the activity (p. 83). As a result, enjoyment will be analyzed in the context of sport persistence and attrition.

Harris and Watson (2014) identified the link between motivation, enjoyment and burnout finding that amotivation and burnout were negatively associated with enjoyment ($r = -.51, p < .01$) and ($r = -.33, p < .01$). A systematic review of dropout from organized youth sports found that the two most influential factors affecting youth attrition rates were enjoyment and perceptions of competence (Crane & Temple, 2015). Perceptions of competence included lack of

skill improvement, not being good enough, and not being as good as the athlete wanted to be. In five of the studies included in the review, lack of enjoyment and competence were simultaneously related to attrition. A separate study involving task and ego orientations, perceived competence, and motivation found that youth athletes with higher levels of perceived competence reported more autonomous motivation, and higher autonomous motivation scores predicted sport persistence one year later (Rottensteiner, Tolvanen, Laakso, & Kontinen, 2015).

Autonomy support has also been shown to impact sport enjoyment and persistence. A study analyzing physical activity levels in youth football players found that when coaches utilized an interpersonal style of coaching that created an autonomy-supportive environment, the youth athletes were more likely to participate for intrinsic reasons such as the inherent fun and enjoyment experienced during the activity, and they ultimately spent more time engaged in physical activity (Fenton, Duda, & Barrett, 2016). In addition, when youth felt autonomy support from their coach, they reported feeling closer to their teammates and mutually respectful relationships, exhibiting the connectedness construct of SDT (Jõesaar, Hein, & Hagger, 2012).

A study by Spray, Wang, Biddle, and Chatzisarantis (2006) sought to combine SDT and achievement goal theory to better understand youth athletes' motivations in the context of a golf-putting task. Results indicated that autonomous styles of communication were more effective than controlling styles regardless of task or ego-involving involvement. When autonomous communication was used, participants reported higher levels of enjoyment during the putting task and exhibited more free-choice behavior which was characterized by voluntarily practicing on their own volition between tasks. This demonstrates that autonomy was an important factor in motivation to perform at one's best, having a greater impact on motivation than controlling styles of communication (Spray, Wang, Biddle, & Chatzisarantis, 2006). Perceived autonomy support

from coaches and task-involving peer climates have similarly demonstrated a positive impact on intrinsic motivation to participate in youth athletes (Jõesaar, Hein, & Hagger, 2012). These studies demonstrate that fulfillment of basic needs plays an important role in enjoyment of sport and ultimately intentions to continue sport participation.

Role of the Environment in the Fulfillment of SDT

With the goal to maintain youth sport persistence, athletes must have supportive conditions in order to fulfill their basic needs. Involvement in sport programs provides the occasion to develop a supported relationship with at least one committed adult that can provide skill building opportunities and enhance one's engagement and contributions to the community (Lerner et al., 2005). The impact social environments have on individuals is critical in sustaining optimal functioning, social development, and facilitating intrinsic motivation through the fulfillment of autonomy, competence, and relatedness (Ryan & Deci, 2000). Environments that are unsupportive and thwart autonomy, competence, and relatedness undermine and impede intrinsic motivation. That said, it is important to explore the role(s) various sport stakeholders hold in the motivation process through basic need fulfillment and increasing enjoyment levels to make sport more fun and maintain youth sport persistence.

Importance of Sport Stakeholders

In addition to the athlete, there are several other sport stakeholders that are invested in and may impact the youth sport experience including teammates, coaches, parents, siblings, and sport psychology practitioners. Coaches, parents, and sport psychology practitioners are some of the adult stakeholders that interact with and develop relationships with youth athletes, and their behavioral approach to working with youth can affect one's sport experience (Blom, Visek, & Harris, 2013). Adults have an important role in facilitating youth development, and positive and

supportive relationships with adults have been linked to higher attendance and engagement in sport (Roth & Brooks-Gunn, 2016). Therefore, sport environments must be appropriately structured to facilitate personal experiences that include positive interactions with coaches and parents. These adult stakeholders share a critical role in aiding in the fulfillment of autonomy, competence, and relatedness with the intent to facilitate more self-determined, intrinsic motivation in youth athletes to maintain sport persistence.

The Coach as a Critical Sport Stakeholder

The coach is a critical stakeholder, occupying a central role in the youth sport experience. Coaching behaviors have been shown to influence several aspects of the sport experience including the following: athletes' self-esteem, motivation, attitudes about their sport experience, relationships with teammates, skill development (i.e. psychological, physical, social), burnout, and sport attrition (Smith & Smoll, 2017). Specifically, athletes' basic psychological needs are influenced by six types of interpersonal behaviors within the coaching context, including autonomy-supportive (AS; e.g. acknowledging athletes' perspectives, providing athletes with rationale and choice), competence-supportive (CS; e.g. providing athletes with positive feedback, acknowledging improvements, and believing athletes are capable of reaching goals), relatedness-supportive (RS; e.g. providing athletes with support and care), autonomy-thwarting (AT; e.g. making demands, using intimidating language, controlling), competence-thwarting (CT; emphasizing athletes' faults, doubting what athletes can achieve), and relatedness-thwarting (RT; not listening to athletes, being unavailable) (Rocchi, Pelletier, & Desmarais, 2017).

Through a concept mapping approach, Visek and colleagues (2015) found that positive coaching is one of the main determinants of fun in youth sports, highlighting the importance of this specific stakeholder in maintaining participation. "Positive coaching" included treating

players with respect; encouraging the team; being a positive role model; having clear, consistent communication; knowing a lot about the sport; allowing mistakes while staying positive; listening to players and taking their opinions into consideration; being easy to talk to; being nice and friendly; complimenting players; participating with players during practice; and joking around. When these attributes are exhibited, an environment is created that can lead to intention to continue in sport and persistence by increasing feelings of enjoyment, satisfaction, and ultimately intrinsic motivation. These positive coaching behaviors are grounded in the self-determination theory framework and can be strengthened when building the coach-athlete relationship.

Coach-Athlete Relationship

Mageau and Vallerand (2003) posed a motivational model of the coach-athlete relationship where a coach's personal orientation (autonomy supportive versus controlling), coaching context, and perceptions of athletes' motivation and behavior influence that coach's behaviors. Those behaviors in turn influence perceptions of autonomy, competence, and relatedness, impacting motivation levels and types. The utilization of autonomy-supportive rather than controlling behaviors takes an athlete-centered approach while enhancing intrinsic motivation and self-determined extrinsic motivation (Mageau & Vallerand, 2003). Examples of autonomy supportive behaviors among coaches include providing athletes choice within specific rules and limits, providing a rationale for tasks and limits, acknowledging the other person's feelings and perspectives, providing athletes with opportunities for initiative taking and independent work, providing non-controlling competence feedback, avoiding controlling behaviors such as providing contingent rewards, and preventing ego-involvement in athletes. These behaviors contribute to a positive motivational climate that fosters basic need satisfaction.

For example, if a coach provides a rationale for a task, it adds significant meaning to the task, and athletes will be more likely to internalize, integrate, and accept the task rather than exhibit blind compliance. Another example is a coach providing feedback to an athlete. If the coach says, “Keep it up, and I’ll give you more playing time,” the feedback is controlling and outcome focused whereas “Keep up the good work. You are playing much better,” provides feedback regarding improvement without controlling language. Adopting these positive coaching behaviors can help promote effective psychosocial environments that build more self-determined motivation in athletes. Thus, the quality of the coach-athlete relationship is an important factor of athlete satisfaction and motivation (Mageau & Vallerand, 2003), and it is critical to establish this essential connection.

Jowett and Poczwardowski (2007) define the coach-athlete relationship as “a situation in which a coach’s and an athlete’s cognitions, feelings, and behaviors are mutually and causally interrelated relationships (p. 4).” This conceptual framework highlights three constructs including commitment (cognitive), closeness (affect/feelings), and complementarity (behaviors). These psychological constructs are used to quantify perceptions of the coach-athlete relationship. Commitment represents the coach or athlete’s intention to maintain their athletic relationship over time; closeness is being able to trust one another and feeling cared for, valued, and respected; and complementarity is the extent to which behaviors (i.e. roles, tasks, and support) are reciprocal and co-operative (Jowett & Ntoumanis, 2004; Jowett & Poczwardowski, 2007). Increased perceptions of commitment, closeness, and complementarity indicate a more favorable perception of the coach-athlete relationship.

Coach-Athlete Relationship and Coach Interpersonal Behaviors

The quality of the coach-athlete relationship is positively associated with the satisfaction of basic needs, and athletes' basic need satisfaction is positively associated with motivation (Riley & Smith, 2011). These results have similarly been demonstrated in multicultural settings (Jowett, Adie, Bartholomew, Yang, Gustafsson, Lopez-Jiménez, 2017). Further, Felton and Jowett (2013) found that autonomy supportive coaching behaviors positively predicted the satisfaction of autonomy, competence, and relatedness, whereas controlling coaching behaviors were negatively associated with athletes' needs of autonomy and competence. In addition, athletes' perceptions of the quality of the coach-athlete relationship positively predicted athletes' satisfaction of the competence and relatedness constructs of SDT, furthering the notion that the coach-athlete relationship is an important part of the social environment created around sport (Felton & Jowett, 2013).

Coach-Athlete Relationship and Sport Persistence

While the coach-athlete relationship has provided insight into building motivation in athletes, it also illuminates a path for sport persistence. The coach-athlete relationship and sport persistence have been connected through the creation of social profiles (Gardner, Magee, & Vella, 2016; Rottensteiner, Konttinen, & Laakso, 2015). Gardner et al. (2016) investigated social climate profiles involving adolescent athletes' perceptions of relationships with coaches, parents, and peers. Four profiles were identified and explored in relation to enjoyment and youths' intentions to continue sport participation. The positive coach relationship quality profile was characterized by high levels of coach-athlete relationship quality with low levels of parent and peer relationship quality. This profile yielded the highest levels of enjoyment and intention to

continue participation, suggesting that the coach-athlete relationship has a significant impact on youth athletes (Gardner, Magee, & Vella, 2016).

Rottensteiner et al. (2015) investigated the coach-athlete relationship and perceived coach-created motivational climates via the Coach-Athlete Relationship Questionnaire (CART-Q) and Perceived Motivational Climate in Sport Questionnaire (PMCSQ). Athletes that continued sport participation reported higher scores on the CART-Q and PMCSQ than withdrawn players. Three profiles were identified through cluster analysis, and the most beneficial profile yielding the most sport persistence included a high coach-athlete relationship, high task climate, and moderate ego climate. These variables when coupled together have important implications for youth sport persistence (Rottensteiner, Kontinnen, & Laakso, 2015).

Coach Interpersonal Behaviors and Sport Persistence

Curran et al. (2014) sought to explore how coaching behaviors affect engagement and disaffection in youth sport. An autonomy supportive motivation style was associated with psychological need satisfaction and predicted sport engagement compared to a controlling style that thwarted basic needs and predicted disaffection. Curran et al. (2016) further explored the mediation model of engagement and disaffection within the youth sport context through a longitudinal study analyzing three waves of data. Results from this study affirmed that an autonomy supportive motivational style predicted engagement, and a controlling motivational style predicted disaffection. In addition, coach motivational styles implemented at the beginning of the season predicted mid-season need satisfaction/thwarting and season end engagement/disaffection.

Curran, Hill, Hall, and Jowett (2015) also explored engagement through coach-created motivational climates. Researchers compared a mastery climate where coach's emphasize effort,

cooperation, learning, and improvement to a performance climate where intra-team competition, social comparison, and interpersonal evaluation are emphasized. Results indicated that all dimensions of engagement (i.e. confidence, dedication, enthusiasm, vigor) were positively correlated to a mastery climate indicating higher engagement. In contrast, performance climates showed lower levels of athlete engagement.

Gaps in the Literature

Basic need fulfillment via interpersonal coaching behaviors, the coach-athlete relationship, and intentions to continue sport participation have been examined independent of one another and in various combinations and directions, but these variables have not been examined collectively in this manner. Connections have been made between the coach-athlete relationship and interpersonal coaching behaviors that emphasize the satisfaction of basic needs (Fenton & Jowett, 2013; Jowett, Adie, Bartholomew, Yang, Gustafsson, Lopez-Jiménez, 2017; Riley & Smith, 2011), interpersonal coaching behaviors and intentions to continue sport participation (Curran et al., 2014, 2015; Curran et al., 2016; Fenton, Duda, & Barrett, 2016; Jõesaar, Hein, & Hagger, 2012; Smith & Smoll, 2017; Visek et al., 2015), and increased perceptions of the quality of the coach-athlete relationship strengthening intentions to continue sport participation (Gardner, Magee, & Vella, 2016; Rottensteiner, Kontinnen, & Laakso, 2015). The coach-athlete relationship and basic psychological needs have been studied together, however, the direction of this relationship has not been cemented. Some researchers have investigated the ways in which the coach-athlete relationship impacts basic needs satisfaction (Felton & Jowett, 2013; Riley & Smith, 2011), but no studies have focused on the way in which interpersonal coaching behaviors impact basic need satisfaction to predict the quality of the coach-athlete relationship (Choi, Cho, & Huh, 2013).

APPENDIX B
DEMOGRAPHICS QUESTIONNAIRE

1. My child's current age is _____.
2. Is your child of Hispanic, Latino, or Spanish origin? Yes No
3. My child's race is _____.
 - a. American Indian or Alaska Native
 - b. Asian
 - c. Black or African American
 - d. Native Hawaiian or Other Pacific Islander
 - e. White or Caucasian
 - f. Prefer not to answer
4. My child identifies as _____.
 - a. Male
 - b. Female
 - c. Transgender
 - d. Other
 - e. Prefer not to answer
5. The sport my child currently participates in is _____. *(If your child currently participates in more than one sport, indicate the sport in which they spend the most time participating each week.)*
6. My child has been playing this sport for _____ years.
7. My child has been working with this current coach for _____ years and _____ months.

APPENDIX C

COACH-ATHLETE RELATIONSHIP QUESTIONNAIRE (CART-Q)

Please read carefully the statements below and circle the answer that indicates whether you agree or disagree. There are no right or wrong answers. Please respond to the statements as honest as possible and relevant to how you personally feel with your (principal) coach.

	Strongly Disagree		Moderately			Strongly Agree	
	1	2	3	4	5	6	7
I am close to (not distant from) my coach	1	2	3	4	5	6	7
I am committed to my coach	1	2	3	4	5	6	7
I like my coach	1	2	3	4	5	6	7
When I am coached by my coach, I am at ease	1	2	3	4	5	6	7
I trust my coach	1	2	3	4	5	6	7
I think that my sport career is promising with my coach	1	2	3	4	5	6	7
When I am coached by my coach, I am responsive to his/her efforts	1	2	3	4	5	6	7
I respect my coach	1	2	3	4	5	6	7
I appreciate my coach's sacrifices in order to improve performance	1	2	3	4	5	6	7
When I am coached by my coach, I am ready to do my best	1	2	3	4	5	6	7
When I am coached by my coach, I adopt a friendly stance	1	2	3	4	5	6	7

APPENDIX D
INTERPERSONAL BEHAVIOURS QUESTIONNAIRE IN SPORT (IBQ)
 Using the scale below, please indicate the extent to which you agree with the following statements about how your coach generally behaves with you.

1	2	3	4	5	6	7
Do not agree			Somewhat agree			Completely agree

My coach

	Do not agree		Somewhat agree			Completely agree	
Tells me that I can accomplish things.	1	2	3	4	5	6	7
Relates to me.	1	2	3	4	5	6	7
Gives me the freedom to make my own choices.	1	2	3	4	5	6	7
Is interested in what I do.	1	2	3	4	5	6	7
Encourages me to make my own decisions.	1	2	3	4	5	6	7
Pressures me to adopt certain behaviors.	1	2	3	4	5	6	7
Does not comfort me when I am feeling low.	1	2	3	4	5	6	7
Does not connect with me.	1	2	3	4	5	6	7
Points out that I will likely fail.	1	2	3	4	5	6	7
Supports the choices I make for myself.	1	2	3	4	5	6	7
Pressures me to do things their way	1	2	3	4	5	6	7

1	2	3	4	5	6	7
Do not agree			Somewhat agree			Completely agree

My coach

	Do not agree		Somewhat agree			Completely agree	
Sends me the message that I am incompetent.	1	2	3	4	5	6	7
Doubts my capacity to improve.	1	2	3	4	5	6	7
Honestly enjoys spending time with me.	1	2	3	4	5	6	7
Encourages me to improve my skills.	1	2	3	4	5	6	7
Supports my decisions.	1	2	3	4	5	6	7
Is distant when we spend time together.	1	2	3	4	5	6	7
Impose their opinions on me.	1	2	3	4	5	6	7
Limits my choices.	1	2	3	4	5	6	7
Takes the time to get to know me.	1	2	3	4	5	6	7
Provides valuable feedback.	1	2	3	4	5	6	7
Acknowledges my ability to achieve my goals.	1	2	3	4	5	6	7
Does not care about me.	1	2	3	4	5	6	7
Questions my ability to overcome challenges.	1	2	3	4	5	6	7

APPENDIX E
INTENTIONS TO CONTINUE SPORT PARTICIPATION

Directions: Circle the number that best describes your personal opinions.

	Strongly disagree		Somewhat agree			Strongly agree	
I intend to participate in this sport one year from now.	1	2	3	4	5	6	7
I plan to participate in this sport one year from now.	1	2	3	4	5	6	7
I am determined to participate in this sport one year from now.	1	2	3	4	5	6	7

APPENDIX F

TABLES

Table 1. Descriptive statistics for the IBQ, CART-Q, and Intentions subscales

Subscale	Mean	SD
Autonomy-Supportive (AS)	5.67	1.12
Autonomy-Thwarting (AT)	3.53	1.35
Competence-Supportive (CS)	6.43	0.75
Competence-Thwarting (CT)	1.78	1.01
Relatedness-Supportive (RS)	5.51	1.19
Relatedness-Thwarting (RT)	1.89	1.14
Commitment	5.78	1.06
Closeness	6.59	0.65
Complementarity	6.19	0.75
Intentions	6.54	0.99

Table 2. Pearson correlations between study constructs

	1	2	3	4	5	6	7	8	9	10
1 AS										
2 AT	-.270**									
3 CS	.511**	-.157								
4 CT	-.311**	.438**	-.260**							
5 RS	.761**	-.193*	.437**	-.288**						
6 RT	-.379**	.393**	-.444**	.509**	-.447**					
7 Commit	.531**	-.059	.377**	-.173	.604**	-.329**				
8 Close	.569**	-.114	.543**	-.212*	.592**	-.400**	.645**			
9 Comp.	.569**	-.246**	.499**	-.241**	.525**	-.380**	.592**	.705**		
10 Intent.	.013	.130	.205*	.040	-.044	-.103	.145	.033	.073	

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

APPENDIX G

FIGURES

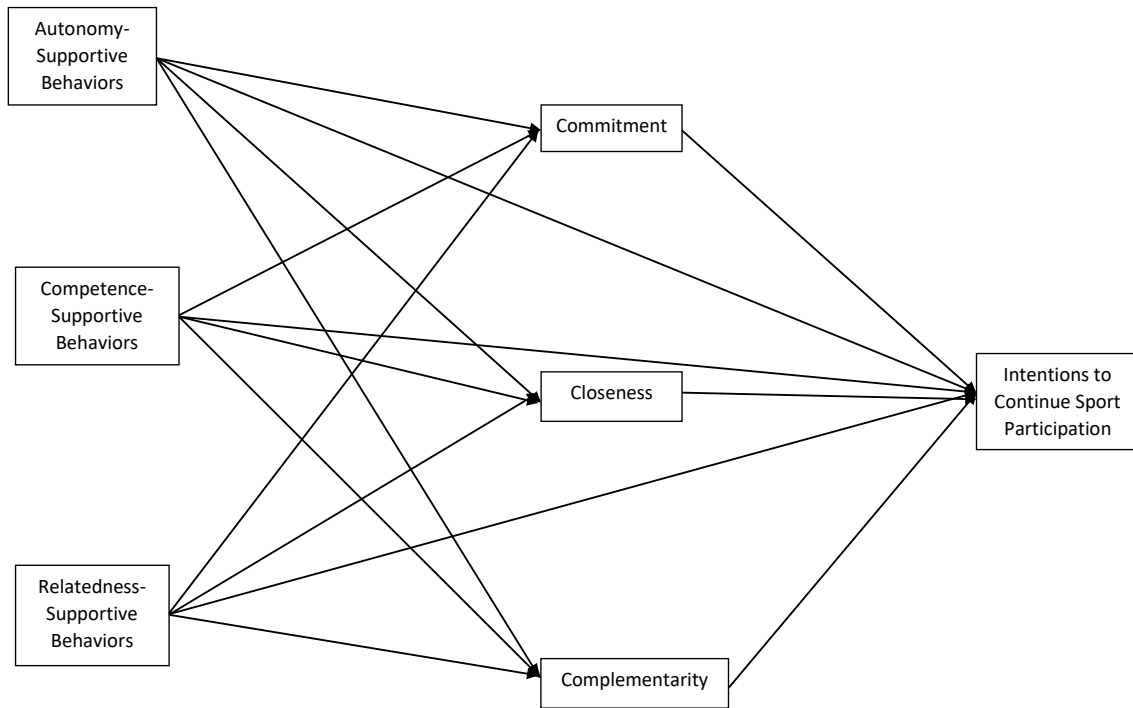


Figure 1. Hypothesized mediation model for supportive coach interpersonal behaviors.

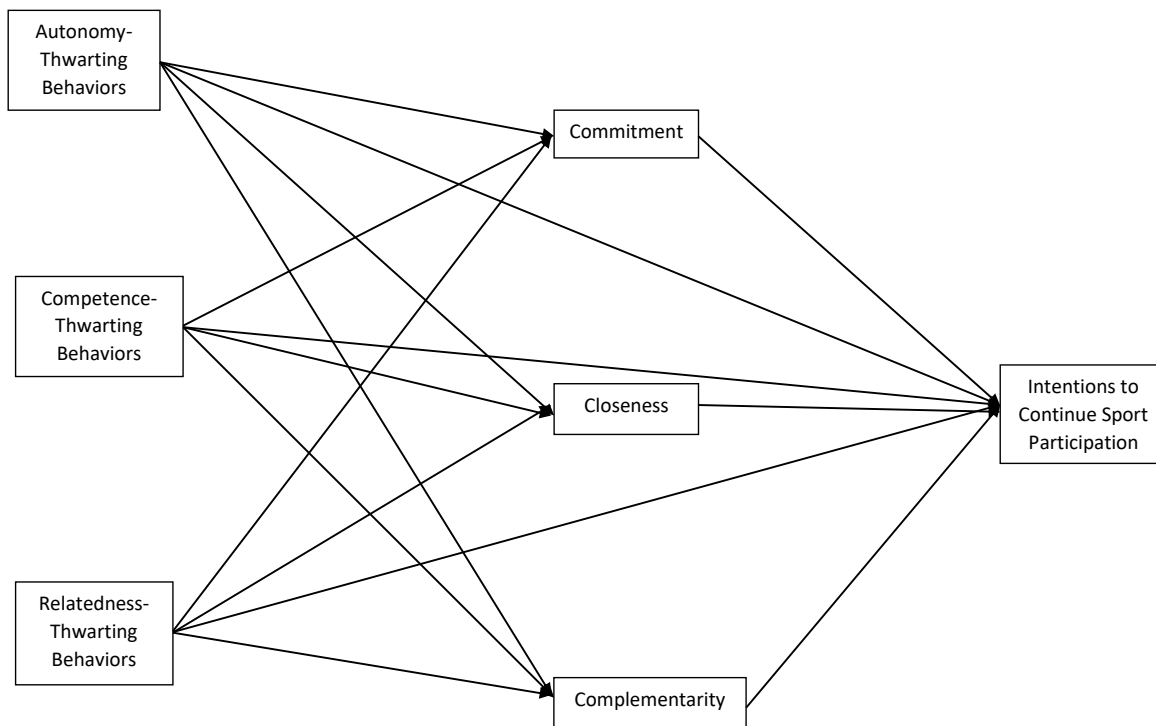


Figure 2. Hypothesized mediation model for thwarting coach interpersonal behaviors.