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The Perceived Effectiveness of Autonomy-Supportive and Controlling Coaching Styles

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THE PERCEIVED EFFECTIVENESS OF AUTONOMY-SUPPORTIVE AND CONTROLLING COACHING STYLES

KAYLA LOVE

39 Pages

Objective: The purpose of this study is to determine how collegiate athletes perceive their coach's behaviors and if there are differences in the perceived effectiveness of autonomy-supportive and controlling coaching styles.

Method: A cluster analysis was conducted among collegiate athletes ($N = 306$) from the Midwest portion of the United States. The athletes were given questionnaires to report on perceived autonomy-support and control exhibited by their coach, as well as the perceived effectiveness of their coach in terms of confidence in their coach.

Results: Preliminary analyses found that autonomy support was positively related to confidence in the coach, whereas controlling behaviors were negatively related to confidence in the coach. The relationship between autonomy support and confidence in the coach was particularly strong ($r=.79$). In the main analysis, seven profiles representing athletes that perceived various combinations of low, high, and moderate levels of autonomy-supportive and controlling behaviors were found. Results also revealed that the confidence the athletes had in their coach tended to decline across profiles as the degree of perceived autonomy support declined.

Conclusion: Experiencing higher levels of autonomy-supportive behavior leads athletes to be more confident in their coach. Coaches that are perceived to be high in autonomy-supportive behavior and low in controlling behavior are the most effective in coaching. The least effective

coaches are those coaches who are perceived as low in autonomy-supportive behaviors and high in controlling behaviors. The present findings are most useful for coaches and athletic departments.

THE PERCEIVED EFFECTIVENESS OF AUTONOMY-SUPPORTIVE AND

CONTROLLING COACHING STYLES

KAYLA LOVE

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THE PERCEIVED EFFECTIVENESS OF AUTONOMY-SUPPORTIVE AND

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K. L.

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CHAPTER I: INTRODUCTION

The Perceived Effectiveness of Autonomy-Supportive and Controlling Coaching Styles

All coaches develop a relationship with their athletes. However, not every coach and athlete experience the same quality of the relationship. Similar to other relationships, the coach-athlete relationship relies on support, trust, communication, and respect to be the most effective. While the athlete contributes as well, the quality of the relationship will be largely determined by the behaviors and leadership styles exhibited by the coaches (Jowett & Lavallee, 2007). For example, all coaches give corrective feedback, yet the way in which they do so might be perceived as more or less positive by the athletes. This is nicely illustrated in a quote from former All-American basketball player and basketball coach for the University of California Los Angeles, John Wooden, who once said, "A coach is someone who can give correction without causing resentment." (Success Presents Coach John Wooden Pyramid of Success, n.d.). While all coaches give corrective feedback, this quote illustrates that "good" or "effective" coaches will do so in a way that will lead to positive feelings for the athlete. Given the importance of the behaviors and interpersonal styles exhibited by coaches to their athletes' experiences (Mageau & Vallerand, 2003), understanding which coaching behaviors athletes believe are more or less effective is an important goal. This is the overall goal of the current study.

A core theory for motivation is self-determination theory (Deci & Ryan, 2017). This theory states that in order to prosper an individual's needs for autonomy, competence, and relatedness need to be met (Deci & Ryan, 2017). According to the self-determination theory, those with the position of authority have the power to influence need satisfaction (Reeves,

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20002; Mageau & Vallerand, 2003; Amorose, 2007). Psychological needs can be meet in a sports setting when coaches display autonomy-supportive behaviors or can be diminished when coaching adopt a controlling style (Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2009).

According to Mageau and Vallerand (2003), autonomy-supportive behaviors are behaviors from an authority figure that provide choice and support an individual to be independent. Autonomy-supportive behaviors in coaches include: (a) providing athletes choice within specific limits, (b) providing a rationale for takes and limit, (c) acknowledging the athlete's feeling and perspective, (d) providing athletes with opportunities for initiative taking and independent work, (e) providing non-controlling competence feedback, (f) avoiding controlling behaviors, and (g) preventing ego-involvement in athletes. For instance, an autonomy-supportive coach may provide their athletes with two options of a drill to practice that focus on the same skill concept, or would ask for their athletes' thoughts and ideas about plays.

Controlling behaviors are known to prevent or thwart need satisfaction in athletes (Mageau & Vallerand, 2003; Bartholomew et al., 2009). Mageau and Vallerand (2003) state that controlling behaviors use power-assertive techniques, such as withholding privileges or materials and/or using threats. According to Bartholomew et al. (2009), examples of controlling behaviors are: (a) using tangible rewards to manipulate the athletes' behavior, (b) giving praise or overly critical feedback in effort to motivate athletes, (c) excessive monitoring during practice or training, (d) imposing opinions to assure athletes follow the coach-centered agenda, and (e) only focusing on the athlete when they perform well rather when they are struggling. For instance, a

controlling coach may cancel a team dinner because of the players' poor performance or guilt shame an athlete about their priorities to fit that of the coaches.

Several studies have explored how athletes' perceptions of autonomy-supportive behaviors have been linked to positive motivational outcomes (see Amorose, 2007; Mageau & Vallerand, 2003; Bartholomew et al., 2009). For example, Mourtatidis, Lens, and Vansteenkiste (2010) found that autonomy-supportive feedback from coaches improved athletes' performances and experiences. Research supports that athletes who perceive their coaches to be autonomy-supportive have a higher level of engagement (Curran, Hill, Hall, and Jowett, 2015). Autonomy-supportive behavior has also led to increased intrinsic motivation in both adolescent and collegiate athletes (Joesaar, Hein, & Hagger, 2012; Amorose & Horn, 2001). Kipp and Weiss (2015) found that a greater sense of volition and connectedness was built when their coaches displayed autonomy-supportive behaviors. They found autonomy-supportive behaviors such as providing a choice from coaches promote positive emotion in athletes, as well. Other outcomes of autonomy-supportive behaviors are an increase in an individual's self-determined motivation, self-esteem, well-being, autonomy, and satisfaction of the needs for competence (see Mageau & Vallerand, 2003; Reeves, 2002).

Unlike autonomy-supportive behavior, recent studies have shown that controlling behaviors hurt athletes. The outcomes of a controlling coaching style have been seen to be less motivating because of athletes' drops in relatedness (Quested, Ntoumanis, Viladrich, Haug, Ommundsen, Van Hoye, Mercé, Hall, Zourboanos & Duda, 2013). Keegan, Harwood, Spray, and Lavallee (2009) found that youth athletes felt uncertain about tangible reinforcements

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because of the pressure to perform better or a certain way in order to redeem the reward. The rewards made athletes less motivated to perform better. Tangible rewards, such as scholarships, have been associated with a decrease in competence because of perceived controlling behavior (Matosic, Cox, Amorose, 2014). Controlling coaching behavior increases levels of burnout and psychological need thwarting (Balaguer, 2012). As a result, both burnout and psychological need thwarting can cause an athlete's motivation to decrease (Bartholomew Ntoumanis, Ryan, Bosch, Thøgersen-Ntoumani, 2011).

One study by Del Meyer et al. (2016) has explored both autonomy-support and controlling behaviors in both sport and/or education. Del Meyer et al. (2016) found autonomy-supportive behaviors to be more motivating than controlling behaviors. As a specific example, a recent study by Trigueros, Aguilar-Parra, Cangas-Díaz, Fernández-Batanero, Mañas, Arias, and López-Liria (2019) investigated the influence of both perceived autonomy-support and controlling behaviors on athletes' basic psychological needs and resilience. Autonomy-support interpersonal style was found to have a positive effect on resilience and basic psychological needs. Autonomy-supportive behavior had a negative effect on frustration of psychological needs. A controlling interpersonal style was found to have a positive effect on frustration of psychological need and a negative effect on the basic psychological needs. The results also showed an indirect relationship between the trainers' interpersonal controlling style and resilience.

While most of the research has focused on the independent effects of autonomy-supportive and controlling behaviors (e.g., Trigueros et al. 2019), a few studies have begun to

explore the combined effects. For instance, using a variable-centered approach, Amorose and Anderson-Butcher (2015) explored how the independent and interactive effects of perceived autonomy-supportive and controlling behaviors predicted a host of motivational outcomes in a sample of adolescent athletes. They found that controlling behaviors were positive predictors of maladaptive motivational responses (e.g., non-self-determined motives, burnout,), while autonomy-supportive behaviors were predictors of adaptive motivational responses (e.g. self-determined motives, psychological needs). However, a significant interaction showed that the combination of autonomy-support and controlling behaviors changed the prediction of certain motivational variables. Perceptions of autonomy-supportive behavior with low control lead to an increase in motivational responses. The high level of autonomy-supportive behavior and low control revealed to be the most optimal outcome.

Recently, a handful of studies in education (e.g., Amoura, Berjot, Gillet, Caruana, Cohen, & Finez, 2015) and sport (e.g., Haerens, Vansteenkiste, De Meester, Delrue, Tallir, I., Vande Broek, Goris, Aelterman, 2018; Matosic & Cox, 2014) have explored potential combined effects of autonomy-supportive and controlling styles from a person-centered approach. For example, Matosic and Cox (2014) looked at college swimmers' perceptions of autonomy-supportive and controlling behaviors exhibited by their coaches. Using a cluster-analysis, they found three different profiles. The cluster they labeled as "supportive" was made of athletes that perceived high levels of autonomy support from their coach. The cluster labeled as "controlled" contained athletes that perceived higher levels of controlled behavior from their coaches. The cluster labeled "supported and controlled by the rewards" group had moderate levels of both autonomy-supportive and controlling behaviors. Their results also indicated that the athletes in different

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clusters varied in motivation. Specifically, the athletes that perceived more controlling behaviors had a lower level of need satisfaction and autonomous motivation. The "controlled "group had a higher level of amotivation than autonomy support athletes. The group "supported" and "controlled by reward" did not differ in need satisfaction or motivation compared to the "controlled" group.

More recently, Haerens et al. (2018) investigated the perceptions of autonomy-supportive and controlling behaviors in coaches of elite athletes and PE students. In the first study, athletes gave self-reports on their need satisfaction, motivation, well-being, performance, and perceived autonomy-support and control from their coaches. The results of their cluster analysis showed the emergence of four clusters based on the combination of perceived autonomy-supportive and controlling coaching behaviors. The "high-high" cluster ($n = 70$, 36.1%) had a high perception of both autonomy-supportive behaviors and controlling behaviors. The "low-low" cluster ($n = 48$, 24.7%) had a low perception of controlling behaviors and autonomy-supportive behaviors. The last two clusters were a mixture of both autonomy support and control but at different levels. The cluster titled "high-low" ($n = 44$, 22.1%) perceived relatively higher autonomy support behaviors in their coach and relatively lower controlling behaviors. The cluster called "low-high" ($n = 32$, 16.5%) perceived relatively higher controlling behavior from their coaches than autonomy-supportive behaviors. The researchers also found that the clusters differed in motivational outcomes. In general, the perceived high autonomy-supportive - low control (i.e., the "high-low" cluster) displayed the most optimal outcomes, while the "low-low" and the "low-high" cluster showed the least optimal outcomes. For instance, the "high-low" cluster showed the highest levels of need satisfaction and autonomous motivation, whereas the "low-low" and the high

control cluster showed the lowest level of these motivational outcomes. In general, the opposite pattern of results emerged with controlled forms of motivation and amotivation.

In the second study, Haerens et al. (2018) looked at students' perception of PE teachers from a situational level. There were self-reports of perceived autonomy-supportive and controlling teaching behaviors, need satisfaction, and need frustration, motivation, and controlled non-participation (e.g., participating because classmates will look up to them). Similar to the elite athletes, Haerens et al. identified four cluster groups. The "high-high" cluster was high in perceived autonomy-supportive behavior and high in controlling behavior. The "low-low" cluster was perceived low in autonomy-supportive behavior and low in controlling behavior. The "high-low" cluster was perceived high in autonomy-supportive behavior - low in controlling behavior. The "low-high" high cluster was perceived low in autonomy-supportive behavior and high in controlling behavior. The profiles with a higher level of perceived autonomy-supportive or perceived controlling behavior were seen to have distinctive outcomes. As with the athletes, students in the "high-low" cluster showed the most optimal motivational outcomes, especially compared to the "low-high" cluster. Interestingly, when it came to some of the more negative outcomes (e.g., need frustration, controlled non-participation), the "high-high" cluster was similar to the "low-high" cluster suggesting that having high levels of autonomy support do not necessarily offset the negative outcomes associated with perceiving high levels of controlling behaviors.

While the majority of the research has shown more positive athlete outcomes are associated with a more autonomy-supportive and less controlling coaching style (Mageau &

Vallerand, 2003; Bartholomew e al., 2009), there is evidence that suggests controlling behaviors may be perceived by others as more effective. For instance, qualitative studies on coaching effectiveness have indicated that athletes see at least some controlling behaviors as being effective. Keegan et al. (2009) found that some youth athletes valued controlling behaviors because it kept the athletes from being disrupted and allowed for more learning. Bengeochea and Strean (2007) investigated interpersonal influences on athletes' motivation. They found five significant categories from interviewing athletes with a variety of experience and competition level. The categories were: (a) providers of support, (b) sources of pressure and control, (c) sources of competence-relevant information, (d) agents of socialization of achievement orientations, and (e) models to emulate. When discussing others as a source of pressure and control, athletes indicated that they prefer their coaches to be demanding and have a stricter interaction. The athletes perceived this as sense of direction. The athletes in the study also indicated that controlling behavior enforces essential concepts and drills that improve the athlete's performance, and that, if left with an option, the athletes may not improve on these skills on their own. Finally, Becker and Solomon (2009), when defining a great coach, found that athletes preferred their coach to have controlling behaviors relating to discipline and structure of the practices. These were often controlling behaviors to keep the team on task.

A few studies from outside of sport also suggest that controlling behavior may be perceived as more effective. A study done by Flink, Boggiano, and Barrett (1990) investigated performance impairment caused by controlling strategies in an educational setting. The researchers especially looked at the students' motivational response to pressure, the students' response to the teachers being pressured to improve students' performance, the lack of choice

provided to the students, and the teachers' control. The results showed that the student perceived the teachers to be more interesting when they used controlling behaviors. The pressuring teachers were perceived to be more engaging and competent. However, they found that the students' performance suffered when controlling teachers were pressured.

In another educational setting study, Boggiano, Flink, Shields, Seelbach, and Barrett (1993) examined students' perception of controlling directives in an educational setting. The focus of this study was to examine the effects of controlling and non-controlling directives on a conceptually difficult task. The researchers placed the student participants in two different groups, and they received either controlling or non-controlling instructions. The same instructor gave direction on how to complete practice problems to both groups, however, one set of directions offered choice while the other did not. The directions given with choice was considered non-controlling instruction. The other instructions were more limiting and designed to regulated control. They found that students in the non-controlling group performed better on the task. Both groups felt as though they did well on the practice problems given during the experiment. However, the controlling group gave their teacher a higher rating for how helpful they found the instructor's instruction. This could suggest that the students perceived the controlling instructors to be more competent.

In sum, despite the evidence generally showing that autonomy-supportive behaviors result in more favorable outcomes, the belief that this is the most effective coaching style is not fully understood. Thus, the purpose of the study was to determine if there are differences in the perceived effectiveness of autonomy-supportive and controlling coaching styles. While there are

many potential indicators of perceived effectiveness, this study focused on the degree of confidence athletes had in their coach. The idea of using the concept of an athlete's confidence in their coach as a measurement comes from Jackson, Gucciardi, and Dimmock (2011). Jackson et al. (2011) created scales based on the tripartite efficacy constructs (self-efficacy, other-efficacy, and relation-inferred self-efficacy). The theoretical grounding for the current study is based on the athlete's perception of the coach's behavior. According to Lent and Lopez (2002), other-efficacy can influence an individual's satisfaction and performance. Therefore, the idea being that athletes who were more confident in their coach's abilities to do things such as communicate effectively, provide support, prepare them for competitions, motivate them, and so on are indirectly indicating that they believe their coach is being effective. One study that has provided credibility for the Other Efficacy Instrument and it is Jackson, Whipp, Chua, Pengelley, and Beauchamp (2012).

Given the lack of research addressing this question, the following hypotheses are given tentatively. Based on prior research (e.g., Haerens et al., 2018), it was hypothesized that four profiles reflecting different combinations of perceived autonomy support and controlling behaviors would emerge. The hypothesized profiles are illustrated in Figure 1. One profile was expected to consist of athletes who perceive both a high level of autonomy support - high control. A second profile would have both low autonomy support - low control. Another profile would be high in autonomy support - low control, and the final profile would be low in autonomy support and high in control.

Next, the profiles were expected to differ in perceived effectiveness. Similar to that of Haerens et al. study (2018), it is expected that the groups with higher levels of autonomy support would have the most optimal outcomes. The perceived high autonomy support - low perceived control group (i.e., "high-low" cluster) would be the most effective. This group would then be followed by the high perceived autonomy support - high perceived control group (i.e., "high-high" cluster). The next group would be the high perceived control - low perceived autonomy support (i.e., "low-high" cluster). Finally, the least effective group would be the ow perceived autonomy support - low perceived control (i.e., "low-low" cluster).

Figure 1

Predicted Profiles
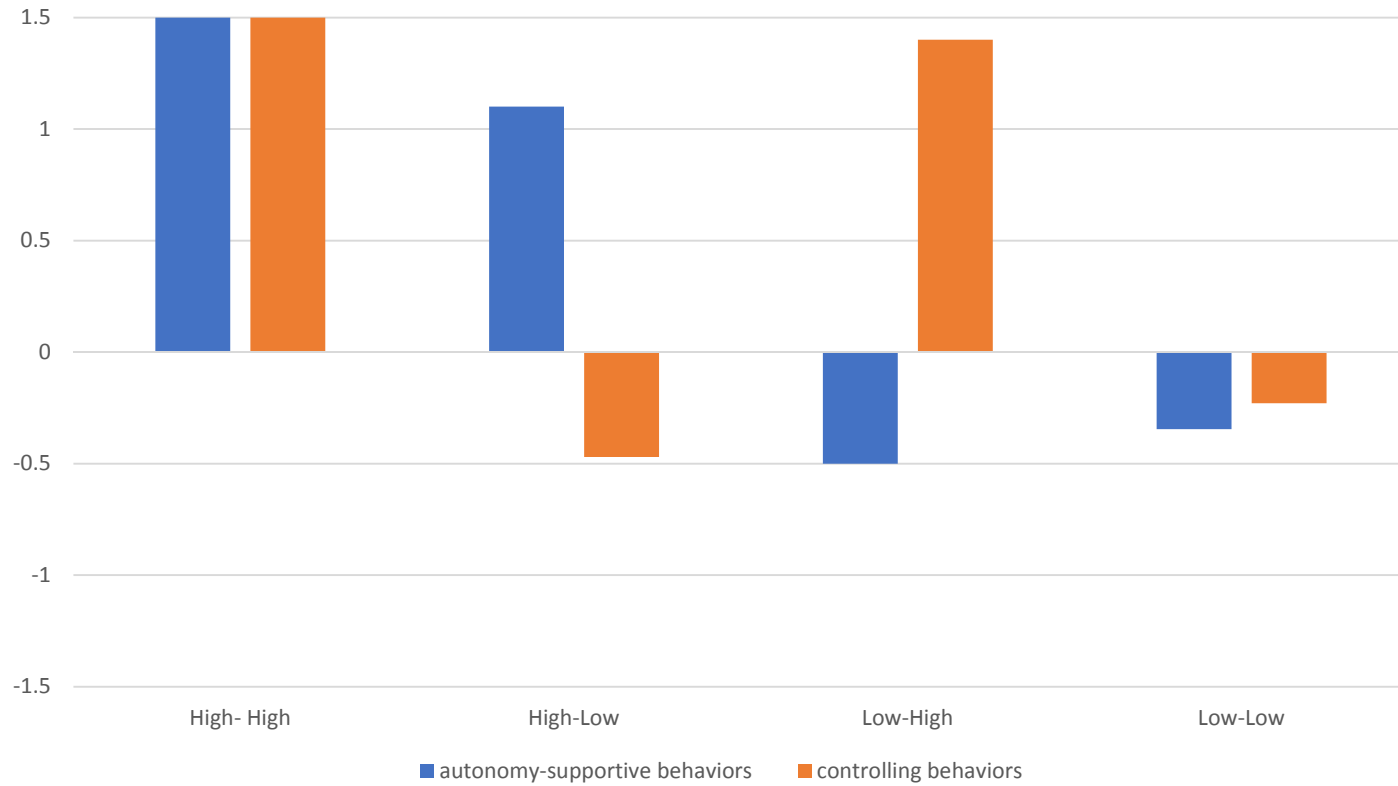
CHAPTER II: METHOD

Participants

The participant sample ($N = 306$) was comprised of male ($n = 184$) and female ($n = 118$) athletes from a variety of team and individual sports from the Midwestern portion of the United States. Participants ranged in ages from 17 to 23 years ($M = 19.58$, $SD = 1.29$; freshmen, $n = 127$; sophomore, $n = 88$; junior, $n = 55$; senior, $n = 38$; grad, $n = 2$), and were recruited from school-based athletic teams (track and field, $n = 187$; swimming, $n = 22$; baseball, $n = 50$; football, $n = 16$; soccer, $n = 17$; tennis, $n = 10$; volleyball, 2). Two athletes failed to report their sport. The athletes varied in their athletic scholarship status, with 88 reporting no scholarship, 67 reported a partial scholarship of less than 25% funding, 93 reported partial funding between 26%-75%, 28 reported partial funding between 76%-99%, and 26 reported full funding (i.e. a full ride). Four athletes did not report their scholarship status. The average number of years the participants engaged in the current sport was 9.19 ($SD = 4.42$). The average number of seasons of the current teams was 2.10 ($SD = 1.48$), and the average years spent playing with the current coach was 1.68 ($SD = .99$). Most of the coaches were male ($n=184$). The majority of the athletes identified themselves as Caucasian (77.5%), while the remaining of the participants identified as African American (13.7%), Hispanic (3.6%), Asian (1.0%), and Mixed (1.6%).

Measures

Perceived autonomy-supportive coaching behaviors

The athletes' perception of the autonomy-supportive behaviors displayed by their coaches throughout the season was evaluated by using the shortened version of the Sport Climate

Questionnaire (Perceived autonomy support, n.d.). The scale consisted of six items (e.g., "My coach listens to how I would like to do things"; "My coach encourages me to ask questions"; "My coach give athletes some choice about what to do in practice and games"). Response options for each of the items are scored on a 7-point scale, ranging from *strongly disagree* to *strongly agree*, with higher scores indicating more autonomy-support coaching style. Using a sample of college and high school athletes, Amorose and Anderson-Butcher (2007) have provided evidence of the internal consistency and the factorial and construct validity of the scale.

Perceived controlling coaching behaviors

The athletes' perception of controlling behaviors displayed by their coaches throughout the season was evaluated by using the Controlling Coach Behavior Scale (Bartholomew et al., 2010). The measure includes 15 items reflecting four dimensions of controlling behaviors, including controlling rewards (e.g. "My coach only uses rewards/praise so that I complete all of the tasks he/she sets in training"), negative control regard (e.g. "My coach is less accepting of me if I have disappointed him/her"), intimidation (e.g. "My coach intimidates me into doing the thing he /she wants me to do"), and excessive personal control (e.g. "My coach tries to interfere in aspects of my life outside of sport"). The responses options ranged on a 7-point scale of *strongly disagree* to *strongly agree,* with higher scores indicating a more controlling coaching style. The average of the 4 subscales were totaled together to reflect the overall degree of controlling coach behavior. Using adolescent athletes, research by Bartholomew et al. (2010) provided evidence of acceptable internal consistency and factorial and construct validity for the scale.

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Perceived coaching effectiveness

The perceived effectiveness of the coaches was assessed by measuring athletes'
confidence in their coach's coaching ability throughout the season using the Other-Efficacy
Instrument (Jackson et al., 2011). The measure includes 15 items, which are scored on a 7-point
scale, with scores ranging from *not confident at all* to *completely confident*. Example items
include, "Communicate effectively towards you at all times", "Prepared you for physical
competition", and "Puts in the effort needed to ensure you progress as an athlete". Jackson et al.
(2011) provided preliminary evidence of the reliability and validity of the measure with a sample
of athletes competing at the regional, national, and university level.

Procedure

Following approval from a university research board, athletic teams were emailed
requesting participation in the study. The teams used in the study were from across the Midwest
and Mid-Atlantic regions of the United States. These regions were chosen because of
convenience and access for the research team. Following subsequent approval, the athletic teams
were met at their training facilities during a convenient day and time. At this meeting, an
investigator informed the student-athlete of the nature of this study. Before the survey was
administered, the participants were verbally informed of their rights as participants including:
their right to confidentiality, the ability to withdraw at any time for any reason without penalty,
that all responses will be kept anonymous, and that acceptance and completion of the survey
implied voluntary consent. If the athletes agreed to participate, they were given the pen and
paper survey and completed the survey, which lasted approximately 15 - 20 minutes. All
coaches, trainers, or non-participant athletes were asked to leave the research area during the data

collection. Once the surveys were complete, the athletes individually handed them to researchers and left the premises.

Data Analyses

All data analyses were conducted using Version 26 of the Statistical Pack for the Social Sciences (SPSS). The analytic strategy proceeded in the following order. First, preliminary analyses explored the basic descriptive statistics and bivariate correlations among all the major study variables. Next, a two-step cluster analysis was used to determine whether profiles of athletes could be identified based on their perceptions of the autonomy-supportive and controlling behaviors exhibited by their coaches. The default settings were used in this two-step cluster analysis. Specifically, up to 15 clusters were allowed to emerge and the log-likelihood distance measure was used to capture and code emergent homogenous groups. The final number of clusters was determined based on a combination of the of model quality, as assessed by the Schwarz Bayesian Criterion (Norušis, 2012), the distribution of participants per cluster, and the conceptual interpretability of the resulting profiles. Once established, a MANOVA was used to determine if the cluster membership differed based on gender, year in school, and scholarship status. The final step of the data analyses involved an ANOVA to determine if the clusters that emerged significantly ($p<.05$) differed in the perceived effectiveness of their coaches as assessed by the athletes' confidence in their coaches. Student- Newman-Keuls (SNK) post-hoc tests were used to explore which of the clusters differed.

CHAPTER III: RESULTS

Preliminary Analysis

Table 1 summarizes the bivariate correlations, internal consistency reliabilities, means, and standard deviations for all study variables. All of the study variables were internally consistent ($\alpha > .70$). Autonomy-supportive behavior was negatively correlated with controlling behavior. Autonomy-supportive behavior was strongly correlated with confidence in the coach. Controlling behavior was negatively correlated to confidence in the coach. All bivariate correlation were significant ($p<.05$) and in the anticipated directions. Specifically, autonomy support was negatively related to perceived controlling behaviors and positively related to confidence in the coach, whereas controlling behaviors were negatively related to confidence in the coach. Interestingly, the relationship between autonomy support and confidence in the coach was particularly strong ($r=.79$).

Cluster Analysis

The results of the cluster analysis indicated that multiple solutions fit reasonably well for this sample based on the model quality coefficient. Solutions ranging from two to seven clusters were examined to determine which solution provided the most unique information about the variety of athletes' experience of various coaching behaviors without being redundant across clusters. It was decided that the seven cluster solution best capture the range of athlete experience in this sample.

Table 2 summarizes the means, standard deviations, and z scores for each perceived coaching behavior variable across the seven clusters that emerged. The clusters are also displayed Figure 2. Standardized scores of ±0.5 were used as criteria for interpretation of higher of lower levels of perceived coaching behavior relative to the sample mean. Each profile was given a name based on the relative scores of the perceived coaching behaviors. The groups are arranged in Table 2 and Figure 1 from high to low in terms of their perceptions of autonomy support. The first profile was labeled high autonomy-supportive – low control ($n = 59$). This cluster included athletes who reported the highest levels of autonomy support and lowest levels of controlling behaviors compared to the other groups. The second profile was labeled high autonomy-supportive – moderate control ($n = 46$). This cluster also included athletes with very high levels of perceived autonomy support but were more moderate in their perception of controlling behaviors. The third profile was labeled high autonomy-supportive – high control ($n = 29$). This cluster represented athletes who perceived high levels of both autonomy-supportive and controlling behaviors in their coach. The fourth profile was labeled moderate autonomy-supportive – low control ($n = 75$). This cluster represents athletes who are moderate in their perception of autonomy-support and low in control. The fifth profile was labeled low autonomy-supportive – high control ($n = 47$). This profile included athletes with perceived low levels of autonomy-supportive and high levels of control. The sixth profile was labeled low autonomy-supportive – moderate control ($n = 20$). This cluster represented athletes that perceived low levels of autonomy-support and high levels of control. The last profile was labeled low autonomy-supportive – high control ($n = 29$). This cluster represented included athletes with perceived low levels of autonomy-supportive and high levels of control.

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A MANOVA was conducted to test for differences in cluster memberships across gender, year in school, and scholarship status. The overall multivariate test was non-significant, Wilk's Lamda = .92, $F (18, 820) = 1.38$, $p = .13$, indicating that the athletes in these clusters did not significantly differ in these demographic variables.

To test whether there were variations in perceived coaching effectiveness across the clusters, an ANOVA was conducted with confidence in coach as the dependent variable. The results indicated the groups significantly differed, $F (6, 305) = 56.30$, $p < .00$. Table 3 presents the mean differences by cluster. The post-hoc SNK results showed that the clusters basically all differed from one another, with the exception of cluster 3 (i.e., high autonomy-support and low control) which was not different from clusters 2 or 4. Interestingly, the pattern of these differences, which is also illustrated in Figure 3, basically shows a linear decline in confidence as the clusters decline in perceived autonomy support.

Table 1

Descriptive Statistics and Correlations for Study Variables on Final Sample (N=306)

Variable	1.	2.	3.
1. Autonomy-supportive behavior	.95		
2. Controlling behavior	-.59	.94	
3. Confidence in coach	.79	-.51	.95
Possible Range	1-7	1-7	1-7
M	5.12	2.72	4.03
SD	1.47	1.37	.83

Note. All correlations significant at $p<.01$. Cronbach's alpha coefficients are presented along the diagonal.

Table 2

Descriptive Statistics for and Differences in Perceived Coaching Effectiveness Between Perceived Coaching Behavior Profiles

Cluster	n	Autonomy-supportive behaviors M (SD)	z	Controlling behaviors M (SD)	z	Confidence in Coach M	SD
1. High autonomy-supportive - low control	59	6.68 (.33)	1.06	1.33 (.29)	-1.02	4.81[a]	.29
2. High autonomy-supportive- moderate control	46	6.23 (.36)	.76	2.38 (.42)	-.25	4.46[b]	.47
3. High autonomy-supportive – high control	28	5.96 (.58)	.57	4.02 (.81)	.95	4.28[b,c]	.55
4. Moderate autonomy-supportive - low control	72	5.02 (.49)	-.06	1.84 (.53)	-.64	4.05[c]	.55
5. Low autonomy-supportive – high control	46	4.35 (.48)	-.52	3.89 (.66)	.85	3.58[d]	.51
6. Low autonomy-supportive – moderate control	20	3.04 (.65)	-1.41	2.64 (.53)	-.06	3.20[e]	.71
7. Low autonomy-supportive – high control	28	2.22 (.88)	-1.97	5.26 (.79)	1.85	2.81[f]	1.07

Note. Means with different subscripts differ at $p<.05$.

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Table 3

Cluster Differences in Perceived Coaching Effectiveness

	Confidence in Coach	
Cluster	*M*	*SD*
1. High autonomy-supportive - low control	4.81[a]	.29
2. High autonomy-supportive- moderate control	4.46[b]	.47
3. High autonomy-supportive – high control	4.28[b,c]	.55
4. Moderate autonomy-supportive - low control	4.05[c]	.55
5. Low autonomy-supportive – high control	3.58[d]	.51
6. Low autonomy-supportive – moderate control	3.20[e]	.71
7. Low autonomy-supportive – high control	2.81[f]	1.07

Note. Overall ANOVA results, $F(6,305)=56.30$, $p<.01$. Means with different subscripts differ at $p<.05$.
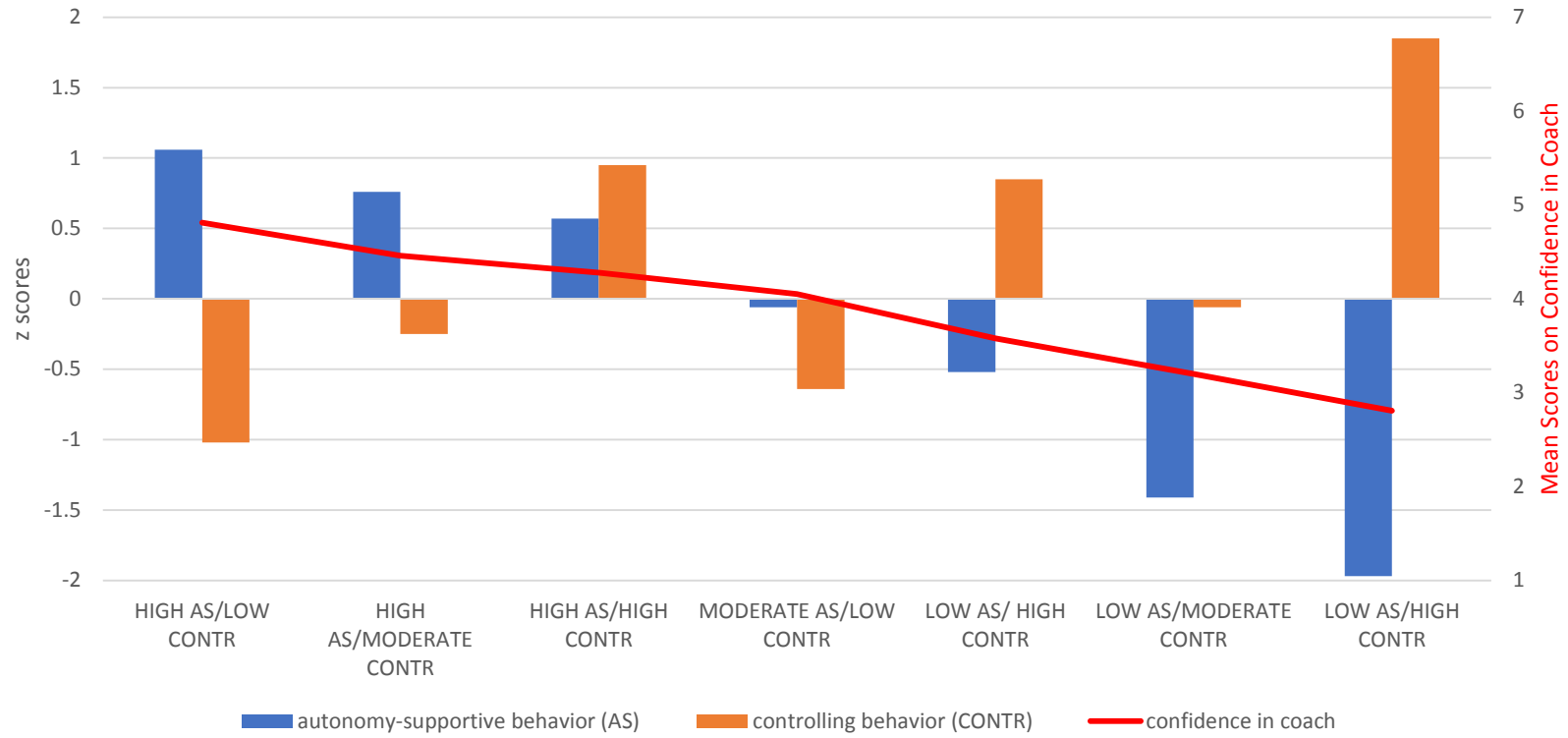
Figure 2

Perceived Effectiveness of Autonomy-supportive and Controlling Cluster Profiles
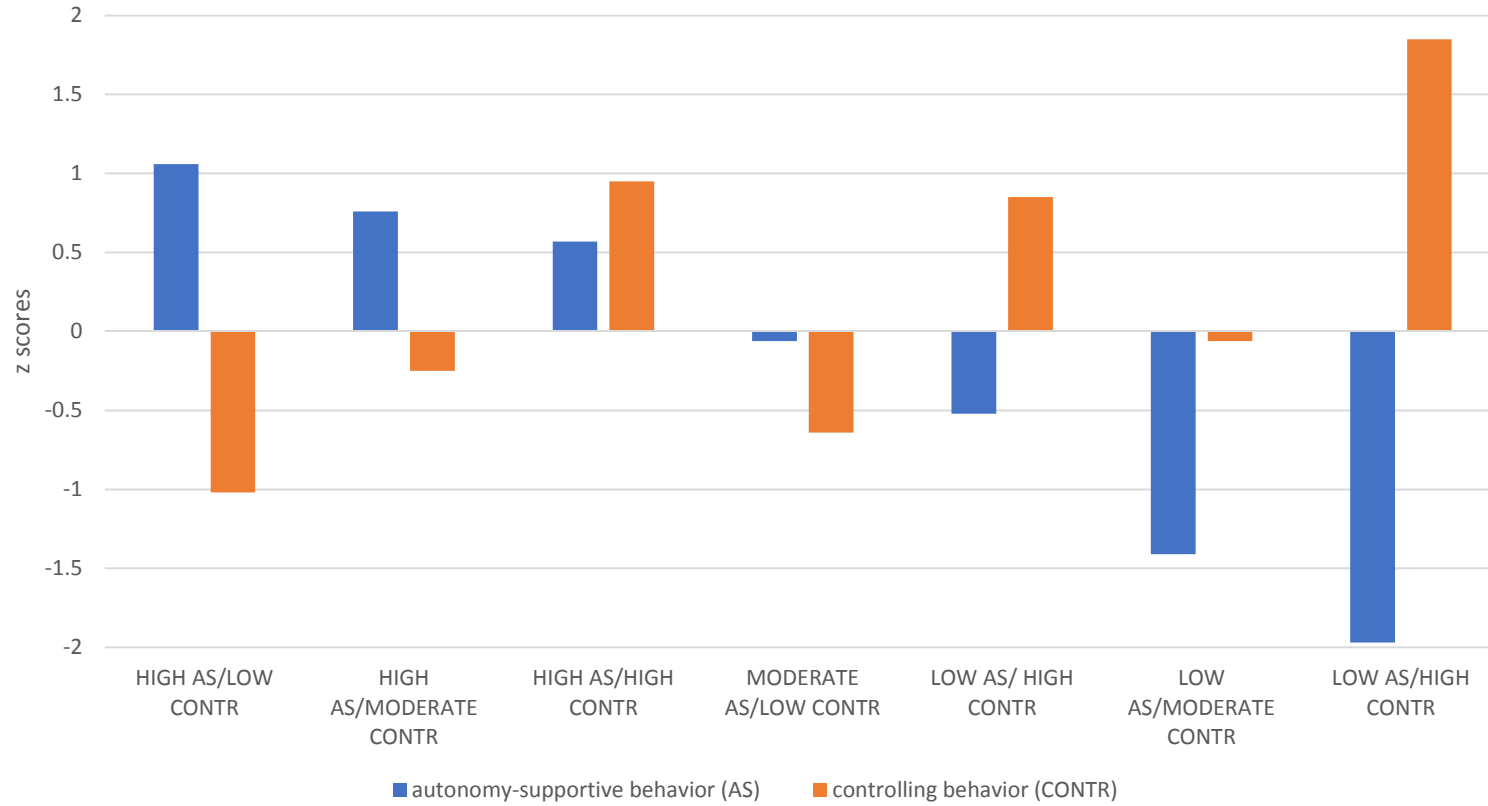
Figure 3

Differences in Coach Confidence by Perceived Effectiveness of Autonomy-Supportive and Controlling Cluster Profiles

CHAPTER IV: DISCUSSION

The purpose of this study was to determine how collegiate athletes perceive their coaches' behaviors and if there are differences in the perceived effectiveness of autonomy-supportive and controlling coaching styles. The majority of prior research has looked at autonomy-supportive behaviors and controlling behavior separately; however, coaches do not only engage in one specific behavior when coaching. The current study was particularly interested in how these behaviors combined and whether different combinations were seen as more or less effective by athletes. Effectiveness was defined as the athlete's confidence in their coach.

The cluster analysis revealed seven profiles representing athletes that perceived various combinations of low, high, and moderate levels of autonomy-supportive and controlling behaviors. However, I only hypothesized four profiles. Nevertheless, some versions of all four of the predicted profiles emerged. For example, the first predicted profile had both high levels of perceived autonomy-supportive behavior and controlling behavior. The cluster analysis showed support for this hypothesized profile ($n = 29$). The profile was closely aligned with a profile from Haerens et al. (2018). However, comparing the raw scores to the Haerens et al. (2018)'s profiles, the current study had a higher level of perceived autonomy-supportive behavior.

Another predicted profile included a low perceived autonomy support- low controlling behavior combination. The data analysis did not support this prediction. The results did yield a low perceived autonomy-supportive - moderate control behavior profile ($n = 20$). This group

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differed from the hypothesized profile by having slightly high levels of perceived controlling behaviors. Compared to Haerens et al. (2018), this profile showed that athletes appear to perceive controlling behavior stronger than autonomy-supportive behavior. I also hypothesized that one profile would reflect athletes who perceived their coaches to be high in autonomy-supportive behavior and low in controlling behavior. The results of the present study supported the predicted profile (n= 59). However, the results showed that the high perceived autonomy-supportive low control behavior profile to have higher averages when compared to the profile found in Haerens et al. (2018).

The last hypothesized profile was low perceived autonomy-supportive - high controlling behavior. The results of the current study also supported this prediction of the profile. In fact, the low perceived autonomy-supportive - high controlling behavior appeared in two of the seven profiles that emerged from the cluster analysis ($n = 47$; $n = 29$). Similar to that of the last predicted profile, Haerens et al. (2018) found a perceived low autonomy-supportive -high control behavior; however, the average scores of the low autonomy-supportive-high control profile was closer to that of Haerens et al. (2018) profile.

Of the seven profiles that emerged from the cluster analysis, three were not hypothesized. These three profiles had moderate levels of autonomy-supportive and controlling behaviors. One profile included athletes who perceived moderate autonomy-supportive - low control behavior ($n = 75$). Although this moderate autonomy-supportive – low control profile was unpredicted, it is similar to Haerens et al. (2018) profile low perceived autonomy-supportive and low controlling behavior when examining the average score of each group. However, autonomy-supportive

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behavior was perceived to be higher. The high perceived autonomy-supportive - moderate controlling behavior profile (*n* = 47) and low perceived autonomy-supportive - moderate controlling behavior profile (*n* = 20) were also not predicted. While there was considerable overlap, it is unclear exactly why some variations in profiles emerged relative to those found in Harens et al. (2018). Given the relative lack of research exploring this issue from a person-centered approach, it will be important for future research to explore whether a consistent set of profiles emerge with athletes.

In terms of perceived coaching effectiveness, it was hypothesized that the groups with higher levels of autonomy-support would have the most optimal outcomes; therefore, the perceived high autonomy-support - low perceived control profile would be seen the most effective. According to the data analysis, this hypothesis was supported. It was then hypothesized that the next most effective profile would be the high perceived autonomy-support - high control group. The results of the current study showed this profile to be the third most effective profile. However, the high perceived autonomy-supportive - moderate control behavior and the high perceived autonomy-supportive - high control behavior profile were not found to be significantly different from each other in terms of confidence in the coach. These findings infer that a certain level of controlling behaviors are perceived to be effective, similar findings were found in the educational context (Flink et al., 1990; Boggiano et al., 1993), as long as it was combined with high levels of autonomy support. A practical example of this is a coach exhibiting controlling behaviors such as the way they structure practice. However, the coach still displays higher levels of autonomy-supportive behavior, for example, being open to the athlete's opinions and giving noncontrolling feedback.

It was predicted that the least effective group would be the low perceived autonomy-support - low perceived control; however, this profile was not found in the results. The results did find, however, that the groups with the lower levels of confidence in coach to be those with low autonomy support and high or moderate levels of controlling behavior. Thus, the level of autonomy support seemed to be the main key to the perceived ineffectiveness of the coaches.

Beyond the support for many of the study hypotheses, the results revealed some other noteworthy findings. The number of athletes in some of the clusters was disproportionate. The moderate perceived autonomy-supportive - low control behavior profile had 72 athletes, which was considerably higher in number compared to the other six profiles. Although the number distribution of the cluster groups was an interesting factor, it would be interesting to see if the portion of athletes in each group stays consistent throughout future studies. Another interesting factor was that the two smallest groups of athletes, profiles 6 and 7, had reported the least amount of confidence in their coach. This was interesting because lower levels of confidence in the coach could have appeared prominent in this study, but it may have been limited in this sample.

The correlation between autonomy-supportive behavior and controlling behavior was higher than in the previous study done by Haerens et al. (2018). The current study had a correlation between autonomy-supportive behavior and controlling behavior ($r = -.59$). However, Haerens et al. (2018) reported a weaker relationship ($r = -.25$). Perhaps any differences that emerged between the two studies, such as the number of profiles, maybe a function of the

differences in this relationship. Again, given the limited work using person-centered approaches in this area, future studies will need to continue to explore the reproducibility of the profiles.

The findings of this study contribute to the literature by exemplifying how athletes view effective coaching. Prior research has examined autonomy-supportive and controlling behaviors; however, what has been found to be more effective has not been examined from the athlete's perspective. This study is also one of the few to look at the combined effects of autonomy-supportive and controlling behaviors.

Limitations and Future Directions

While this study provides a different approach to athletes' perceptions of effective coaching behavior, there are limitations. External validity is limited due to the sampling procedures. The range of sport was not evenly distributed. During the data collection, there were a limited number of team and individual sports sampled. Team sport and individuals sport athletes may perceive coaching effectiveness differently. Therefore, it is possible that a pattern of results might vary in other groups. The athletes used in this study were all collegiate athletes. The perception of colligate athletes may differ from that of elite or younger athletes. The point in the season that the data was collected may have been a limitation for the current study. There was not a consistent time in the season (e.g., pre,-season, early season, end of season) in which the athletes were surveyed. Having the athletes respond at a certain point in their season could influence the athlete's perception of effectiveness, such as coming off a winning or a losing streak. Future studies should investigate the timing of the survey to see if the athlete's

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perceptions of their coaches' behaviors and the effectiveness of the coach's change throughout the season.

Lastly, this study only took place in a Western country; therefore, there could cross-cultural differences in the perception and value of autonomy and controlling behaviors. In Western countries such as America, autonomy-supportive behavior is found to be more motivating compared to Eastern counties, such as India, where individuals are motivated by obligations (Tripathi, Cervone, & Savani, 2018). This study should be replicated in diverse cultures to evaluate if cultural perspectives on the athlete's confidence in their coach affect the athlete's perceptions of effective coaching.

Another limitation of the current study was the measure of effectiveness. The Other-Efficacy Instrument (Jackson et al., 2011) is a measure that has not been frequently used in the literature. It should also be noted that there was a very limited definition of perceived effectiveness used in this study – namely athletes' confidence in their coaches. Future research should consider other methods to measure effectiveness. Future studies could measure the effectiveness of the coach by tracking the performance changes of the athlete or measuring the athlete's satisfaction.

As is typical with person-centered approaches, another limitation of the study involves the stability of the cluster analysis. Data analyzed through cluster analysis can be subjective. There is not one set procedure on how to conduct the analysis; therefore, it is also hard to distinguish when to conclude the process. The analysis then leaves it up to the researcher's

discretion, which can make the results challenging to replicate. As noted previously, future research should attempt to replicate the profiles to determine if they accurately represent the perceptions of athletes.

Conclusions and Practical Application

The unique profiles that resulted in this study represent athletes' perceptions of effective coaching. The multiple combinations of autonomy-supportive and controlling behavior provide supporting evidence of both behaviors used at different frequencies, which then transfer to different levels of effective coaching. The first findings of the current study follow the trend of athletes perceiving a mixture of autonomy-supportive and controlling behavior in their coach's coaching style. Similar to previous literature, athletes perceive coaches that display high levels of autonomy-supportive behavior and low levels of controlling behavior to be the most effective, and coaches that display low levels of autonomy-supportive paired with high levels of control to be the least effective. The second finding showed that autonomy-supportive behaviors are highly correlated to confidence in one's coach.

There are some practical applications for coaches and athletic departments based on this study. The present findings show that athletes see their coach as most effective when the coaches demonstrate low levels of control paired with high levels of autonomy-supportive behaviors. Thus, anything a coach can do to reduce controlling behaviors and/or increase autonomy-supportive behaviors should be helpful. For instance, a coach can be more openminded to their athlete's input about gameplay. This behavior shows the athlete that their voice is heard. The coach can provide more opportunities for choice within practice. This demonstrates a less

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controlling behavior and builds autonomy support. The coach can also focus on the athlete's individual outcome rather than the team outcome and/or a title. This will reduce coaches leading with their ego and increase support with their athletes.

In order for athletic departments to increase levels of autonomy-support, they can create a program that examines the coach's coaching philosophy and interpersonal coaching style. This program will evaluate the coach's behavior in relation to how controlling or autonomy-supportive the coach is. It will monitor the levels of both autonomy-supportive and controlling behaviors. The program can then be transitioned into another program that is directed toward the athletes. This secondary program will introduce how the coach's behavior relates to the athletes' performance. Both programs will be used to monitor coaching behavior and how it is integrated with the athletes. In an overall sense, coaches can use this data to refine their interpersonal coaching style.

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