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ORIGINAL ARTICLE

"What Goes Around Comes Around": Antecedents, Mediators, and Consequences of Controlling vs. Need-Supportive Motivational Strategies Used by Exercise Professionals

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Abstract

Background Research into the factors associated with the use of different motivational strategies by exercise professionals is of empirical and practical utility.

Purpose Grounded in self-determination theory, this study sought to analyze putative antecedents, mediators, and work-related well- and ill-being consequences of two types of motivational strategies reported by exercise professionals.

Methods Participants were 366 exercise professionals (193 males; experience = 7.7 ± 5.8 years). Questionnaires assessing psychological need satisfaction frustration, self-determined work motivation, motivational strategies (need-supportive vs. controlling), emotional exhaustion, and personal accomplishment were completed online. Path analysis was used to test the hypothesized model.

Results Model with good fit [χ^2 (5) = 9.174, p> .05; CFI = .984; TLI = .936; RMSEA = .048; SRMR = .022] showed need satisfaction as positively associated with supportive strategies and personal accomplishment (β between .267 and .399) and negatively with emotional exhaustion (β = −.145). Need frustration was negatively associated with work motivation and personal accomplishment (β = −.315; −.176), and positively with controlling strategies and emotional exhaustion (β = .195; .226). Furthermore, supportive strategies and work motivation were positively associated with personal accomplishment (β = .134; .184), whereas controlling strategies were positively associated with emotional exhaustion (β = .178).

Conclusions Findings have theoretical implications, providing evidence of need satisfaction and frustration as being differently associated with work-related motivation, type of strategies used, and work-related emotional outcomes. Practical implications convey the importance of these variables in relation to the standard of motivational strategies provided and their role on work-related well- and ill-being indicators.

Keywords Work motivation · Motivational style · Burnout · Personal accomplishment · Exercise contexts

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Most studies conducted in exercise and health contexts that have used self-determination theory (SDT) [1] have focused on understanding exercise participants' motivation and behavior. Generally, this research shows that facilitating psychological need satisfaction leads to more autonomous motivation and positive behavioral and emotional consequences [2, 3]. Relatively few studies have focused on those involved in exercise guidance, such as exercise professionals [4–7]. This study aims to address this gap and extend the emergent literature on coaches and physical education (PE) teachers [5–12], in order to provide an understanding of exercise professionals' motivation and how it influences their motivational strategies and work-related well- and ill-being indicators.

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Type of Motivational Strategies: the Cornerstone of Contextual Experience?

Research into the factors that influence the use of different types of motivational strategies is of empirical and practical utility given that they have been shown to have distinct effects on behavioral adherence and mental health outcomes [2, 3]. These different effects can be understood to be in line with SDT's fundamental premise that the process of internalization and integration of motivational regulation for a given behavior is fostered when the basic psychological needs of *autonomy*, *competence*, and *relatedness* are satisfied [1]. Within SDT, autonomy is defined as the experience of volition, integration, and self-endorsement of one's activity, competence as a sense of effectiveness in interacting with one's environment and attain valued outcomes within it, and relatedness as feeling connected, accepted, and cared for by important others. According to the theory, people will report greater need satisfaction if their environment is perceived as a *need-supportive environment*, that is, it offers autonomy support, structure, and involvement [13]. Briefly, in *autonomy supportive* contexts, individuals are encouraged to initiate actions for their own reasons, in line with their personal goals and values, and thus acting with a sense of volition, achieved through having the opportunity to make personal choices or through the full endorsement of external requests. The environmental dimension of *structure* reflects the provision of clear expectations, optimal challenges, and timely and informative feedback to support competence. *Involvement* refers to the quality of the interpersonal relationship fostering a sense of unconditional acceptance, connectedness, and understanding [14, 15]. Conversely, indicators distinctive of a *controlling social environment* include seeking compliance with external demands, coercion, pressure, criticism, withdrawal of time and attention, task-contingent rewards, and the provision of feedback to manipulate others' thoughts and behaviors [16–18].

Despite the wealth of empirical and theoretical provision that need-supportive motivational strategies have received [13, 15, 19], including the possibility of their use being successfully trained by exercise professionals with benefits both for them and their clients [7], professionals from several domains (sport, education, health) often use controlling strategies as their primary motivational tools, which can have detrimental consequences on the clients' motivational quality, engagement, and well-being [16–21]. While researchers have focused on identifying behaviors that characterize need-supportive and need-controlling strategies and the impact they have on others, little is known about the antecedents that lead professionals to use them and the effects on professionals' work-related well-being. It is therefore important to identify the conditions under which different strategies are more likely to occur in order to reduce the use of controlling strategies and their reported detrimental consequences. Indeed, whereas some studies have examined the correlates of need-supportive strategies, few have explicitly focused on controlling ones [5, 18, 20]. It is important to consider that controlling intervention strategies cannot be simply equated with the absence of need-supportive ones [16, 17]. In fact, they are likely to be characterized by relatively specific dynamics and specific outcomes, which should be studied in their own right [20, 21]. Thus, research is required to examine both autonomy supportive and controlling motivational strategies.

Previous research indicates that the influence of contextual factors on professionals' use of different types of motivational strategies is exerted via their own type of motivation to work [5, 8, 11]. According to SDT, when individuals' needs are thwarted, they are less likely to report autonomous motivation and tend to exhibit "self-centered" behaviors (i.e., having themselves as the focus). In contrast, when their needs are satisfied at work, they are more likely to report autonomous motivation to work and more inclined to engage in supportive behaviors with others in mind [1, 20]. Building upon the findings of Pelletier et al. [8], recent research confirmed both psychological needs and autonomous motivation as important determinants of professionals' use of supportive motivational strategies [5, 11].

Does Need-Supportive "Helping" Helps?

In addition to the notion that the use of autonomy supportive and controlling motivational strategies may have different antecedents [18–21], it may also have different consequences on professionals' work-related well-being. Research in other domains (i.e., relationships, pro-social behaviors) shows a bi-directional effect in that supporting autonomy tends to facilitate the giver's own psychological need satisfaction and well-being as much as it does from receiving it [22, 23]. For example, Cheon [24] found that PE teachers who displayed autonomy supportive teaching behaviors over the course of a semester reported greater teaching motivation, teaching skills, and well-being. Once again, the "dark side" of this experience has received less attention and research still needs to determine if the reverse effect also applies, i.e., whether implementing controlling strategies at work also leads to ill-being in professionals. According to SDT, when exposed to repeated need frustration, one may adopt perfectionistic standards in an attempt to prove one's worth and thus controlled behaviors would arise [20, 21]. These responses might sustain a situation of need frustration and could precipitate a negative cycle of increasing vulnerabilities for non-optimal functioning with negative outcomes for both clients and practitioners. This can be one of the avenues to better understand the burnout phenomenon, defined as the inability of the professional to continuously invest the energy needed to meet the demands of his or her job [25]. Surprisingly, research which explores the motivational processes underlying the relationships

between job context and well-/ill-being is relatively scarce [9, 10, 26–28]. SDT might serve as a general framework for the study and practice of professional' (non) optimal functioning [29, 30]. Need frustration has been identified as one possible predictor [6], but the mechanisms underlying this explanation remain to be tested.

Understanding Burnout: Motivational Strategies as Part of the Explanation?

High prevalence of burnout in the PE domain has been reported [31], with 60% of the PE teachers having taken extended sick leave at some point during their career. In the health domain, burnout indices are even worse and have reached epidemic levels [32]. Indeed, healthcare professionals are frequently exposed to occupational stress, especially due to overwhelming emotional and interpersonal interactions [33]. With this regard, the interpersonal explanation of burnout has received considerable empirical support [25]. The basic tenet of this approach is that burnout results from emotional overload and is embedded in the context of interpersonal relationships at work. Social exchange relationships exist not only at the team and organizational level but also at the interpersonal level and in both cases might lead to lack of reciprocity. In SDT terms, this lack of reciprocity may stand for the lack of professional need satisfaction (or even need frustration), as a consequence of pressuring contexts, which will preclude the professional to satisfy the needs of others, adopting controlling practices, leading to a state of mental fatigue and depletion of one's emotional resources and the tendency to evaluate one's work with recipients negatively (lack of personal accomplishment).

The Current Study

The current study seeks to analyze theoretically putative antecedents, mediators, and work-related well- and ill-being consequences of two types of motivational strategies reported by exercise professionals. It seeks to extend previous studies (e.g., sport, PE, health) by testing their tenability in the exercise context. Moreover, because past studies have shown only a moderate negative correlation between the reported use of need-supportive and controlling strategies [19–21], one could expect independent links of these two types of strategies with basic need satisfaction and frustration and well-/ill-being outcomes. Thus, the following hypothesized paths imply that: (I) Contexts that promote exercise professionals' psychological need satisfaction may indirectly help them (via self-determined work-related motivation) to use motivational need-supportive strategies with their clients, allowing a sense of work-related personal accomplishment; and (II) Conversely, need-frustration by the work context may be associated with controlling motivational strategies, via less self-determined motivation, leading to emotional exhaustion of the professional itself.

Method

Participants and Assessment Procedures

Participants of this cross-sectional study were 366 exercise professionals (172 females, 193 males, 1 non-specified) recruited online through contact lists obtained from major associations that gather personal trainers, gym instructors, and exercise group class leaders; all professionals that work directly with clients of gyms and health clubs and are responsible for the prescription and supervision of their exercise program. These lists comprise professionals mostly working in branches of national or international health club franchises. They were between 18 and 58 years of age (mean = 34.16 years, SD = 6.37) and had between 1 and 35 years of work experience (median = 6; mean = 7.7; SD = 5.8 years). Ethical approval was obtained from research ethics council of the Faculty of Human Kinetics—University of Lisbon (Approval Number: CEFMH1/2014). Informed consent was obtained from all individual participants included in the study prior to the online data collection. No reward for participation was provided.

Measures

Assessments included a comprehensive battery of validated SDT-related psychosocial measures covering the theoretical constructs under analysis, which are described below. Psychometric properties of the Portuguese versions were adequate and are described in the results section.

Need Satisfaction at Work A Portuguese version of the Basic Psychological Needs at Work Scale (BPNWS) [34] was used to assess participants' need satisfaction at work. The BPNWS is a multidimensional instrument containing 12 items divided equally into three subscales, namely, autonomy satisfaction (e.g., "*My work allows me to make decisions*"), competence satisfaction (e.g., "*I have the ability to do my work well*"), and relatedness satisfaction (e.g., "*When I'm with the people from my work environment, I feel understood*"). Responses to each item were given on a 6-point Likert scale, ranging from 1 (strongly disagree) to 6 (strongly agree). In line with several previous studies, scores for each subscale were used as indicators of professionals' overall need satisfaction factor in the hypothesized structural model.

Need Frustration at Work A Portuguese modified version of the Psychological Need Thwarting Scale (PNTS) [35] was

used to assess participants' need frustration at work. Similar to the BPNWS, the PNTS is a multidimensional instrument containing 12 items divided equally into three subscales, namely, autonomy frustration (e.g., "*I feel forced to follow decisions that I do not agree*"), competence frustration (e.g., "*I have serious doubts about whether I'm a good exercise technician*"), and relatedness frustration (e.g., "*I feel I am rejected by the group of co-workers I would like to belong*"). Responses to each item were given on a 6-point Likert scale ranging from 1 (true) to 6 (false). Scores for each subscale were used as indicators of professionals' overall need frustration factor in the hypothesized structural model.

Work Motivation A Portuguese version of the Motivation at Work Scale [36] was used to assess participants' motivational regulations at work. This scale includes 12 items, divided in four subscales, namely, intrinsic (e.g., "*Because I enjoy this work very much*"), identified (e.g., "*I chose this job because it allows me to reach my life goals*"), introjected (e.g., "*Because I have to be the best in my job*, *I have to be a 'winner'*"), and external regulation ("*Because this job affords me a certain standard of living*"). The amotivation subscale from the Portuguese version of the Work Tasks Motivation Scale for Teachers (WTMST) [37], which consists of 3 items (e.g. "*I don't know*, *I don't see the relevance of this job*") was used, because the MAWS does not contemplate one. Responses to all items were rated on a 7-point Likert scale ranging from 1 (not at all) to 7 (exactly).

In line with the notion that motivation lies on a continuum of internalizations that vary in perceived self-determination, a single score classed the "Relative Autonomy Index" (RAI) was created by weighing the subscales and then adding them. More specifically, the RAI was calculated using the following formula: (2*intrinsic) + identified – introjected – external – (2*amotivation), which was already used previously [8, 38]. Higher RAI scores reflected greater self-determined (or autonomous) motivation [38].

Need-Supportive Motivational Strategies An adapted Portuguese version of Markland & Tobin's [39] Perceived Environmental Supportiveness Scale (PESS) was administered. In this adapted version, the stem was changed to reflected professionals' perception of their practices (e.g.,"*As staff at an exercise facility I…*"), instead of participants' perceptions of need support provided by exercise practitioners (e.g., "*I felt that the staff at the exercise facility…*"). The PESS comprises 15 items developed to assess three dimensions of support, namely, autonomy support (5 items; e.g., "*I provide a range of different possibilities within the activities that I create*"), competence support (5 items; e.g., "*I explain/make it clear to my clients what it takes to achieve their goals*"), and relatedness support (5 items; e.g., "*I try to make my clients feel they are important to me*"). For this study, and with the agreement of the original author of the scale, two additional items were added in order to reflect a fundamental dimension of autonomy support not reflected in the scale (i.e., "*I encourage my clients to find personal reasons to exercise*" and "*I try to ensure that my clients understand the rationale behind each type of different activities*"). Responses to items were given on a 5-point Likert scale ranging from 0 (not true for me) to 4 (very true for me). Scores for each subscale were used as indicators of professionals' perception of their need-supportive strategies, in the hypothesized structural model.

Controlling Motivational Strategies An adapted version of the Controlling Coach Behaviors Scale (CCBS) [17] was used to assess perceived controlling motivational strategies used by the exercise professionals. The scale was slightly adapted to the exercise domain and the stem was changed to reflected professionals' perception of their practices, instead of participants' perceptions of need support provided by their instructors (i.e. "*As an exercise instructor*, please indicate how much you agree or disagree with each statement"). Responses were assigned a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree).

For this study, the initial five subscales from the CCBS [17] were used as follows: *controlling use of reward* items reflects professionals' use of extrinsic rewards and praise to induce engagement or persistence in exercise behaviors (e.g., "*I tend to use rewards/praise*, *so that my clients train harder*"); *negative conditional regard* items refer to the withholding of attention and support (displaying indifference) by the professionals when desired attributes or exercise behaviors are not displayed by their clients (e.g., "*I am less supportive with my clients if they don't train well*"); *intimidation* items illustrate behaviors that are used to intimidate or the display of power-assertive strategies designed to humiliate and belittle, such as verbal abuse and threats or yelling intimidation (e.g., "*I shout at my clients to encourage them to complete the exercises*"); *excessive personal control items* involve the use of intrusive monitoring, the imposition of strict limits, or engaging in over-intrusive behaviors such as attempting to interfere in aspects of the clients' lives that are not directly associated with their exercise participation (e.g., "*I try to interfere in aspects of my clients life outside the gym*"); *judging and devaluing* consisted of items reflecting the imposition of values and ideals by the professionals, dismissing their clients' perspectives, and devaluating them (e.g., "I am very judgemental of my clients if they are not training well"). The reasons to use these five subscales were twofold: (i) the potential prevalence of these types of behaviors in exercise settings, (ii) a statement included in the notes section of the validation paper that "it may be useful for future research to reevaluate the decision made in the current paper to remove the judging and devaluing factor from the CCBS" (17, pp. 213).

Work-related psychological well- and ill-being indicators were assessed using the subscales of perceived emotional

exhaustion and personal accomplishment, which are part of the Maslach Burnout Inventory [40], Portuguese version [41]. The emotional exhaustion subscale is composed of 9 items measuring feelings of being emotionally overextended and exhausted by one's work and as emotional resources are depleted, workers feel that they are no longer able to give themselves at a psychological level (e.g., "*I feel emotionally drained from my work*"). The personal accomplishment subscale is composed of 8 items reflecting the tendency to evaluate oneself positively or negatively with regard to one's work with the clients/other recipients, which is accompanied by feelings of high/poor professional self-esteem (e.g. "*I have accomplished many worthwhile things in this job*"; "*I deal very effectively with the problems of my recipients*"). Responses to items were given on a 7-point scale ranging from 0 (never) to 6 (every day).

Statistical Procedures

SPSS version 19.0 was used to perform descriptive analyses and screen data for violations of multivariate analyses. Mplus version 7.3 [42] was used to construct models and examined the hypothesized associations which involved several steps. First, a series of measurement models were tested for each measure in order to find the best model solution. For each measure, the fit of a one-factor and a hierarchical model were compared using a confirmatory factor analysis (CFA) framework as these models were tenable based on theory and previous research. Second, factor scores derived from the retained measurement models were saved [43] and used in path analysis to test the hypothesized motivational model. Robust maximum likelihood (MLR) estimator was used as it is robust to non-normality of observations and can handle data that are missing at random [43].

As chi-square (χ^2) values can be inflated and suggest poor model fit with larger samples sizes, the following common goodness-of-fit indices were considered to assess model fit: comparative fit index (CFI) [44], Tucker-Lewis Index (TLI) [45], root mean square error of approximation (RMSEA) [46], and standardized root mean square residual (SRMR). Values greater than .90 and .95 for the CFI and TLI were considered to reflect "reasonable" and "excellent" model fit, respectively, and values smaller than .08 or .06 for the RMSEA and SRMR were considered to reflect "reasonable" and "excellent" model fit, respectively, based on rules of thumb conventional cut-off criteria [47, 48]. In addition, the Akaike information criterion (AIC), the Bayesian information criterion (BIC), and the sample size-adjusted BIC (ABIC) were used to compare models, wherein models with the lowest AIC, BIC, and ABIC values were favored [49].

To test the indirect effects, the path model was re-estimated using bootstrapping resampling procedures (N = 5000) to compute 95% bias-corrected confidence intervals (95% BcCI). If the 95% BcCI did not include zero, the indirect association was deemed significant. This model was estimated using the maximum likelihood (ML) estimator since MLR with bootstrapping is not yet available in Mplus.

Results

Preliminary Analyses

The fit statistics for the measurement models for each measure are presented in Table 1. The goodness-of-fit values suggested that a hierarchical-CFA model exhibited the best fit to the data for need satisfaction, need frustration, controlling behaviors, and autonomy supportive behaviors, whereas, a single-factor CFA model exhibited the best fit to the data for emotional exhaustion and personal accomplishment. However, for the measure of controlling behaviors, the covariance matrix was not positive definite, which can lead to computational difficulties. In this case, we chose the single-factor CFA as it provided

Table 1 Fit indices for the measurement models

	MLRχ^2	p	df	CFI	TLI	SRMR	RMSEA [90% CI]
Work need satisfaction							
1-factor CFA	527.691	.000	54	.752	.697	.082	.155 [.143, .167]
Hierarchical CFA	115.486	.000	49	.951	.933	.039	.061 [.047, .075]
Work need frustration							
1-factor CFA	28.745	.000	54	.734	.674	.083	.107 [.095, .120]
Hierarchical CFA	91.154	.000	51	.953	.939	.048	.046 [.030, .062]
Supportive behaviors							
1-factor CFA	297.230	.000	90	.821	.792	.064	.079 [.069, .089]
Hierarchical CFA	171.770	.000	87	.927	.912	.051	.052 [.040, .063]
Controlling behaviors							
1-factor CFA	151.340	.000	74	.919	.900	.051	.053 [.041, .066]
Hierarchical CFA	116.426	.000	60	.936	.916	.048	.051 [.037, .064]
Psychological well-being and ill-being							
Emotional exhaustion	56.829	.000	23	.954	.929	.039	.065 [.044, .087]
Personal accomplishment	36.074	.000	17	.954	.924	.037	.057 [.031, .083]

an acceptable fit and the estimated parameters were within acceptable range (e.g., standardized coefficients were between 0 and 1). Further, for the measure of supportive behaviors, inspection of parameter estimates revealed evidence of misfit in the hierarchical-CFA model. Specifically, there were two items (i.e., "*I have in mind the individual needs of my clients*" and "*I give my clients freedom of choice about what they want to do*") that had problematic factor loadings. These items were deleted, and the model was reassessed. The revised model provided a reasonable and conceptually feasible approximation to the data, and was thus retained for the main analyses.

The omega coefficients [50] for each of the measures were all above .77 (i.e., work need satisfaction = .884; work need frustration = .876; autonomy supportive behaviors = .852; controlling behaviors = .829; emotional exhaustion = .831; personal accomplishment = .767). In addition, all motivation subscales were above .760 (i.e., intrinsic motivation = .817; identified regulation = .767; external regulation = .802; amotivation = .872), with the exceptions of the introjected regulation subscale = .624. As this factor was made up of only three items, the internal validity observed could be marginally accepted [51]. Table 2 reports the minimum, maximum, means, standard deviations, and the correlations among the factors score values.

Main Analysis

The hypothesized path model tested using the factor scores derived from the measurement models revealed that the following model showed an acceptable to excellent fit for the data: MLR χ^2 = 9.174; df = 5; p = .102; CFI = .984; TLI = .936; RMSEA = .048 (90% CI = .000, .096); SRMR = .022. Figure 1 presents the direct associations between study variables. Work need satisfaction was directly and positively associated with supportive behaviors (β = .399) and personal accomplishment (β = .267), and was directly and negatively associated with emotional exhaustion (β = −.145). RAI was positively and directly associated with supportive behaviors (β = .125) and personal accomplishment (β = .182) and was directly and negatively associated with controlling behaviors (β = −.298). Supportive behaviors were directly and positively associated with personal accomplishment (β = .134). Work need frustration was directly and negatively associated with RAI (β = −.315) and personal accomplishment (β = −.176) and was directly and positively associated with controlling behaviors (β = .195) and emotional exhaustion (β = .226). Last, controlling behaviors were directly and positively associated with emotional exhaustion (β = .178). No other significant direct associations were observed.

Table 3 presents the indirect associations between study variables, which were obtained when the model was re-estimated using the bootstrap resampling procedures. Need frustration was positively and indirectly associated with controlling behaviors via RAI (β = .094, 95% BcCI = [.051; .137]). However, RAI did not mediate the relationship between need satisfaction and personal accomplishment (β = .015, 95% BcCI = [−.007; .038]), between need satisfaction and supportive behaviors (β = .011, 95% BcCI = [−.006; .027]), or between need frustration and emotional exhaustion (β = .031, 95% BcCI = [−.001; .064]). Furthermore, need satisfaction was positively and indirectly associated with personal accomplishment via supportive behaviors (β = .054, 95% BcCI = [.015; .092]) and need frustration was positively and indirectly associated with emotional exhaustion via controlling behaviors (β = .035, 95% BcCI = [.006; .063]).

Discussion

As Vansteenkiste and Ryan write "individuals can be vital, open, curious, and caring. Yet, they can also be depleted, self-centered, irresponsible, and even aggressive toward people important to them. An intriguing question then is which mechanisms elicit either the 'best' or the 'beast' in each of us" (20, pp.1). SDT is at the forefront of research examining the

Table 2 Descriptive statistics and correlational analysis among the study variables

	1	2	3	4	5	6	7
1. Need satisfaction	–						
2. Need frustration	−.472	–					
3. RAI	.233	−.355	–				
4. Supportive behaviors	.428	−.246	.218	–			
5. Controlling behaviors	−.068	.300	−.367	−.104	–		
6. Emotional exhaustion	−.290	.383	−.281	−.067	.291	–	
7. Personal accomplishment	.447	−.399	.335	.334	−.190	−.180	–
Minimum	2.92	1	−7	2	1	1	2
Maximum	6	5.75	14	4	7	6	6
Mean	4.985	1.616	6.769	3.593	3.119	2.890	4.907
Standard deviation	.629	.635	3.253	.357	.910	.888	.681

All correlations above |.10| are significant at the $p < .05$ level