Does a Closer Coach-athlete Bond Buffer or Exacerbate the Detrimental Effects of Controlling Coaching on Athletes' Coping and Outcomes?

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Abstract

Some coaches are convinced that controlling practices will not harm their athletes if they simultaneously are warm and caring. This study, grounded in ~~the~~ Self-Determination Theory [1] and Skinner's coping framework [2], explored these convictions among 179 volleyball players (67.6% female; age = 21.12 ± 4.66 years). Participants filled out questionnaires on perceived controlling and relatedness-supportive coaching styles, their coping strategies, self-reported performance, engagement, competitive anxiety, and burnout. Results showed that perceived controlling coaching related to reduced performance, and more competitive anxiety and burnout. Controlling coaching was associated indirectly with these athletes' outcomes through compulsive compliance. Finally, when coaches were perceived to display moderate or high levels of relatedness-support, controlling coaching related to worse performance, and more competitive anxiety. These results suggest that a closer coach-athlete bond may exacerbate the detrimental impact of controlling coaching, as athletes feel internally pressured to obey the coach's demands without truly accepting these commands.

Keywords: Relatedness Support, Control, Coach Behavior, Coping, Compulsive Compliance, Self-Determination Theory

Introduction

With the intention to stimulate athletes to perform at their full potential, some sports coaches create a pressuring and controlling environment, often characterized by domineering communication and the use of threats.[3,4] These coaches assume that a controlling style will foster athletes' engagement, as reflected in greater dedication and involvement.[5] Yet, evidence contradicts this assumption.[6–8] Research increasingly shows that a controlling style and performance pressure by coaches have negative effects on athletes' engagement,[8] as well as on their vitality,[6] and mental well-being.[7] With regard to the latter outcome, controlling coaching has been linked to increases in athletes' competitive anxiety (i.e., fear of failure and tension in situations of competition)[7,9,10] and feelings of burnout,[11] as indexed by physical and emotional exhaustion, sport devaluation, and reduced athletic accomplishment.[12] In turn, feelings of anxiety and burnout are detrimental to athletes' performance. Athletes who experience high levels of anxiety perform worse than athletes with lower levels of anxiety.[13] Although positive associations have been found between autonomy-supportive behavior and performance[16,17], evidence regarding the direct relation between controlling coaching and athletes' performance is scarce. The few quantitative studies available[14,15] showed that controlling coaching is generally unrelated to athletes' performance. Clearly, more research is needed.

Self-Determination Theory (SDT)[1,18], a widely validated theory of human motivation, suggests that the detrimental effects of controlling coaching can be explained through the frustration of the three basic psychological needs for autonomy, competence, and relatedness.[8,19] Controlling coaching would give rise to feelings of pressure, failure, and social alienation, experiences that in turn have been shown to exert a detrimental effect on athletes' emotional states (e.g., higher fear of failing)[20] and anxiety.[21]

Previous research in the context of parenting[22–24] showed that the detrimental effects of a controlling style may depend on the way children cope with pressure [22–24]. Yet, studies on these coping strategies in the context of sports are currently lacking. Concerning coping, Skinner and colleagues[2,25] have grouped 400 ways of coping into twelve families, which can further be divided in relation to the frustration of each of the three basic psychological needs.[26] In terms of coping with autonomy frustration, which is expected to be the most frustrated need in relation to controlling coaching,[1] four

different coping strategies are distinguished: accommodation, negotiation, compulsive compliance, and opposition. Accommodation and negotiation are considered adaptive coping strategies that may preserve the athlete from experiencing autonomy need frustration. Accommodation implies that athletes make flexible adjustments to their own goals and priorities to willingly accept the coaches' request, even when it is communicated in a controlling fashion (i.e., adaptive concession to controlling behavior). Negotiation refers to an open, constructive, and flexible dialogue between the athlete and the coach aimed at finding a compromise between the athlete's priorities and constraints enforced by the coach (i.e., adaptive defiance to controlling behavior). The third and fourth coping strategies, compulsive compliance and opposition, are more maladaptive, resulting in feelings of autonomy need frustration. Compulsive compliance ~~is used~~ occurs when athletes ignore their own personal preferences by passively obeying the coaches' pressuring demands without accepting them (i.e., maladaptive concession to controlling behavior). Opposition involves a blunt rejection of authority and resistance against a request by doing the opposite of what is asked (i.e., maladaptive defiance to controlling behavior).

In line with theoretical assumptions that accommodation and negotiation are more adaptive, studies in the domains of parenting and teaching linked accommodation to less externalizing problems,[22] more autonomous and less controlled motivation,[27] and more engagement.[27] Similar results have been found for negotiation in terms of externalizing problems,[23,28] autonomous motivation, and engagement.[27] In contrast, compulsive compliance, which is a maladaptive coping strategy, has been related to negative outcomes such as more internalizing problems,[22] more internalizing distress,[28] more aggression,[28] more controlled motivation and amotivation,[27] and lower autonomous motivation and engagement.[27] Also, opposition is related to more externalizing problems,[23,28] and internalizing distress. Both cross-sectional[22,23] and longitudinal[24] studies in the parenting domain also showed that controlling parenting predominantly elicits maladaptive coping strategies (i.e. compulsive compliance and opposition), rather than adaptive coping strategies (i.e., accommodation and negotiation). However, one study in the teaching context[27] and one study in the parenting context[24] showed that a psychologically controlling style is also related to more negotiation. In the context of sports, no research examined the role of these

coping strategies in dealing with controlling coaching, and studies linking the coping strategies to athletes' outcomes such as performance, engagement, competitive anxiety, and burnout are lacking.

Whether or not athletes cope with controlling coaching in an adaptive versus maladaptive way, may depend on whether the coach invests in a warm and caring relationship with their athletes. According to SDT, a relatedness-supportive coaching style is generally beneficial for athletes' outcomes, as the coach respects, accepts, and cares about the athletes as individuals. [29,30] Consistent with that assumption, relatedness support is identified as a key characteristic of highly successful coaches, as indicated for instance by winning championships at highly important competitions (i.e., the Olympics) with different athletes or teams.[31,32] Relatedness support was also found to predict athletes' intrinsic motivation,[29,33] better motor learning and performance,[33] less externalizing problems[34] and better mental health (i.e., less feelings of stress, depression, and loneliness).[34] However, research found that a relatedness-supportive style can also co-occur with a controlling style. [35] The question then is whether the combination of a controlling and relatedness-supportive style elicits different coping strategies and outcomes.

Studies in parenting[36] showed that when mothers were both highly controlling and affectionate at the same time, it negatively impacted the development of children's math skills.[36] Apparently, the detrimental effects of a controlling style can get exaggerated, rather than buffered, when parents are highly relatedness-supportive.[37] Evidence from the parenting literature for this exaggeration hypothesis was obtained with different outcomes, including academic performance,[36] problem behaviors,[38] insecure self-worth,[39] and depressive symptoms.[40]

Athletes' coping responses to the interplay between controlling and relatedness-supportive styles can potentially explain how and why the combination of high control and relatedness support can affect athletes' outcomes. It has been argued that recipients of this contradictory combination of styles experience an internal approach-avoidance conflict.[37] Applying this reasoning to the sport context would mean that athletes may simultaneously want to avoid the pressuring demands and behaviors, as well as have an inclination to please their coach, with whom they experience a close bond. In turn, they would feel compelled to adhere to the controlling demands, even when these demands do not align with their

own wishes or preferences (i.e., compulsive compliance). The other maladaptive coping strategy, opposition, may also be used to cope with the combination of control and relatedness support. In this case, athletes will bluntly reject and resist the controlling request,[26] even though they experience a close bond with their coach. However, the opposite possibility, which entails that relatedness support plays a buffering role, is often used by coaches to justify their engagement in controlling practices. The buffering hypothesis assumes that the detrimental effects of controlling coaching on athletes' outcomes will be diminished when the coach is simultaneously experienced as highly relatedness-supportive. The buffering hypothesis rests on the assumption that satisfaction of the need for relatedness (through relatedness support) could compensate for the frustration of the psychological needs caused by controlling coach behavior. Athletes' experienced relatedness support would help them to see the controlling coaching in a more positive light, allowing them to overcome the problems typically associated with such a coaching style. If this hypothesis holds true, athletes would cope in an adaptive way by making flexible adjustments to their own goals and priorities (i.e., accommodation) or by engaging into an open, constructive, and flexible dialogue with their coach (i.e., negotiation). Which of these hypotheses is most likely to occur in the sports context has not yet been researched.

The present study

The general aims of this study were to examine (a) the unique associations of controlling coaching with athletes' performance, engagement, competitive anxiety, and burnout (aim 1); (b) which coping strategies play an intervening role in the associations between controlling coaching and athletes' outcomes (aim 2); and (c) if the presence of relatedness support alters the associations between a controlling coaching style and athletes' coping strategies, which in turn are related to athletes' outcomes (aim 3). In this study, athletes' competitive anxiety and burnout were measured to assess athletes' mental well-being. Performance and engagement were considered as performance-related outcomes.

For aim 1, we hypothesized, in line with previous research,[8,20,21,41] that controlling coaching would relate positively to competitive anxiety and burnout, and negatively to engagement. Due to the inconsistent findings about the relation between controlling coaching and athletes' performance, [14,15] no hypothesis is put forward. Regarding the second aim, the hypothesis was that controlling coaching would

relate negatively to accommodation and positively to compulsive compliance and opposition.[22,23,28] Based on previous studies,[22–24] we hypothesized that accommodation would predict a more adaptive pattern of outcomes (e.g., better performance, higher engagement, less feelings of anxiety and burnout), whilst compulsive compliance and opposition were expected to relate to more negative outcomes (e.g., worse performance, less engagement, more feelings of anxiety and burnout). No hypothesis is put forward for negotiation, as mixed results have been found in the literature.[22,23,27]

In line with the findings in previous studies,[36] the third hypothesis was that the detrimental effects of a controlling coaching style would be exaggerated when the coach is highly relatedness-supportive and thus that the exaggerating, rather than the buffering, hypothesis is more likely to occur.

Method

Procedures and study sample

Competitive volleyball players were contacted by e-mail and social media (Facebook) and were asked to fill out an online questionnaire, which took on average 30 minutes. In total, 321 Flemish volleyball players provided online informed consent to take part in this study (response rate = 88%). Of these 321 athletes, 139 were excluded because they did not fill out the full questionnaire which precluded an examination of the hypotheses. Another three athletes were left out because they played volleyball at a recreational level. This resulted in a final sample of 179 volleyball players (mean age = 21.12 ± 4.66 years, 67.6% female, mean training hours = 4.99 ± 2.99 hours per week). Almost 27% of these athletes played in the national Belgian volleyball competition and 73.2% played at the provincial competition level. The study protocol was approved by the Ethics Committee of the Department of Psychology and Educational Sciences at Ghent University.

Measures

The online questionnaire was conducted in Dutch and comprised four parts. Athletes first filled out a section with background variables such as the athletes' age, their gender and their coach's gender, their playing level, the number of training hours, and their years of experience. Next, athletes completed a section with questions about their perceptions of their coach's controlling and relatedness-supportive

style. Then the following four outcomes were assessed: (a) performance, (b) level of engagement during training and competitions, (c) competitive anxiety, and (d) burnout. Finally, the athletes responded to a set of items on how they cope with a controlling coaching style in which a distinction was made between accommodation, negotiation, compulsive compliance, and opposition. An acceptable McDonald's Omega (> .70)[42] was found for most variables (see Table 1). As the McDonald's Omega for opposition was very low (ω = .54), one item was removed ("I set aside what is asked of me"). This led to a better Omega value (ω = .63).

Perceived Coaching Style

The perceived controlling and relatedness-supportive coaching styles were measured using eight items from the *Interpersonal Behaviors Questionnaire* (IBQ)[43]. Both coaching styles were assessed using four items (e.g., "My coach pressures me to do things his/her way" for control; "My coach is interested in what I do" for relatedness-support). All items were rated on a 7-point Likert scale with (1) *Totally disagree,* (4) *Neutral,* and (7) *Totally agree*.

Performance

The self-perceived performance of the athletes was measured through four items referring to their intra-individual progress in comparison to the previous season.[14] Four different performance aspects (tactical, technical, physical, and psychological) were considered (e.g., "What progress have you made on your tactical performance in comparison to last season?"). An additional item referring to the general satisfaction of athletes' performance was added to the four progress indicators (e.g., "To what extent are you satisfied with your performance this season?"). All items were scored on a 7-point Likert scale ranging from (1) *Very strong regression,* (4) *Neutral* to (7) *Very strong progress* for the different performance aspects and (1) *Very dissatisfied,* (4) *Neither satisfied nor dissatisfied,* (7) *Satisfied* for the general performance satisfaction.

Engagement

The level of engagement during training sessions and competitions was measured with eight items based on the *Engagement versus Disaffection with Learning Measure*. [44] The items (e.g., "During

training sessions and competitions, I am interested") were responded to on a 7-point scale ranging between (1) *Totally disagree,* (4) *Neutral* to (7) *Totally agree*.

Competitive Anxiety

The somatic and cognitive anxiety before a game was measured with the *Revised Competitive State Anxiety Inventory-2* (CSAI-2R)[45]. Athletes read the following instructions: "Below are some statements that athletes use to describe their feelings before a match. We would like to ask you to read each statement and indicate to what extent you have that feeling before a match." Athletes then filled out 7 items for somatic anxiety (e.g., "I feel jittery") and 5 items for cognitive anxiety (e.g., "I am concerned that I may not do as well in this competition as I could") on a 4-point Likert scale, with (1) *Not at all true* and (4) *Very true*.

Burnout

Burnout was measured with five items from the subscale Emotional/Physical Exhaustion of the *Three-factor Burnout Model* by Raedeke and Smith.[46] Athletes scored the items (e.g., "I have the feeling that I don't have any energy to play volleyball") based on how often they felt like that. The items were scored on a 5-point Likert scale, ranging from (1) *Almost never* to (5) *Almost always*.

Coping Strategies

To measure athletes' coping strategies in reaction to a controlling coaching style, athletes first read the following instructions: "It can sometimes happen that you feel pressured by your coach to do something that you don't want", which was then followed with the stem: "How do you cope with such feelings of pressure and obligation?". After the stem, participants rated six items for accommodation (e.g., "I try to see that my coach actually means well.") that were taken from the *Secondary Control subscales of the Responses to Stress Questionnaire* [47] and the *Acceptance subscale of the Cognitive Emotion Regulation Questionnaire.* [48] Negotiation was assessed using five items (e.g., "I explain to my coach how I think about it.") that were adapted from the *Negotiation subscale of the Child Coping Questionnaire* (CCQ)[49,50]. Compulsive compliance (e.g., "I fearfully do what is asked of me.") was measured with a 7-item scale.[51,52] Opposition was measured with four items (e.g., "I do the opposite of what is expected from me.").[53]

Plan of Analysis

Preliminary analyses determined whether the study variables differed as a function of athletes' gender (male vs female) and playing level (national vs provincial). Separate independent samples t-tests were performed, with the ten study variables (two coaching styles, four athlete outcomes, and four coping strategies) as dependent variables and with the athletes' gender or playing level as group factors. To check if there was a relation between athletes' age, their years of playing experience, and training hours, and the ten study variables, we examined the correlations between them. Based on these analyses, each of the four pathway models was controlled for possible relevant covariates such as athletes' age, gender, number of training hours, years of experience, and playing level. All main relations were estimated by means of path analyses in lavaan (R).

In total, four pathway models were estimated. To examine the direct associations between the controlling coaching style and athletes' outcomes (performance, engagement, competitive anxiety, and burnout) (aim 1), and the moderating role of relatedness support in this relation (aim 3), we estimated a first moderation pathway model. A second moderation pathway model was performed to examine the direct associations between the controlling coaching style and athletes' coping strategies (accommodation, negotiation, compulsive compliance, and opposition) (aim 2), and the moderating role of a relatedness-supportive style in this relation (aim 3).

Next, we examined whether the four coping strategies (accommodation, negotiation, compulsive compliance, and opposition), played a mediating role in the associations between a controlling coaching style and the outcomes performance, engagement, competitive anxiety, and burnout (aim 2), by estimating indirect effects through a third model, namely a mediation pathway model. In this model, both the direct and indirect associations between controlling coaching and all four outcomes were taken into account. Finally, in a fourth pathway model of moderated mediation, we tested the relations between the interaction of controlling and relatedness-supportive coaching and the athletes' outcomes through athletes' coping. In these models, the observed relations are estimated at mean level of relatedness-support by using standardized Z-scores for our main variables. A post hoc test looking at the level of perceived relatedness support (-1SD, mean, +1SD) was conducted for all significant results of the moderated mediation model. To evaluate the fit of each model, the following indices were used:

the Comparative Fit Index (CFI), the Root Squared Error Approximation (RMSEA), the Standardized Root Mean Square Residual (SRMR), and the Tucker-Lewis Index (TLI). A good fit is indicated by cut-off values close to .95 for CFI and TLI, close to .06 for RMSEA, and close to .08 for SRMR.[54] All results were interpreted as significant when $p < .05$.

Results

Descriptive statistics and preliminary analyses

The means, standard deviations, McDonald's Omegas (ω), and the correlations between the study variables can be found in Table 1. The association between controlling and relatedness-supportive coaching was significantly negative, but small in terms of effect size (r = -.16, $p < .05$). This low association suggests that both coaching style dimensions can co-occur. In general, athletes in the sample of this study ~~scored~~ rated their coach as average controlling with a mean score of 3.20 ± 1.05 on a scale of 7.

<Insert Table 1 here>

There was a significant difference in perceived coach control, competitive anxiety, and the use of accommodation and opposition between male and female players. Males reported more coach control, relied more frequently on opposition and less frequently on accommodation as a coping strategy, and experienced less competitive anxiety, compared to female players (see Supplementary Table 1). Looking at playing level (national vs provincial), the only significant difference was found for the use of negotiation, where volleyball players competing at the national level reported significantly higher scores than players competing at the provincial level (see Supplementary Table 1). Players' age, years of playing experience, and training hours correlated with at least one study variable (see Table 1). Based on these results, we decided to control for the players' gender, playing level, age, and training hours in all analyses. Years of players' experience was not taken into account as a covariate as it was too strongly correlated with players' age (r = .80, $p < .001$; see Table 1).

Associations between controlling coaching style and athletes' outcomes

The first aim of this study was to examine the relation between controlling coaching and players' performance, engagement, competitive anxiety, and burnout (see Table 2). When the coach was experienced as more controlling, the players reported that they performed worse, experienced more competitive anxiety, and displayed more feelings of burnout. Controlling coaching did not relate significantly to engagement in training and competitions (see Table 2).

<Insert Table 2 here>

The mediating role of coping strategies in the association between controlling coaching and athletes' outcomes

The second aim of this study was to examine if the coping strategies accommodation, negotiation, compulsive compliance, and opposition played an indirect role in the relationship between controlling coaching and the outcomes of performance, engagement, competitive anxiety, and burnout. A controlling coaching style displayed significant, positive associations with accommodation, and compulsive compliance, but not with the other two coping strategies (see Table 2). Compulsive compliance related significantly to worse performance, lower engagement, more competitive anxiety, and more burnout. Opposition related negatively to athletes' competitive anxiety and to engagement. Negotiation related positively to engagement, but not to performance, anxiety, or burnout. No significant relations between the coping strategy accommodation and the four athlete outcomes were found (see Table 2).

As compulsive compliance was the only coping strategy that related significantly to both controlling coaching and the athlete outcomes, in a next step, the indirect pathway was examined from controlling coaching to athletes' outcomes through compulsive compliance (but not through the other coping strategies). The results showed that controlling coaching had significant indirect associations through compulsive compliance with athletes' performance, competitive anxiety, and burnout, but not with engagement (see Table 3).

<Insert Table 3 here>

The moderating role of relatedness support

The last aim of this study was to look at the possible moderating role of relatedness support in the associations between a controlling coaching style, athletes' coping strategies, and athletes' outcomes. The interaction between the two coaching styles showed a positive significant relation with accommodation and compulsive compliance (see Table 2). Post hoc tests showed that when a coach was perceived as highly controlling and at the same time average (mean) or highly (+1SD) relatedness-supportive, athletes coped more through accommodation (see Figures 1 and 2) and compulsive compliance (see Figures ~~2~~ 3 and 4).

<insert Figure 1 and 2 here>

<insert Figure 3 and 4 here>

Next, the relations between the interaction of controlling and relatedness-supportive coaching and the athletes' outcomes through compulsive compliance were tested via a moderation mediation analysis. No additional analyses were done for accommodation as it did not relate to any of the athletes' outcomes (see Table 2). As results showed respectively a negative and positive significant pathway for athletes' performance and competitive anxiety (see Table 3), post-hoc tests were conducted for these two outcomes (see Table 3). The associations between controlling coaching, compulsive compliance, and in turn performance and competitive anxiety were significant at moderate (mean) and high (+1SD) levels of perceived relatedness support, but not at low (-1SD) levels of perceived relatedness support (see Figure ~~3~~4 for regions of significance, and Table 3 for associations). In other words, when the coach was perceived as moderately or highly relatedness-supportive, the association between controlling coaching and compulsive compliance and in turn performance and competitive anxiety was respectively negative and positive significant.

~~<Insert Figure 3 here>~~

Discussion

The styles coaches rely on can have a substantial impact on their athletes' functioning in terms of performance, engagement, and mental well-being.[7,8] Some sports coaches are convinced that a controlling interpersonal style is beneficial, particularly because it will boost athletes' performance.

Moreover, some coaches argue that the possible detrimental effects of controlling coaching will be buffered because they also invest in a caring relationship with their athletes (buffering hypothesis). This study looked deeper into the unique associations of controlling coaching with athletes' performance, engagement, competitive anxiety and burnout, the intervening role of the coping strategies, and whether relatedness support plays a moderating role in the association between a controlling coaching style, athletes' coping strategies, and athletes' outcomes.

How Does Controlling Coaching Relate to Different Outcomes?

A pressing and important issue in contemporary sports is if and how performance can be enhanced while simultaneously optimizing well-being within highly demanding sports environments. Unfortunately, research regarding relations between controlling coaching and performance is very limited.

This study contributes to the literature by examining the unique relations between the commonly occurring controlling coaching style[35] and athletes' performance. The results underscored the detrimental nature of an experienced controlling style as it related negatively to athletes' self-reported performance. Other studies, for example with younger elite athletes,[14] found no relationship between athletes' perceptions of coaches' controlling style and athletes' performance as rated by their coach. The difference could be due to the multi-informant nature of the study of Haerens and colleagues, [14] compared to athletes' rating their own progress in the current study. Although the number of studies is currently too limited to draw firm conclusions, the available data suggest that associations between controlling coaching and performance, if any, are negative.[55] Also, present findings corroborated previous research findings of both cross-sectional[41] and meta-analytic[7] studies displaying positive relationships between controlling coaching and athletes' feelings of competitive anxiety[7,12] and burnout.[41] As such, a pressuring controlling coaching style appears to be detrimental not only to athletes' performance, but also to their mental well-being.

In the present study, no relation between a controlling coaching style and athletes' engagement was found. Perhaps this null relation indicates that some athletes do not feel they have the space to

disengage if their coach adopts a controlling style. This might be especially the case in team sports such as volleyball, as athletes feel loyal to their team, and the athletes do not want to lose their position in the team. A previous study[8], however, did find a negative relation between controlling coaching and engagement. Future research is needed to look deeper into the possible underlying factors that can influence this relationship. Overall, the results of the present study show that a controlling coaching style is generally maladaptive in terms of athletes' performance, competitive anxiety, and burnout.

Do coping strategies play a mediating role in the ~~interaction~~ associations between controlling coaching and athletes' outcomes?

Coaches often state that to be able to compete and perform, athletes need to be able to cope with pressure.[56] According to Skinner's model,[2,25] athletes can cope in four different ways with controlling coaching (i.e., accommodation, compulsive compliance, negotiation, and opposition). In relation to these four coping strategies, the innovative findings of the present study suggest that in competitive volleyball, athletes who are confronted with a controlling coach use more concessive coping strategies as they tend to cope through accommodation (i.e., trying to take the coaches' point of view) and compulsive compliance (i.e., ignoring their own personal preferences). They thus obey the coaches' demands whether or not in a~~n~~ potentially more adaptive (through accommodation) or maladaptive way (through compulsive compliance). Here, the level at which volleyball players perceived their coach to be controlling was not associated with negotiation (i.e., engaging in a dialogue with the coach) or opposition (i.e., bluntly rejecting and resisting the coach's request).

As in our study, prior research in teaching,[27] and parenting,[22,24] found that a controlling style positively related to maladaptive coping strategies such as compulsive compliance. However, the present study also showed the unexpected results that controlling coaching related to coping through accommodation, whilst no positive relationships with opposition and negotiation were found. The fact that "being coachable" is a highly-valued characteristic of athletes may explain this discrepancy in findings between the sports context and the teaching and parenting context. Athletes are perceived as more coachable when they are receptive to the coaches' instructions, when they are willing to make changes, and are more agreeable.[56,57] This could explain why athletes in the present study reported to be

more likely to cope with controlling coaching in a more concessive way (i.e., accommodation or compulsive compliance) rather than in a resistant way (i.e., negotiation or opposition). Highly controlling coaches tolerate little contradiction from their viewpoint and prefer coachable athletes who follow the demands of the coach without hesitation (i.e., accommodation or compulsive compliance).[56,57] This might also create an environment where these controlling behaviors of the coach are normalized and are no longer questioned. Also, the questionnaire used to measure controlling coaching in the present study (i.e., IBQ)[43] may be an explanation. It includes items related to limiting athletes' choices and input (e.g., 'My coach pressures me to do things his/her way'), which may automatically relate to more submissive (i.e., compulsive compliance) rather than defiance (i.e., opposition) coping strategies. Other studies using both similar and other measurements for controlling coaching need to be done to in order to examine whether athletes' coping responses depend on the type of controlling communication used by coaches.

In the current study in the sports context, predominantly compulsive compliance showed a detrimental pattern of outcomes (i.e., worse performance, lower engagement, more feelings of anxiety and burnout). Such findings are in line with previous research on compulsive compliance in the context of parenting and teaching[22–24,27] which showed that anxiety is a common outcome (among others) of compulsive compliance.[27] Opposition also showed a detrimental relationship with athletes' engagement, yet was unrelated to athletes' performance and burnout. However, opposition did relate to lower reported feelings of competitive anxiety. It seems logical that athletes who cope more by doing the opposite of what is asked of them or by ignoring the demands of their coach (i.e., opposition) are less prone to worry about performing badly (i.e., competition anxiety). At first glance, it thus seems to be a good way to cope with controlling coaching. However, previous research found that opposition related more to negative outcomes such as internalizing distress and aggression.[28] Further research is needed to examine this phenomenon and look deeper into the short and long term effects and working mechanisms of opposition on competition anxiety and other self-evaluative outcomes.

Accommodation and negotiation are considered two more adaptive coping strategies. The positive association found between controlling coaching and accommodation suggests that athletes may,

to some degree, manage to cope in a potentially more adaptive way with controlling coaching. Despite the positive correlation between accommodation and engagement, no adaptive pattern of outcomes was found in relation to accommodation. This finding is contradictory to previous research[22] that found a negative relation between psychological (parental) control and accommodation, which in turn related to less externalizing problems. Even though no research has been done on accommodation in the sport context, it may be that accommodation does not play the same adaptive role in the sport context as it does in the school or family context. Athletes may feel as if their sports aligns more with their own personal values and identity, compared to other issues that are more relevant in a school (e.g., homework) or family context (e.g., chores). By adjusting their own goals and priorities in a domain with high personal relevance (i.e., accommodation), athletes may risk experiencing more self-alienation. Future research is needed to look at how athletes may use different coping strategies in different situations and how this relates to athletes' performance and mental health. Negotiation related positively to athletes' engagement but not to athletes' performance and mental health. In terms of performance and mental health (i.e., burnout and competitive anxiety), the relation with negotiation has not yet been researched. However, as it previously related to positive outcomes such as more autonomous motivation, and less externalizing problems,[23,27] more research is needed to see if similar positive associations with performance and mental well-being can be found.

This study adds novel insights by examining the intervening role of the coping strategies in the associations between controlling coaching and athletes' outcomes (aim 2). Compulsive compliance in particular played a crucial role in the association between controlling coaching and performance and competitive anxiety. These findings are in line with previous research in parenting, where parental psychological control was found to be related to internalizing problems through compulsive compliance.[22,23] These results also corroborate results from the study by Flamant and colleagues[27] where a controlling teaching style related to less favorable outcomes (i.e., less autonomous motivation, and more controlled and amotivation) through compulsive compliance. A vicious negative cycle may thus be initiated when athletes are exposed to controlling coaching and feel pressured to obey this controlling coaching request, which may affect their well-being and performance in a negative sense. In the present

study, controlling coaching related to accommodation, a coping response that did not play a mediating role. Such findings are in line with the findings of a recent study in parenting,[22] where no indirect effects from maternal psychological control via accommodation to externalizing problems were found. Perhaps, athletes see the value of their coach's pressuring demand initially (i.e., accommodation), but shift towards obedience (i.e., compulsive compliance) when the coach is repeatedly controlling. Longitudinal research is needed to look deeper into the possible combination of these two coping strategies.

Do These Relations Change When the Controlling Coach Is also Relatedness-supportive?

The final question addressed in this study was whether or not athletes cope better with a controlling coaching style and report better outcomes, when they perceive their controlling coach as warm and caring. First, we found that relatedness support in combination with controlling coaching is related to more compulsive compliance, but also to more accommodation. This finding suggests that athletes generally use more concessive coping strategies, both adaptive and maladaptive, when they perceive their coach to be controlling and relatedness-supportive at the same time. Looking at the relations with the outcomes, two contradictory hypotheses were examined in this study, that is, the buffering hypothesis (i.e., associations between controlling coaching and negative outcomes will be reduced when the coach is warm and caring at the same time) and the exaggeration hypothesis (i.e., the downsides of a controlling approach will be more pronounced when the coach is relatedness-supportive). Both hypotheses received some support in our study, although overall more evidence for the exaggeration hypothesis was found when considering the relations with outcomes. In relation to the buffering hypothesis, we found a positive interaction effect of coach- control and relatedness support in relation to accommodation . These findings suggest that some athletes may cope in a~~n~~ potentially more adaptive way under these combination of styles. However, no relations were found between accommodation and the outcomes. This may suggest that in a competitive sport setting, using accommodation may not be as adaptive as in other contexts (i.e., school and parental context). Future research could look into whom, when and why athletes may cope in an adaptive way when confronted with this combination of styles and how and why this relates to different outcomes. In relation to the exaggeration hypothesis, the results of the present study suggest that athletes tend to cope more through

compulsive compliance, which in turn leads to more detrimental outcomes, when they are confronted with a controlling coach who is relatedness-supportive at the same time. Such exaggerated effects were also found in parenting studies.[36,38] The combination of high levels of control and relatedness support related to detrimental outcomes (e.g., worse performance, more competitive anxiety), likely because this combination elicits conflicting feelings within athletes. While the athletes feel pressured to execute the controlling demands of their coach, they may at the same time experience loyalty due to their warm bond with their coach. On the other hand, no significant results were found for engagement, even though compulsive compliance played a mediating role leading to a lower engagement when athletes perceived their coach as controlling. Even though, a strong direct negative relation with controlling coaching and burnout, and coping with a controlling style through compulsive compliance also related to more feelings of burnout, only a borderline relationship was found for the interaction of the coaching styles on burnout through compulsive compliance. As this is the first study to examine the interaction of controlling and relatedness-supportive coaching styles including the coping strategies in an athlete population, more research is needed in similar and different sports contexts to confirm and extend our findings. This study did yield novel supporting evidence that relatedness support alone leads to positive results (i.e., more engagement, more negotiation, less compulsive compliance). However, when combined with a thwarting style such as controlling coaching, ~~relatedness support could lead to more negative outcomes~~ the benefits of relatedness support may be less pronounced.

This study has a number of limitations. The first limitation relates to the cross-sectional design. The direction of effects in associations between the coaching styles, coping strategies, and outcomes could not be determined. It is very likely that relations are bidirectional in nature, with lower performance for instance also eliciting a more controlling coaching style and corresponding coping strategies. To better examine such bidirectional associations between coaches' styles, athletes' coping strategies, and outcomes, a longitudinal study design (preferably experimental) would be needed. Second, the participants in this research were a convenience sample and many athletes who started the questionnaire dropped out before finalizing it. This means that the athletes who took part in this study are not a good representation of all volleyball players in Flanders. Additionally, aside from the coaches'

gender, no other information about the coach was asked. It is thus not known how many players that filled out the questionnaire, had the same coach. Besides this, the sample consisted of athletes playing at various levels. Future research could focus on specific playing levels and look for possible differences between them. Third, all data were self-reported by the athletes. Possibly, there are discrepancies between how the athletes perceive their coach's styles, the coping strategies that they use, their performance, their engagement during training and competitions, and how others (e.g., their coach) see them. More objective measures could be included in future studies such as video-based observations of coaches' style,[35] or coaches' rated performance[14] and engagement.[58] Future research is also needed to check the validity and internal consistency of the items used to measure opposition and to look at its relation with competitive anxiety.

Conclusion and practical implications

A controlling coaching style was linked to more undesirable athlete outcomes, such as a worse performance, more feelings of competitive anxiety, and burnout. When exposed to a controlling request, athletes predominantly relied on concessive coping strategies, compulsive compliance, and accommodation, to cope with the controlling request. The non-autonomous coping strategy, compulsive compliance explained the harmful indirect relations between a controlling style and performance and competitive anxiety. When athletes perceived their coach to be simultaneously highly controlling and warm and caring (i.e., relatedness-supportive), they reported more undesirable outcomes, such as more maladaptive coping through compulsive compliance, and in turn worse performance and more feelings of competitive anxiety. Educating sports coaches about the different coaching styles and encouraging the use of need-supportive coaching styles, in absence of need-thwarting styles, can be a starting point to form a better environment for athletes to perform and reach their full potential.

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