

Youth Sport Coaches' Well-Being Across the Season: The Psychological Costs and Benefits of Giving Empowering and Disempowering Sports Coaching to Athletes

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The purpose of this study was to investigate the associations between giving empowering and disempowering sports coaching to young athletes and coaches' well-being across the season. The sample comprised 169 Norwegian youth football (i.e., European soccer) coaches with a mean age of 41.99 ($SD = 6.32$). Moreover, we were interested in examining heterogeneous groups of coaches showing variability in their self-reporting of empowering and disempowering behaviors towards their athletes. Thus, a person-centered approach was used. The latent profile analysis revealed three distinct profiles and the association between these profiles and coaches' well-being was in line with the outlined hypotheses. Specifically, coaches who gave higher levels of empowering and lower levels of disempowering sports coaching to their athletes at the beginning of the season also reported higher levels of well-being at the end of the season. The results indicate that there exists an intrinsic value as to why coaches should give empowering sports coaching, as opposed to disempowering sports coaching, to their athletes; namely, these actions may be advantageous in terms of improving their own well-being. In practical terms, future coach education may take advantage of these findings by providing coaches another reason for coaching in an empowering manner.

Keywords: coaches' perspectives, person-centered analysis, self-determination theory, soccer

Grounded in Self-Determination Theory (SDT; Deci & Ryan, 2000, 2012; Ryan & Deci, 2017), a growing body of empirical work in sport psychology has indicated that the giving of autonomy-supportive sports coaching to athletes is related to the coach's experience of improved well-being and functioning (e.g., Cheon, Reeve, Lee, & Lee, 2015; Cheon, Reeve, Yu, & Jang, 2014; Solstad, Van Hoya, & Ommundsen, 2015). The principles of SDT suggest that when people engage in benevolent acts (e.g., giving something to others), they experience enhanced well-being

because their psychological needs are satisfied (Martela & Ryan, 2015, 2016; Weinstein & Ryan, 2010). By giving autonomy-support to others (i.e., acting in a helpful and need supporting manner), people are likely to feel effective, connect with others, and experience their own behavior as volitional and self-valued (Deci, La Guardia, Moller, Scheiner, & Ryan, 2006; Legate, DeHaan, & Ryan, 2015). A question still unanswered is whether the giving of other types of constructive sports coaching to athletes may help to improve coaches' well-being. Additionally, knowing

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that people may engage in behaviors that place them at risk for experiencing need thwarting (Legate et al., 2015; Legate, DeHaan, Weinstein, & Ryan, 2013), a novel area of research would be to determine whether the giving of sports coaching, considered non-constructive to athletes, would detract from coaches' well-being.

Giving Sports Coaching to Athletes and its Potential Consequences

While Achievement Goal Theory (AGT) is one of the most popular theories of motivation in sport and exercise psychology (Roberts, 2012), no studies have sought to determine whether giving task-involving sports coaching to athletes relate to coaches' psychological functioning. Nevertheless, when people are task-involved, the act of performing various achievement tasks is viewed as a goal in itself. Thus, the very act of coaching athletes is likely to be experienced as intrinsically satisfying by a task-involved coach (Nicholls, 1989). When task-involved, coaches are likely to achieve a sense of personal competence and control by helping athletes maximize their potential. Hence, the giving of task-involving sports coaching to athletes would be expected to relate positively to coaches' well-being. Building upon this insight, and based on prior AGT- and SDT-based research (e.g., Deci et al., 2006; Solstad et al., 2015; Treasure & Roberts, 1995), we suggest that coaches who give task-involving sports coaching to their athletes are more likely to promote their own sense of autonomy, in addition to experience a sense of competence in teaching athletes new skills. This is because they freely choose to involve their athletes in a range of learning situations, thereby changing the locus of responsibility in the sport setting. Furthermore, giving recognition to others and emphasizing that everyone has an important role on the team are both key aspects of giving task-involving sports coaching to athletes. It is reasonable to expect that coaches would experience an increased sense of relatedness given that such coach behaviors are likely to elicit increased task cohesion among athletes (Heuzé, Sarrazin, Masiero, Raimbault, & Thomas, 2006). Social-support is another type of sports coaching with potential implication for coaches' well-being (Duda, 2013). Specifically, social-support involves loving, valuing, and having a deep regard for others (Pierce, Sarason, & Sarason, 1992). Thus, guided by SDT (Ryan & Solky, 1996), we suggest that giving social-support to athletes would satisfy the need for relatedness among coaches. Despite the psychological benefits of acting in a helpful and need supporting manner (Deci et al., 2006; Martela & Ryan, 2015, 2016), recent studies have indicated that people may engage in behaviors that are detrimental to their psychological needs (Legate et al., 2013, 2015).

Facing the Consequences of Sports Coaching That Hurt Athletes

Past research in the field of sport psychology has mainly suggested that athletes suffer psychological costs when they perceive controlling and ego-involving coach behaviors (Ntoumanis, 2012; Roberts, 2012). The issue of whether such behaviors may have detrimental influence on the giver's (i.e., the coach) well-being; however, has yet to be addressed in the literature. This is unfortunate considering that social psychological experiments have revealed the psychological costs of complying with directives to cause others social pain (Legate et al., 2013, 2015), as well as the network of reciprocal causal relations that exist within the coach-athlete relationship (Smith & Smoll, 2011).

Specifically, Legate et al. (2013) concluded, "Our findings bear on the developmental outcomes of people who are pressured to harm others, with implications for those who act on the basis of prejudice and the social influences (e.g., parents, communities) that encourage it. Extending this work thus represents a critical agenda" (p. 587).

The research above remind us that coaches' behaviors towards their athletes, including the coercive ones, may negatively influence coaches' well-being through athletes' reactions to such behaviors. Moreover, the tenants of SDT suggest that "controlling contexts are ones that pressure people to think, feel, or behave in specific ways through the use of coercive or seductive pressures and demands" (Deci & Ryan, 2012, p. 94). Hence, the seeming disparity in thinking about controlling behaviors, by only taking the perceiver perspective, may limit the way in which sport psychologists conceptualize their future research. Informed by recent empirical work (Legate et al., 2013, 2015), we suggest that when coaches give controlling sports coaching to their athletes, it is therefore detrimental to the coaches' sense of well-being, as these acts would surely thwart their psychological needs for autonomy, competence, and relatedness. This suggestion takes the more commonly viewed perspective of the athletes perceiving controlling behaviors from their coach, and instead views the effects of the controlling behaviors from the perception of the coaches themselves (i.e., the giver's perspective).

By giving controlling sports coaching to athletes, coaches would likely experience a diminished sense of autonomy because they expose themselves to a greater risk of experiencing interpersonal conflicts with their athletes.¹ This, in turn, implies that coaches may perceive the sport setting as a pervasive condition of threat, leading to more coercive and defensive behaviors, and thus thwarting of their need for autonomy. When coaches give controlling sports coaching to their athletes, they are also more likely to experience a diminished sense of competence by having contributed to frustration or thwarting of athletes' psychological needs, which in turn, could be linked to a reduction in athletes' inherent drive and interest. Accordingly, coaches are likely to perceive inferior long-term performances and weakened functioning among their athletes, in which case the coaches' need for competence could be thwarted. Lastly, coaches who give controlling sports coaching to their athletes would likely experience a diminished sense of relatedness; because, controlling sports coaching relates to behaviors, which focus on imposing a specific and preconceived way for athletes to behave while participating in the sporting activity. As such, controlling behaviors fully contradict autonomy-supportive behaviors in which direct expressions of caring, involving oneself in the life of others, and taking another's perspective are in forefront (Deci & Ryan, 2012).

Ego-involvement, by comparison, is a concept commonly referred to in both the AGT- and SDT-based literature (e.g., Deci & Ryan, 1985; Nicholls, 1989; Ryan, 1982). According to AGT, the state of ego involvement refers to "the desire to enhance the self by establishing one's superiority relative to others, even when one might not be directly competing with or even imagining any specific others" (Nicholls, 1989, p. 87). Whereas SDT assumes that ego-involved individuals "become invested in, and pressure themselves toward, particular outcomes. They evaluate themselves in terms of the outcomes they attain" (Deci & Ryan, 1985, p. 108). In other words, when ego-involved, individuals become involved with the activity at hand because they want to prove their normative competence, as their goal is to preserve their

self-esteem (Deci & Ryan, 1985). Hence, this state of involvement includes an external perceived locus of causality and extrinsic motivation, thus creating an internally controlling motivational orientation (Ryan, 1982).²

It seems reasonable to argue that the giving of ego-involving sports coaching to athletes, in any athletic event in which every coach and athlete struggles for supremacy, will be associated with various indices of compromised mental health outcomes (e.g., negative affect, distress, shame, and guilt). This is because coaches are likely to feel pressure either from their internal states (e.g., self-evaluations on performance) or from the social environment (e.g., other coaches, parents) to engage in coach behaviors that will increase the likelihood of emerging victorious (i.e., giving ego-involving sports coaching to athletes). In addition, when ego-involved, coaches are likely to “be in a controlling mode vis-à-vis themselves” (Deci & Ryan, 1985, p. 109). Hence, coaches in such a state are in danger of undermining their own intrinsic motivation towards sports coaching (Deci & Ryan, 1985).

Additionally, because the coach-athlete relationship involves a network of reciprocal causal relations (Smith & Smoll, 2011), it is vital to consider the role of empathy in relation to the giving of ego-involving sports coaching to athletes. The challenge of giving ego-involving sports coaching to athletes is that athletes’ ability is judged as high or low with reference to that of others (Nicholls, 1989). Therefore, it must be emphasized that there will always be athletes who are judged to be below average in ability, regardless of whether athletes are brought together or kept apart on the basis of their current ability level. Coaches who give ego-involving sports coaching are likely to experience athletes who are in distress, experiencing a state in which their self-esteem is ‘on the line,’ and thus undergoing more pressure and tension from their coaches (e.g., Deci & Ryan, 1985; Ntoumanis, Taylor, & Thøgersen-Ntoumani, 2012). However, a recent SDT-based study has indicated that only autonomous motivation mediates the association between empathetic concern and helping behaviors, while controlled motivation had no such effect (Pavey, Greitemeyer, & Sparks, 2012). Previous AGT-based studies (e.g., Pensgaard & Roberts, 2000; Smith, Smoll, & Cumming, 2007) gather that there is an increased risk that ego-involved coaches will only be autonomously motivated to help their best athletes, leaving a large proportion of their athletes in distress. Nevertheless, coaches who give ego-involving sports coaching to their athletes, while at the same time focusing on the emotions of all their athletes, are likely to experience a decrease in their functioning and mental health. This is because the quality of the coach-athlete relationship is likely to provide coaches with feedback comprising of information that will make them feel less effective as coaches, less able to connect with their athletes, and less volitional in their role as coaches.

The Current Study

Keeping the above notions in mind, Duda (2013) proposed a new conceptualization of the coach-created motivational climate, which combines motivational perspectives on the athletic environment from both SDT and AGT. According to this conceptualization, an empowering coach is characterized by high degrees of autonomy-supportive, task-involving, and socially supportive behaviors, whereas a disempowering coach is characterized by high degrees of controlling and ego-involving behaviors (Duda, 2013; Duda & Appleton, 2016). Therefore, the purpose of the present

study was to investigate the associations between giving empowering and disempowering sports coaching to athletes and coaches’ well-being. Furthermore, it is currently known that people may be better identified as belonging to certain clusters, which again relate differently to outcomes under study (Morin, Morizot, Boudrias, & Madore, 2011). Hence, an additional purpose of the present study was to identify unique subgroups of coaches based on their level of self-reported empowering and disempowering coach behaviors at the beginning of the season (T1) to investigate the associations of those subgroups with sets of criterion variables (i.e., coaches’ self-report measures of basic needs satisfaction, subjective vitality, and affect) at the end of the season (T2).

Method

Participants

Data are part of the Norwegian intervention arm of the larger Promoting Adolescent Physical Activity (PAPA) project (Duda et al., 2013).³ The study sample comprised 169 youth football coaches (males $n = 152$; females $n = 17$) ranging in age from 16 to 60 years ($M = 41.99$; $SD = 6.32$). Additionally, most coaches self-identified as Norwegian ($n = 163$), whereas the rest were Scandinavian ($n = 1$), European ($n = 2$), North American ($n = 1$), South American ($n = 1$), and Asian ($n = 1$). The coaches also reported that their average coaching experience was 7.10 years ($SD = 5.27$).

Procedure

After the Norwegian arm of the PAPA project received approval from the Norwegian Centre for Research Data, a sample of football clubs in the southern part of Norway was contacted by email and informed about the purpose of the study. Contact information was then obtained from those football clubs willing to participate. Moreover, the football club management was given written information, which was relayed to the coaches, about the voluntary aspect of participating in the study and the research team’s plan to ensure data confidentiality. Information was also given to the football club management, telling coaches about their opportunities, at any time, to withdrawal from the study. Lastly, members of the research team distributed the questionnaire to the main and assistant coaches, which filled it out before or after a training session, and required approximately 25 minutes to complete.

Measures

Empowering and Disempowering Coaching Behaviors

Coaches’ self-report of empowering and disempowering behaviors were assessed using a reduced Norwegian version of the following questionnaires: the Health Care Climate Questionnaire (HCCQ; Williams, Grow, Freedman, Ryan, & Deci, 1996), the Perceived Motivational Climate in Sport Questionnaire-2 (PMCSQ-2; Newton, Duda, & Yin, 2000), the Social Support Questionnaire (SSQ; Sarason, Sarason, Shearin, & Pierce, 1987), and the Controlling Coach Behaviors Scale (CCBS; Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2010). It is also worth noting that previous studies have confirmed the reliability of these scales (e.g., Qusted & Duda, 2010; Reinboth, Duda, & Ntoumanis, 2004; Solstad et al., 2015; Stebbings, Taylor, Spray, & Ntoumanis, 2012).

The empowering dimension of coaches' self-reported behaviors consisted of autonomy-supportive behaviors (4 items; Raykov's (2009) coefficient $\rho = .64$; 95% CI = [.54–.73]; S.E. = .05; factor score (FS) = .81; e.g., athletes are given choices and options), task-involving behaviors (6 items; coefficient $\rho = .80$; 95% CI = [.74–.86]; S.E. = .03; FS = .90; e.g., the coach is encouraging players to try new skills), and socially-supportive behaviors (3 items; coefficient $\rho = .64$; 95% CI = [.52–.75]; S.E. = .06; FS = .81; e.g., athletes can count on the coach, no matter what happens). Conversely, the disempowering dimension of coaches' self-reported behaviors consisted of controlling behaviors (5 items; coefficient $\rho = .76$; 95% CI = [.69–.83]; S.E. = .04; FS = .89; e.g., the coach is less supportive towards athletes when they are not performing well on practices and in competitions) and ego-involving behaviors (5 items; coefficient $\rho = .69$; 95% CI = [.62–.76]; S.E. = .04; FS = .86; e.g., the coach devotes most of his/her attention to the best players). Note that coaches' responses were made on a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Basic Psychological Needs Satisfaction

Coaches completed 10 items from the sport adapted, Norwegian version of the Basic Needs Satisfaction at Work Scale (BNSAW; Deci et al., 2001). As such, coaches' experience of basic needs satisfaction consisted of need for competence (4 items; coefficient $\rho = .56$; 95% CI = [.45–.67]; S.E. = .06; FS = .80; e.g., I do well as a coach), need for autonomy (3 items; coefficient $\rho = .64$; 95% CI = [.52–.77]; S.E. = .06; FS = .84; e.g., I decide how to coach), and need for relatedness (3 items; coefficient $\rho = .67$; 95% CI = [.56–.78]; S.E. = .06; FS = .88; e.g., I get along with athletes). In addition, coaches' responses were made on a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Evidence to support the reliability of this scale has also been provided in the sporting domain (e.g., Solstad et al., 2015; Stebbings et al., 2012).

Psychological Well-Being

Nine items from the Norwegian version of the Positive Affect Negative Affect Scale (PANAS; Crocker, 1997) assessed coaches' positive affect (5 items; coefficient $\rho = .83$; 95% CI = [.77–.90]; S.E. = .03; FS = .92; e.g., pleased, thrilled, joyful, enthusiastic, and proud) and negative affect (4 items; coefficient $\rho = .77$; 95% CI = [.62–.92]; S.E. = .08; FS = .89; e.g., unhappy, angry, frustrated, and depressed). Responses were made on a 7-point Likert-type scale, ranging from 1 (*not very often*) to 7 (*all the time*). Additionally, four items from the Norwegian version of the Trait Subjective Vitality Scale (TSVS; Ryan & Frederick, 1997) assessed coaches' experience of feeling energized and really alive in their everyday life (4 items; coefficient $\rho = .88$; 95% CI = [.85–.92]; S.E. = .02; FS = .96; e.g., full of vitality, looking forward to, alert and awake, and lots of energy). Responses were made on a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Evidence for the reliability of these scales has also been garnered by prior research (e.g., Stebbings et al., 2012).

Data Analysis

Research needs to examine relations across a season to account for method bias by introducing a time delay between measures (Podsakoff, MacKenzie, & Podsakoff, 2012). Specifically,

Podsakoff et al. (2012) argued, "Another way to control for method bias is to introduce a separation between the measures of the predictor and criterion variables" (p. 549). Previous research (e.g., Johnson, Rosen, & Djurdjevic, 2011) has indicated that correlations between latent predictor and latent criterion variables are reduced considerably when researchers introduce a temporal separation between measures. Hence, this study used a Latent Profile Analysis (LPA; Morin et al., 2011) to test the hypothesis that giving empowering sports coaching, as opposed to disempowering sports coaching, to athletes would be positively associated with coaches' well-being across the season.

Before performing the LPA using *Mplus* 7.31, several confirmatory factor analyses (CFA) were conducted to examine the factor structure of the respective scales. Specifically, we used a goodness-of-fit (GOF) evaluation to determine whether each of the CFA's were able to reproduce the observed relationships among the indicators in the sample data (Brown & Moore, 2012). Thus, a number of global GOF indices were used to evaluate the acceptability of each CFA model: the Comparative Fit Index (CFI), the Root Mean Square Error of Approximation (RMSEA), and the Standardized Root Mean Square Residual (SRMR). Additionally, recognizing that GOF evaluation is a highly debated topic among methodologists (Brown & Moore, 2012), we deemed the fit to be acceptable when the following criteria were met: CFI $\geq .90$, RMSEA $\leq .08$, and SRMR $\leq .08$.

It is worth noting that we used Full Information Maximum Likelihood (FIML) to deal with the missing data reported in this study. FIML is currently regarded as the state-of-the-art missing data technique when the data satisfies the missing at random (MAR) mechanism (Enders, 2010; Lang & Little, 2016). This missing data technique is considered superior to other traditional techniques (e.g., pairwise and listwise deletion) because it "maximizes statistical power by borrowing information from the observed data" (Enders, 2010, p. 87). Indeed, recent research has shown that FIML is effective in reducing biases due to selective attrition (e.g., Hallgren & Witkiewitz, 2013).

Using the robust maximum likelihood estimator (i.e., MLR), the LPA was performed to identify subgroups within the population based on coaches' self-report of empowering and disempowering behaviors at T1. Within the LPA framework, posterior class probabilities are estimated to decide each participant's profile belonging (Nylund et al., 2007). More specifically, the participants will be directed towards the profile where they have the highest probability. A sequence of nested models, starting with one profile, was compared to examine whether more complex models (i.e., a model containing one more profile) fitted the data better than more parsimonious models. In the current study, models with one to five profiles were tested on statistical criteria and substantive meaning to identify the optimal model. Different criteria were used to determine the best model (Nylund et al., 2007). First, the Bayesian Information Criterion (BIC; Henson, Reise, & Kim, 2007) and the sample-size adjusted BIC (SSA-BIC; Yang, 2006) were inspected, with lower values indicating better model fit. Second, the bootstrap likelihood ratio test (BLRT; Nylund et al., 2007) was used to compare the fit of two competing models. Statistically significant tests ($p < .05$) indicate that the current model solution fits the data better than a model solution with one less profile. Third, the entropy criterion was examined, which indicates how accurately people are profiled into their respective profiles (Aldridge & Roesch, 2008). Values closer to 1 indicate better accuracy (Berlin, Williams, & Parra, 2014). Fourth, the authors conducted an expert evaluation to select the solution that was most meaningful from a theoretical perspective.

To investigate whether coaches in the identified latent profiles differed with regard to obtained level of well-being (i.e., basic needs satisfaction, subjective vitality, and affective states), the 3-step approach (BCH) was used (Asparouhov & Muthén, 2014). Indeed, the well-being variables were treated as auxiliary variables and continuous distal outcomes that were compared between the different profiles. We used 100 random start values for each model, with the 20 best retained for the final solution. To avoid local maxima, the final solution was replicated with 1500 random start values (Geiser, 2013). In the 3-step approach, an overall test of association using Wald's test is calculated together with pairwise profile comparison.

Results

Table 1 displays the mean structure information, coefficient ρ , FS, and the correlations between the latent constructs constituting coaches' self-report of empowering and disempowering behaviors. With regard to missing data, 47 coaches (27.8%) dropped out of the current study. The results, using both independent t tests and Little's missing completely at random (MCAR) test, showed that the data did not satisfy the MCAR mechanism.⁴ For this reason, and as mentioned earlier, we used FIML to handle the missing data (Enders, 2010).

Confirmatory Factor Analyses

CFA solutions in which the number of freely estimated parameters equals the number of elements in the input matrix are referred to as just-identified solutions (Brown & Moore, 2012). Coaches' self-report measure of social support at T1 could only be estimated, as it could not be evaluated, using GOF indices, due to its lack of indicators. In contrast, the CFA solution of the latent variable representing coaches' self-report measure of autonomy-support at T1 yielded a good fit to the data: $\chi^2(2) = 2.985$, $p > .05$, SRMR = .03, RMSEA = .05, (90% CI RMSEA = .00 to .17), CFI = .98. So did the latent variable constituting coaches' self-report measure of task-involvement at T1: $\chi^2(9) = 6.745$, $p > .05$, SRMR = .03,

RMSEA = .00, (90% CI RMSEA = .00 to .07), CFI = 1.00. Additionally, the fit of the latent variable representing coaches' self-report measure of ego-involvement at T1 was good: $\chi^2(5) = 2.239$, $p > .05$, SRMR = .02, RMSEA = .00, (90% CI RMSEA = .00 to .07), CFI = 1.00. The CFA solution of coaches' self-report measure of their controlling coaching behaviors at T1 also provided a good fit to the data: $\chi^2(5) = 4.108$, $p > .05$, SRMR = .02, RMSEA = .00, (90% CI RMSEA = .00 to .10), CFI = 1.00. Moving on to the well-being outcomes at T2, the fit of the three latent variables that constituted coaches' basic needs satisfaction (i.e., competence, autonomy, and relatedness) yielded a good fit to the data: $\chi^2(32) = 39.054$, $p > .05$, SRMR = .06, RMSEA = .04, (90% CI RMSEA = .00 to .08), CFI = .95. Coaches' self-report measure of subjective vitality indicated a good fit to the data as well: $\chi^2(2) = .661$, $p > .05$, SRMR = .01, RMSEA = .00, (90% CI RMSEA = .00 to .13), CFI = 1.00. Lastly, the latent variables that represented coaches' self-report measures of positive and negative affect yielded an acceptable fit to the data: $\chi^2(26) = 39.455$, $p < .05$, SRMR = .07, RMSEA = .07, (90% CI RMSEA = .01 to .10), CFI = .95.

Latent Profile Analysis

The results from the LPA indicated that the model with a 3-profile solution provided the best fit to the data (see Table 2 for model fit indices). The three profiles contained 47 (profile 1; most empowering), 15 (profile 2; least empowering), and 107 (profile 3; less empowering) youth football coaches, respectively. The three profiles differed in terms of degrees of self-reported empowering and disempowering coach behaviors. We have therefore used the following labeling concerning the three different profiles: most empowering profile, less empowering profile, and least empowering profile. While prior research has used wording such as high, moderate, and low (e.g., Ivarsson, Stenling, et al., 2015), we considered it more appropriate to differentiate between the different profiles by using adverbs (see Lindwall et al., 2017). The main reason for this was due to rather high self-report values of autonomy-supportive, task-involving, and socially supportive behaviors in the least empowering profile. The subscale scores for the three latent profiles are provided in Table 3.

Table 1 Means, Standard Deviations, Coefficient ρ , Factor Scores (FS), and Correlation Matrix

	M (SD)	ρ	FS	1	2	3	4	5
1. AS	4.18 (.41)	.64	.81	1				
2. TI	4.26 (.41)	.80	.90	.77**	1			
3. SS	4.26 (.49)	.64	.81	.67**	.73**	1		
4. EI	2.11 (.59)	.69	.86	-.19*	-.33**	-.32**	1	
5. CB	1.97 (.58)	.76	.89	-.43**	-.52**	-.54**	.52**	1

Abbreviations: AS, autonomy support; CB, controlling behaviors; EI, ego involvement; SS, social support; TI, task involvement.

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

Table 2 Model Fit Criteria

	2 Profiles	3 Profiles	4 Profiles	5 Profiles
BIC	983.37	920.10	916.84	911.10
Sample Adjusted BIC	932.71	850.44	828.19	803.45
LO-Mendell Rubin LRT Test	$p < .001$	$p = .06$	$p = .30$	$p = .32$
Bootstrapped Likelihood Ratio Test	$p < .001$	$p < .001$	$p < .001$	$p < .001$
Entropy	.91	.92	.88	.88

Table 3 An Overview of the Different Latent Profiles

	Most empowering	Least empowering	Less empowering
AS	4.66	3.64	4.06
TI	4.77	3.68	4.12
SS	4.82	3.50	4.12
EI	1.82	2.55	2.17
CB	1.50	2.84	2.05
Bas psych needs T1	4.28	3.66	3.91
Bas psych needs T2	4.25	3.65	3.98
Sub vitality T1	4.09	3.68	3.74
Sub vitality T2	4.02	3.94	3.85
Positive affect T1	6.27	4.75	5.49
Positive affect T2	6.09	4.98	5.63
Negative affect T1	1.64	2.97	1.98
Negative affect T2	1.71	2.91	2.11

Abbreviations: AS, autonomy support; Bas psych needs, basic psychological needs; CB, controlling behaviors; EI, ego involving; SS, social support; Sub vitality, subjective vitality; TI, task involving.

Results from the 3-step approach were also used to analyze whether there were associations between latent profile membership at T1 and self-report measures of coaches' well-being at T2. Statistical significant differences between the three latent profiles were obtained for basic need satisfaction ($\chi^2(2) = 23.14, p < .001$), positive affect ($\chi^2(2) = 16.40, p < .001$), and negative affect ($\chi^2(2) = 11.91, p = .003$). There was, however, no statistical significant difference between the three latent profiles in subjective vitality at T2 ($\chi^2(2) = 1.95, p = .378$). Briefly, coaches in the most empowering profile differed from coaches in the two other profiles in terms of reporting higher levels of basic needs satisfaction and positive affect, and lower levels of negative affect, at the end of the season. Due to the increased tendency of method bias in cross-sectional studies (Podsakoff et al., 2012), we decided to report the relationship between the predictor

and the criterion variables at T1. The findings indicated that there were statistical significant differences between the three latent profiles in basic needs satisfaction ($\chi^2(2) = 53.13, p < .001$), subjective vitality ($\chi^2(2) = 8.81, p = .012$), positive affect ($\chi^2(2) = 69.80, p < .001$), and negative affect ($\chi^2(2) = 18.98, p < .001$). Note also that χ^2 values and effect sizes (Cohen's d) for pair-wise comparisons between the three profiles are presented in Table 4.

Discussion

We set out to identify unique subgroups of youth sport coaches, with respect to their empowering and disempowering sports coaching, at the beginning of the season in order to examine whether subgroup belonging was associated with coaches' well-being at the

Table 4 χ^2 Statistics and Cohen's d Effect Sizes for the Differences Between Profiles

	Profile 1 vs. 2	Profile 1 vs. 3	Profile 2 vs. 3
T1 Bas psych needs satisfaction	$\chi^2 = 30.62^{**}$ $d = 1.70$	$\chi^2 = 39.11^{**}$ $d = 1.12$	$\chi^2 = 5.39^*$ $d = -0.69$
T2 Bas psych needs satisfaction	$\chi^2 = 23.14^*$ $d = 1.13$	$\chi^2 = 16.50^{**}$ $d = 0.72$	$\chi^2 = 3.58$ $d = -0.63$
T1 Subjective vitality	$\chi^2 = 3.00$ $d = 0.53$	$\chi^2 = 8.08^*$ $d = 0.51$	$\chi^2 = 0.08$ $d = -0.08$
T2 Subjective vitality	$\chi^2 = 0.09$ $d = 0.09$	$\chi^2 = 1.92$ $d = 0.24$	$\chi^2 = 0.15$ $d = 0.11$
T1 Positive affect	$\chi^2 = 25.45^{**}$ $d = 1.73$	$\chi^2 = 51.62^{**}$ $d = 1.16$	$\chi^2 = 5.66$ $d = -0.75$
T2 Positive affect	$\chi^2 = 4.06^*$ $d = 0.72$	$\chi^2 = 13.41^{**}$ $d = 0.62$	$\chi^2 = 1.36$ $d = -0.41$
T1 Negative affect	$\chi^2 = 12.55^{**}$ $d = -1.22$	$\chi^2 = 8.83^*$ $d = -0.50$	$\chi^2 = 6.78^*$ $d = 0.88$
T2 Negative affect	$\chi^2 = 1.98$ $d = -0.50$	$\chi^2 = 9.96^*$ $d = -0.53$	$\chi^2 = 0.87$ $d = 0.33$

Note. All χ^2 analyses used one degree of freedom.

* $p < .05$; ** $p < .001$.

performances and subsequent well-being in their role as coaches. The reason for this is that it would seem difficult for coaches to draw athletes' attention towards task-involving principles (e.g., noting whether their performance level is improving), which is known to enhance athletes' well-being (Ntoumanis et al., 2012), without attending to these principles for themselves, as a source to their own functioning and well-being. When coaches emphasize improvement and learning, and observe that their athletes thrive and enhance their well-being based on task-involving principles, it seems likely that coaches themselves would experience well-being for the same reasons. As such, athletes may be seen as an important source to coaches' well-being by validating their value system and educational preference as coaches.

Building upon the notion that people may engage in behaviors that place them at risk of experiencing frustration or thwarting of their basic psychological needs (Legate et al., 2013, 2015), we also illuminated the potential psychological costs of giving disempowering sports coaching to athletes across the season. Our results indicate that the effect of being in the least empowering profile at the beginning of the season was associated with relatively low levels of both basic needs satisfaction and positive affect, and high levels of negative affect, compared to the other two profiles. These findings provide new insight into the psychological dynamics of giving disempowering sports coaching to athletes. Existing research has almost solely been concerned with athletes' perceptions of their coaches' behaviors (Ntoumanis, 2012; Roberts, 2012). However, considering the possible implications (e.g., negative affect, distress, shame, and guilt) for those coaches who act on the basis of control-determined reasons, it is sobering that this topic has been neglected in sport psychology research in the past. There is research to show that empathetic concern relates positively to helping behavior (Pavey et al., 2012), which in turn, has been shown to be positively related to basic needs satisfaction (Martela & Ryan, 2015, 2016; Weinstein & Ryan, 2010). Our results suggesting that the giving of disempowering sports coaching to athletes detracts from the coaches' own well-being is therefore not surprising.

Being categorized into a specific profile was not related to coaches' self-reporting of subjective vitality at the end of the season. This may be because, as opposed to basic needs satisfaction and affect, subjective vitality was not framed as football-specific; rather coaches were asked whether they had felt energized and really alive in their daily life during the last month. Hence, a number of non-football specific factors may have influenced coaches' self-reporting of subjective vitality (e.g., close relationships, work-related issues, and different types of illnesses).

One could argue that longitudinal analysis of relationships between different constructs needs to take the initial values of the criterion variables into account (Little, 2013; Selig, Preacher, & Little, 2012). However, knowing that the covariation between sets of constructs may be biased because they are measured at the same time, and share the same method of measurement, it seems contradictory to control for the initial values of the criterion variables in the latent profile analysis in the current study (Podsakoff et al., 2012). Further, considering the many flaws of the null hypothesis significance testing procedure (NHSTP; Ivarsson, Andersen, Stenling, Johnson, & Lindwall, 2015), it is also worth noting that we estimated effect sizes in this study. Similar to previous research (e.g., Johnson et al., 2011), we

observed that the strengths of the results (i.e., effect sizes) varied throughout the season. In almost all cases (i.e., differences between the three profiles), the effect sizes were significantly reduced from T1 to T2. Thus, without accounting for the issue of method bias in this study, we would have increased the risk for committing a Type I error (Podsakoff et al., 2012).

Limitations

The first limitation of this study concerns the group sizes in the three latent profiles. Although the profiles differed with regard to levels of self-reported empowering and disempowering coach behaviors, the total number of coaches, particularly in the least empowering profile, was very low. Nevertheless, simulation studies have shown that when the separation between profiles are high (e.g., entropy >.75) sample sizes around 140 is needed to reach sufficient power (Dziak, Lanza, & Tan, 2014; Gudicha, Tekle, & Vermunt, 2016). Given the high entropy in our study it is likely that we have adequate power to find the best solution. The small sample within one of the profiles, in combination with the small number of women participating in this study, are considered as limitations. Therefore, larger samples are needed in future studies to maximize the probability of more accurately investigating the psychological costs and benefits of giving empowering and disempowering sports coaching to athletes on subgroups of coaches themselves. Hence, we are careful not to generalize our findings to other samples of youth sport coaches. The second limitation concerns the fact that those coaches who completed both assessments differed from those coaches who dropped out of the study. This issue, however, was handled by using the current state of missing data practice (i.e., FIML). The third limitation of our study concerns the involvement of the sample in an intervention program. Some would argue that the involvement per se is likely to preclude examination of the naturally occurring relationships between the study variables. Nevertheless, considering that the content of the ECTP did not elaborate on the psychological costs and benefits of engaging in empowering and disempowering coach behaviors for coaches themselves, it seems fair to use the Norwegian sample of intervention coaches in the current study (see Solstad, 2017 for details). Moreover, referring the interested reader to the overview of the different latent profiles, we were not able to detect any unambiguously increase or decrease in the criterion variables (i.e., coaches' well-being) over time. If coaches had a clear advantage of participating in the Norwegian arm of the ECTP, then this would have been the case.

Practical Implications and Future Research

The findings point towards the importance of coach development programs (CDPs) aimed at altering the interpersonal behaviors of youth sport coaches. While previous research has mostly focused on the process of altering coaches' behaviors to improve athletes' psychosocial outcomes (Langan, Blake, & Lonsdale, 2013), this study, along with recent SDT-based research (Cheon et al., 2014; Solstad et al., 2015), indicate that future CDPs should also emphasize the intrinsic value of giving empowering sports coaching to athletes for coaches themselves. Importantly, considering the hustle and bustle of everyday life and the voluntary nature of youth sports coaching (Baklien, Ytterhus, & Bongaardt, 2015; Langan et al., 2013), it seems safe to argue that many coaches who attend coach education may be doing so because they feel obliged to do so. In other words, coaches may be pursuing the activity (i.e.,

attending the coach education workshop) on the basis of controlled motives. Moreover, knowing that the attainment of extrinsic aspirations is related to symptoms of ill-being (Niemiec, Ryan, & Deci, 2009), it becomes important to recognize that "what people pursue and why they pursue it both make a significant difference in their psychological well-being" (Deci & Ryan, 2012, p. 92). Hence, adding information on the benefits of giving empowering sports coaching to athletes for coaches themselves in future CDPs could make coaches more self-determined in their motivation, and in doing so, change their aspirations (i.e., why they should learn to be more empowering in the sport setting) from extrinsic to intrinsic.

According to a coach-athlete-centred approach, which highlights that "neither the coach nor the athlete can 'do it alone'; they both need one another to achieve in sport" (Jowett, 2017, p. 154), it becomes apparent that the effectiveness and success of sports coaching depend on coaches' as well as athletes' well-being. However, until recently, the number of studies focusing on maintaining a healthy and satisfied coaching workforce have been limited (e.g., Altfeld, Mallett, & Kellmann, 2015; Bentzen, Lemyre, & Kenttä, 2017). This, in turn, is disturbing because sports coaching concerns a unique dyadic relationship. Jowett (2017) argued, "When coaching is viewed as either athlete-centred or coach-centred, its scope, quality, and functions become restricted, whereas, when coaching is viewed as coach-athlete-centred, its scope becomes readily inclusive and mutually empowering" (p. 154). Hence, the major scope for future research should be to use intensive longitudinal designs (e.g., Bolger & Laurenceau, 2013) to investigate how the quality of the coach-athlete relationship influences coaches' and athletes' sport experience, performance, and well-being. In doing so, researchers are able to study the "working relationship that is likely to determine what knowledge is required to bring about important outcomes such as improved skill and enhanced performance as well as increased satisfaction, happiness, and well-being" (Jowett, 2017, p. 157). Ultimately, the coach and the athlete are equally important to the success of sports coaching, thus they both need to develop, grow, achieve, and succeed.

Also, there is a need to increase awareness about the complexity, and number of challenges, in promoting an empowering style of sports coaching in the real-world of youth sport (e.g., Denison, Mills, & Konoval, 2017; Kidman, 2001; Occhino, Mallett, Rynne, & Carlisle, 2014; Solstad et al., 2017). Over the past few years, only a small number of studies have actually highlighted that a behavioral shift to becoming an empowering sports coach is related to aspects, such as youth sport coaches' levels of self-awareness (Smith, 2014), sports coaching's disciplinary legacy (Denison et al., 2017), the contrasts between the content of CDPs and the realities of everyday coaching practices (Stodter & Cushion, 2014), the individual-based nature of current CDPs (Solstad et al., 2017), and the lack of research examining the challenges of shifting from one style of sports coaching to another (Occhino et al., 2014). Conversely, the majority of studies in the field of sport psychology have only reported the benefits of an empowering style of sports coaching, without acknowledging the difficult aspects related to coach education pedagogy and, ultimately, behavioral change (e.g., Duda, 2013; Duda & Appleton, 2016). For this reason, it is worthwhile to mention that a recent CDP initiative has encountered problems in demonstrating a positive behavioral change among coaches participating in the Norwegian intervention arm of the ECTP. Solstad et al. (2017) recently found that coaches' self-reported empowering and disempowering behaviors did not differ from pre- to post-season.

Nevertheless, post-season interviews, with a subsample of the participating coaches, showed that participation in the ECTP lead coaches to reflect on their own coaching practices. These and other findings confirm the challenges related to the development or training activity addressing youth sports coaching (e.g., Bergeron et al., 2015; Evans, McGuckin, Gainforth, Bruner, & Côté, 2015). Hence, future research should focus on gaining knowledge relating explicitly to behavioral change processes.

Conclusions

These findings are important for those involved in the progression of youth sport participation. An essential implication has long been to teach coaches how to create either an autonomy-supportive or a task-involving motivational climate, and this line of research has proven to be conducive in relation to young athletes' psychosocial outcomes (e.g., self-esteem, anxiety, and sport attrition). However, researchers must not forget the countless volunteer coaches who spend their spare time on the training ground, along with their respective athletes. While recognizing that many coaches may find it particularly interesting to learn and develop for the sake of others, we also want to emphasize that it may be coaches who are struggling to find time in their daily life. Therefore, the effect of daily life activity routines (e.g., work-related activities, family obligations, and the demands of spouse) may lead coaches to be more controlled in their motivation related to attending various CDP initiatives, which in turn, highlights the importance of actively emphasizing and communicating the duality of giving empowering and disempowering sports coaching to athletes for coaches themselves. Importantly, by pursuing such an approach one may increase the likelihood of transmitting the coach educators' values to coaches' own coaching practices on the training ground.

Finally, continuing to use a person-centered approach may help in the development of new CDPs focused on improving the performance conditions in youth sport for both coaches and athletes. Specifically, our findings indicate that coaches can be grouped into different profiles using their self-reported coaching behaviors as a grouping variable. Consequently, future research should perhaps consider creating CDPs with different contents based on coaches' personal characteristics, and in doing so, create CDPs that may be more effective.

Notes

1. A controlling situation has three main characteristics: (1) it makes the activity instrumental to receiving a reward, (2) it involves explicit evaluation, and (3) it implies that one's behavior is for somebody else's purposes instead of one's own (Deci & Ryan, 1985, pp. 95–96). Hence, athletes who are observed in a free-choice situation, after experiencing the instrumentality of choice, are likely to spend less time with the instrumental activity because the imposed contingency tend to undermine their intrinsic motivation. Moreover, when setting limits on athletes' behavior, a coach who gives controlling sports coaching to athletes is likely to “pay little attention to [the athlete's] needs or feelings and merely convey what [the athlete] has to do” (Deci & Ryan, 1985, p. 97). Consequently, it is reasonable to assume that coaches who give controlling sports coaching to their athletes have higher risk of experiencing interpersonal conflicts with their athletes.

2. Within SDT, the term internalization refers to an active and constructive process aimed at helping the individual to become more

competent and self-determined in the social environment. Specifically, internalization is completed when the regulation of motivated behavior moves from extrinsic regulation to intrinsic regulation; that is, the cultural values, which is crucial for the individual's long-term effectiveness, become the individual's values. In this process, the individual masters and incorporates behaviors that are not themselves intrinsically motivated, thus personally caused actions may diverge along a continuum of self-determination (Deci & Ryan, 1985, pp. 129–140). Deci and Ryan (1985) argued, “Ego-involvement, for example, is often the basis for regulation that is inside the person but that neither represents self-determination nor has an internal locus of causality” (p. 131).

3. The participating coaches received the 6-hour Empowering Coaching™ training program (ECTP) at the beginning of the season. However, coaches' self-report of their own empowering and disempowering behaviors were assessed before they attended the ECTP. It went approximately 5-months between the pre- and post-test assessment.

4. Little's MCAR test was significant ($\chi^2 = 169.08$; $df = 89$; $p < .001$). Moreover, two of the four *t* tests (Bootstrap) revealed that dropouts reported lower levels of need satisfaction ($t = -4.02$; $df = 81$; $p < .001$; BC 95% CI[-.37 – -.12]; Cohen's *d* effect size = .70) and positive affect ($t = -2.77$; $df = 69$; $p < .01$; BC 95% CI[-.76 – -.12]; Cohen's *d* effect size = .52) at T1. Dropouts, however, were not significantly different from those coaches who completed both assessments on subjective vitality ($t = -1.86$; $df = 76$; $p = .067$; BC 95% CI[-.48 – .01]; Cohen's *d* effect size = .32) and negative affect ($t = 1.46$; $df = 79$; $p = .149$; BC 95% CI[-.06 – .49]; Cohen's *d* effect size = .25).

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